UNITED STATES OF AMERICA
DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

In re:	)	Administrative Law Judge
	)	Hon. George J. Jordan
Proposed Waiver and Regulations Governing the Taking of Eastern North Pacific Gray Whales by the Makah Indian Tribe	)	Docket No. 19-NMFS-0001
	)	
	)	RINs: 0648-BI58; 0648-XG84
	)	

DECLARATION OF CHRIS YATES

I, Chris Yates, declare as follows:

1. I am the Assistant Regional Administrator for Protected Resources for the West Coast Region of the National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA). I have held this position since 2013. The NMFS West Coast Region (WCR) Protected Resources Division (PRD) is charged with implementation of the Endangered Species Act, 16 U.S.C. §§ 1531 *et seq*. (ESA), and the Marine Mammal Protection Act, 16 U.S.C. §§ 1361 *et seq.* (MMPA), along the West coast of the United States. My responsibilities as Assistant Regional Administrator include oversight of ESA and MMPA conservation programs including evaluating species status, developing recovery and conservation plans, authorizing take through permit programs, and evaluating the conservation impacts of proposed projects on ESA-listed species and marine mammals. Prior to my current position, I held positions of similar responsibilities as the Assistant Regional Administrator for Protected Resources for the former Southwest Region of NMFS (now part of the WCR) and for the NMFS Pacific Islands Region. Through my work in these positions, I have extensive experience supervising implementation of the requirements of the ESA and MMPA, in particular, evaluating

how human activities affect endangered species and marine mammals, both individually and at the species, subspecies, stock, and population levels.

2. Part of my responsibilities as Assistant Regional Administrator for Protected Resources is to oversee the NMFS WCR team responsible for evaluating the Makah Indian Tribe's request for authorization, under the MMPA, to resume ceremonial and subsistence hunting for eastern North Pacific gray whales and making the agency's initial determinations. I am familiar with all aspects of the WCR's decision-making and record concerning this proceeding, and thus am testifying at this proceeding on behalf of the agency.

3. I received a Bachelor of Science from the United States Air Force Academy in 1991 and a Master of Science from the University of Florida in 2001. My Curriculum Vitae is attached as NMFS Ex. 1-1[1].

4. The MMPA establishes a moratorium on the take of marine mammals with some exceptions. The MMPA defines "take" as to harass, hunt, capture, or kill any marine mammal or to attempt any such act. 16 U.S.C. § 1362(13). As relevant here, the MMPA directs the Secretary of Commerce (Secretary) to waive the take moratorium from time to time and issue regulations authorizing take provided the statutory criteria are satisfied. The waiver process includes the following steps: (1) issuance of a notice of hearing announcing the Secretary's intention to issue a waiver and proposed regulations to implement the waiver; (2) a hearing on the proposed waiver and regulations, in which interested parties may participate, before a presiding officer or an administrative law judge (ALJ); (3) issuance of a recommended decision by the presiding officer or ALJ; and (4) issuance of a final decision by the Secretary. 16 U.S.C.

[1] NMFS's exhibits are labeled as follows: "NMFS Ex. 1-XX" for exhibits attached to the Declaration of Chris Yates; "NMFS Ex. 2-XX" for exhibits attached to the Declaration of Dr. Shannon Bettridge; "NMFS Ex. 3-XX" for exhibits attached to the Declaration of Dr. David Weller; and, "NMFS Ex. 4-XX" for exhibits attached to the Declaration of Dr. Jeffrey Moore.

§§ 1371, 1373; 50 C.F.R. Part 228. The Secretary has delegated authority for this and other MMPA responsibilities to NMFS, therefore the NOAA Assistant Administrator for Fisheries is the final agency decision-maker regarding whether to issue a waiver and regulations.

OVERVIEW OF THE MAKAH INDIAN TRIBE'S WAIVER REQUEST

5. On February 11, 2005, the Makah Indian Tribe (Makah Tribe or Tribe) submitted to NMFS an "Application for a Waiver of the Marine Mammal Protection Act Take Moratorium to Exercise Gray Whale Hunting Rights Secured in the Treaty of Neah Bay." (The Tribe's request is included as Appendix A of the 2015 DEIS referenced in paragraph 12 below.) The Tribe submitted a clarification letter related to its request in 2006. NMFS Ex. 1-2 (Makah Tribe 2006). In April 2005, the NOAA Assistant Administrator for Fisheries delegated responsibility for initial decision-making and National Environmental Policy Act, 42 U.S.C. § 4332, (NEPA) review on the Tribe's request to the NMFS Regional Administrator for the Northwest Region (which was later reorganized as the WCR). NMFS Ex. 1-3 (NMFS 2005).

6. In August 2005, to ensure fair and impartial decision-making, the NOAA General Counsel issued a memorandum implementing restrictions on internal and external communications regarding NMFS's evaluation of the Tribe's waiver request. The memorandum was updated several times and most recently reissued on March 14, 2019. NMFS Ex. 1-4 (NOAA 2019). The 2019 memorandum establishes restrictions on NMFS's internal communications between those involved in initial decision-making on the Tribe's request, including the hearing on the proposed waiver and regulations, and the NOAA Assistant Administrator for Fisheries, his staff, and others who may be involved in final post-hearing decision-making. The memorandum also implements restrictions that apply under NMFS's

regulations at 50 C.F.R. § 228.10, or are required by the Administrative Procedure Act (5 U.S.C. § 557(d)), regarding *ex parte* communications. *Id.*

7. The Tribe proposed to hunt whales from the eastern North Pacific (ENP) gray whale stock. As explained in the Declaration of Dr. Shannon Bettridge, filed herewith, under the MMPA, NMFS currently recognizes two stocks of gray whales, the ENP stock and the western North Pacific (WNP) gray whale stock. The ENP stock is considered healthy, while the WNP stock is designated as "depleted" under the MMPA and as "endangered" under the ESA. *See* NMFS Ex. 2-7, at 15, 22 (Caretta *et al.* 2017); 50 C.F.R. § 224.101. NMFS has considered whether a subgroup of ENP gray whales that feeds off the coasts of California, Oregon, Washington, and British Columbia, should be classified as a separate stock under the MMPA. After in-depth review by a task force of NMFS experts, NMFS concluded that this group – referred to as the Pacific Coast Feeding Group, or PCFG – does not qualify for designation as a separate stock. Bettridge Decl. ¶¶ 17-18; Weller Decl. ¶¶ 7, 20. This conclusion rested in part on a finding that the evidence is equivocal as to whether the PCFG's population dynamics are more a consequence of internal recruitment (calves coming to the area with PCFG mothers) than external recruitment (whales recruiting to the area that are not calves of PCFG mothers). Weller Decl. ¶¶ 18-19, 27.

8. In their 2005 submission to NMFS, the Tribe requested authorization to conduct treaty-based ceremonial and subsistence harvest of ENP gray whales within the coastal portion of the Tribe's usual and accustomed fishing grounds (U&A). The Tribe requested harvest of up to 20 whales in any five-year period, with a maximum of five whales per year, corresponding with the aboriginal subsistence whaling catch limits for ENP gray whales established by the International Whaling Commission (IWC). The Weller Declaration explains the IWC process

for establishing catch limits for aboriginal subsistence whaling. Without an IWC catch limit, tribal whaling would be a violation of the International Convention of the Regulation of Whaling, to which the United States is a party. The Tribe proposed to enact tribal regulations to govern tribal whale hunts consistent with any MMPA requirements and currently has an ordinance in place providing for the regulation and enforcement of whale hunts. (The Tribe's Ordinance is included as Appendix B of the 2015 DEIS referenced in paragraph 12 below.)

9. The Tribe proposed a strike limit of seven whales per year, a struck-and-lost limit of three per year, and, in order to prevent local depletion, a limit on the number of whales from the PCFG that could be harvested. The Tribe's proposal included measures intended to increase the likelihood that the hunt would target migrating ENP whales rather than ENP whales belonging to the PCFG, such as hunting only during the migration season (December 1 – May 31) and avoiding the Strait of Juan de Fuca, where there is a higher proportion of PCFG whales. The Tribe also proposed measures for monitoring, to protect public safety, and to ensure that the hunt is humane.

10. On May 9, 2008, the NMFS WCR released a draft environmental impact statement (DEIS) pursuant to NEPA evaluating the Tribe's proposal and a number of hunt alternatives. NMFS Ex. 1-5 (NMFS 2008). We held several public meetings and received over 400 public comments on the 2008 DEIS. *See* 77 Fed. Reg. 29,967, 29,968 (2012). We prepared a summary of those comments and draft responses. NMFS Ex. 1-6 (NMFS 2015b).

11. Subsequent to the release of our 2008 DEIS, new scientific information became available, leading us to terminate that NEPA process and undertake scoping for a new DEIS. *See* 77 Fed. Reg. at 29,968. The new information included revised population estimates for the ENP stock, genetic evidence relevant to whether the PCFG should be considered a separate stock from

the ENP stock, and evidence that some WNP whales migrated across the Pacific Ocean into areas used by ENP gray whales, whereas they had previously been thought to occur only in the western North Pacific Ocean. *See* 77 Fed. Reg. at 29,968; Weller Decl. ¶ 34.

12. After considering this new information, we released a new DEIS on March 13, 2015 and requested public comments. *See* 80 Fed. Reg. 13,373 (2015); *Draft Environmental Impact Statement on the Makah Tribe Request to Hunt Gray Whales,* U.S. Dep't of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, West Coast Region (Feb. 2015) (hereafter, 2015 DEIS). We received over 57,000 public comments on the 2015 DEIS, of which 99 percent consisted of form letters. The 2015 DEIS and the NMFS WCR's complete responses to the comments (*NMFS West Coast Region's Responses to Comments on the 2015 Draft Environmental Impact Statement on the Makah Tribe Request to Hunt Gray Whales*), along with a summary of responses to frequent comments (*NMFS West Coast Region's Responses to Frequent Comments on the 2015 Draft Environmental Impact Statement on the Makah Tribe Request to Hunt Gray Whales*), will be introduced into evidence at the commencement of the hearing on this matter per 50 C.F.R. § 228.16(b).

13. After full consideration of the Tribe's waiver request and the best available scientific evidence relevant to the MMPA criteria for issuance of a waiver, the NMFS WCR is proposing to waive the MMPA's take moratorium and issue regulations that would authorize a limited tribal ceremonial and subsistence hunt for ENP gray whales. A proposed rule, including our proposed waiver determination and our proposed regulations (herein referred to as Proposed Rule and Proposed Regulations), and a notice of hearing announcing the hearing on our proposed decisions are being published in the *Federal Register* and will be introduced into evidence at the commencement of the hearing on this matter per 50 C.F.R. § 228.16(b).

14. The MMPA requires that any determination to waive the MMPA take moratorium and issue regulations governing the take be based on the best scientific evidence available. In preparing our proposed waiver and regulations, we drew on the expertise of NMFS's lead whale scientists, Dr. Dave Weller and Dr. Jeff Moore, with the NMFS Southwest Fisheries Science Center, the Chief of our Marine Mammal and Sea Turtle Conservation Division in the NMFS Office of Protected Resources, Dr. Shannon Bettridge, and other experienced NMFS scientists and managers. Dr. Weller's, Dr. Moore's, and Dr. Bettridge's credentials are described in their declarations filed concurrently herewith. We also prepared a report detailing our analysis of the proposed waiver and regulations, based on the best available scientific information on gray whales. Our report, titled *Biological Report on the Eastern North Pacific (ENP), Gray Whale Stock*, NMFS WCR (Mar. 2019), is attached hereto as NMFS Ex. 1-7 (NMFS 2019a). We have submitted close to one hundred exhibits in support of our proposed waiver and regulations, most of which are peer-reviewed and published scientific articles relevant to evaluating the effects of the proposed hunt on gray whales and their ecosystems. We also fully considered the information contained in the 2015 DEIS, public comments on the 2015 DEIS, and our consultation with the Marine Mammal Commission (MMC), discussed below, in preparing the proposed waiver and regulations.

15. In commenting on our proposals, the MMC agreed that we had considered the best available scientific evidence: "Our overall impression is that the draft regulations are based on the best available science concerning gray whales and are appropriately precautionary." NMFS Ex. 1-8, at 1 (MMC 2017).

16. The NMFS WCR has concluded, based on our review of the record provided in support of our proposed waiver and regulations and knowledge of the available sources of

information relevant to our proposed decisions, that the proposed waiver and regulations are supported by the best scientific evidence available.

OVERVIEW OF MANAGEMENT CONSIDERATIONS

17. The statutory criteria relevant to our proposed waiver and regulations are in the MMPA, 16 U.S.C. §§ 1371(a)(1)(A) and 1373, and are discussed in detail in our Proposed Rule. Relevant standards include consideration of the distribution, abundance, breeding habits, and migratory movements of the stock for which take would be authorized and consistency with the MMPA's purposes and policies, which include maintaining marine mammals as significant functioning elements of their ecosystems and managing stocks so that they maintain or achieve their optimum sustainable population (OSP) levels (see the Bettridge Declaration paragraph 5 and the Moore Declaration paragraph 8 for an explanation of OSP).

18. In developing the proposed waiver and regulations, we considered, among other things, the information summarized in paragraphs 19 through 25 below and explained in more detail in our Proposed Rule and testimony.

19. The ENP stock is considered healthy. ENP gray whales were originally classified as an endangered species under U.S. law in 1970 (the original listing included both ENP and WNP gray whales); subsequently, the ENP stock recovered and was de-listed in 1994. From 1970 to 2016, the stock grew from 12,771 to approximately 27,000 ENP gray whales. NMFS Ex. 1-7, at 15 (NMFS 2019a). The ENP stock's abundance estimates have been within OSP levels since at least 1995. Moore Decl. ¶ 9.

20. NMFS's most recent final stock assessment report (SAR) for the ENP stock, dated 2016, estimates an abundance of 20,990 animals and states that the population is likely at or approaching its carrying capacity. Moore Decl. ¶ 9; *see* Bettridge Decl. ¶¶ 4-13 for an

explanation of the SAR process. The 2016 ENP gray whale SAR includes a potential biological removal (PBR) estimate of 624 per year for the ENP gray whale stock, meaning that 624 animals, not including natural mortalities, could be removed from the stock annually without affecting the stock's status relative to OSP. *See* Bettridge Decl. ¶ 19. The SAR estimates human-caused mortality and serious injury as 133 per year, mostly through aboriginal subsistence hunting by Chukotkan natives in Russia. Bettridge Decl. ¶ 19; Weller Decl. ¶ 24. A more recent abundance estimate for the ENP stock based on data through 2015/2016 is 26,960 animals. Weller Decl. ¶ 25.

21. As stated above, the WNP stock is listed as an endangered species under the ESA and is considered depleted under the MMPA. The 2016 SAR for the WNP stock estimates abundance at 140 animals, not including calves. Bettridge Decl. ¶ 22. The SAR estimates PBR within U.S. waters of 0.06 animals per year for the WNP stock, or one animal every 17 years, if abundance and other parameters in the PBR equation remained constant. *Id.* A more recent estimate for the WNP stock is 200 non-calf animals. Weller Decl. ¶ 36.

22. While the ENP and WNP stocks had previously been believed to be geographically isolated from each other, studies within the past decade show that some WNP whales migrate through portions of the ENP stock's range during the migration season. Weller Decl. ¶ 34. To date, researchers have identified approximately 30 gray whales seen in both the WNP and the ENP, including two known to have migrated through the Makah Tribe's U&A. Weller Decl. ¶ 34; NMFS Ex. 1-7, at 84-85 (NMFS 2019a). None of the recorded occurrences of WNP whales within the ENP range have occurred during the months of June through November. Weller Decl. ¶¶ 34, 63.

23. NMFS uses the IWC's definition of PCFG whales, which is gray whales observed between June 1 and November 30 within the region between northern California and northern Vancouver Island and photo-identified within this area during two or more years. *See* Bettridge Decl. ¶ 15. While PCFG whales are not considered a separate MMPA stock, it is possible the group could be considered for that status in the future. Bettridge Decl. ¶ 20. Recent ENP gray whale SARs have included data regarding the PCFG, including abundance estimates and an informational PBR for the group. Bettridge Decl. ¶ 21. The 2016 ENP gray whale SAR estimates PCFG abundance at 209, an informational PBR of 3.1, and human-caused mortality and serious injury as 0.25 animals per year. *Id.* A more recent abundance estimate for the group is 243. Bettridge Decl. ¶ 24; Weller Decl. ¶ 26.

24. The PCFG has been closely monitored by NMFS and other researchers for many decades, and the group is regularly assessed through photo-identification surveys. Weller Decl. ¶ 16. PCFG abundance increased rapidly in the late 1990s and early 2000s and since about 2002 has been relatively stable at around 200 animals with an overall increasing trend. Weller Decl. ¶ 26; Moore Decl. ¶¶ 19, 21. It has been estimated that about four new ENP gray whales immigrate to the PCFG each year. Weller Decl. ¶ 27; NMFS Ex. 1-7, at 31 (NMFS 2019a). Between 2002 and 2015, the PCFG grew from 197 to 243 animals, which is an annual average increase of 3.5 whales over 13 years. Weller Decl. ¶ 27.

25. Gray whales have unique markings that allow us to individually identify them through photographs, and in some circumstances gray whales can be identified through genetic samples. Weller Decl. ¶ 29. Existing photo-identification catalogs allow for reliable identification, through photographs, of PCFG whales and WNP whales. Weller Decl. ¶¶ 29-31, 37. An individual PCFG or WNP whale could be identified through genetic matching if a

sample from the same whale had been previously collected. Weller Decl. ¶ 32. NMFS has funded and participated in research involving photo and genetic identification of gray whales for several decades.

26. Based on the information described above, the NMFS WCR adopted two primary management goals to guide development of the proposed waiver and regulations: (1) limiting the likelihood that tribal hunters would strike or otherwise harm a WNP whale, and (2) ensuring that hunting does not cause PCFG abundance to decline below recent stable levels. Regarding the first management goal, the MMPA requires that we give full consideration to all factors that may affect the extent to which the subject stock may be taken, including but not limited to those expressly identified in the statute. 16 U.S.C. § 1373(b). We determined that the risk a tribal hunt could pose to WNP gray whales is an additional relevant factor we should consider. The proposed regulations are designed to minimize the risk of a WNP whale being struck or harmed over the duration of the waiver. Regarding the second management goal, the MMPA requires that we have due regard for the ENP stock's distribution and functioning within its ecosystem in issuing a waiver. 16 U.S.C. § 1371(a)(3)(A). We gave due regard to these factors by including measures in the proposed regulations to limit impacts to PCFG whales to ensure that the hunt does not cause their abundance to decline below recent stable levels and to maintain ENP gray whale distribution and functioning within the PCFG feeding area.

SUMMARY OF PROPOSED MANAGEMENT MEASURES

27. To achieve our management goals, our proposed waiver and regulations contain a number of restrictions. As explained in our Proposed Rule, Section III.A, the regulations would balance protections for WNP whales with protections for PCFG whales through alternating hunt seasons and other management measures. *See* NMFS Ex. 1-7, at 45 (NMFS 2019a). The

proposed management measures include limits on the number of strikes, unsuccessful strike attempts, and approaches that would be permitted, including training harpoon throws and training approaches. The proposed regulations define a "strike" as causing a harpoon or similar device to penetrate a whale's skin; an "unsuccessful strike attempt" as any attempt to strike a gray whale while hunting that does not result in a strike; "landing" as bringing a gray whale onto land; and "approach" as causing a hunt vessel to be within 100 yards of a gray whale. Proposed Regulations § 216.112. We chose the 100-yard standard to define approaches, as it is consistent with permit conditions NMFS generally imposes for marine mammal research as well as the guidelines for vessels provided in NMFS's "Be Whale Wise" guidelines.[2] *See* Proposed Rule, Section III.C. A whale that is struck but not landed (struck-and-lost) would count against the applicable strike limit. Proposed Regulations § 216.112. Training harpoon throws, defined as attempts to contact a whale with a blunted spear-like device that is not capable of penetrating a whale's skin, would count against the limits on unsuccessful strike attempts, because we expect the effects on gray whales to be similar. Training approaches are approaches that occur during hunt training. Proposed Regulations § 216.112.

28. Our proposed waiver is limited to a 10-year period, after which time a new waiver would need to be issued or the existing waiver extended in order for the Tribe to continue hunting. Limiting the waiver period provides an opportunity for adaptive management and to ensure that ceremonial and subsistence hunting by the Tribe does not result in unanticipated adverse effects. We also propose a shorter term for an initial hunt permit (maximum 3 years) with the opportunity for a subsequent five-year permit if warranted. Proposed Regulations § 216.113(a)(1).

[2] *See* https://www.westcoast.fisheries.noaa.gov/publications/protected_species/marine_mammals/killer_whales/be_whale_wise_brochure_2016.pdf.

29. In the proposed regulations, we identify the alternating hunt seasons as "even-year hunts" and "odd-year hunts." Even-year hunts would begin December 1 of an odd-numbered year and run through May 31 of the following even-numbered year, to coincide with the ENP stock's migration, when nearly the entire ENP stock of approximately 27,000 animals transits the migration corridor off the Washington coast. Most of the approximately 243 PCFG whales are mixed in with the migrating herd at this time, along with an unknown number of WNP whales. Weller Decl. Odd-year hunts would occur July 1 through October 31, during the summer/fall feeding season, when WNP whales are not expected to be present in the hunt area, but PCFG whales are more abundant. Proposed Regulations § 216.112.

30. In their waiver request, the Tribe proposed hunting only in the coastal portion of the Tribe's U&A, and not in that portion of their U&A within the Strait of Juan de Fuca. This was proposed in part as a human safety measure, but also because during the migration season there is a higher proportion of PCFG whales in the Straight. 2015 DEIS App. 1. We adopted this proposal in our regulations and refer to the coastal portion of the Makah U&A where hunting would be allowed as the "hunt area."

31. Our proposed regulations would not allow hunting in the months of June or November. Although these months are considered part of the feeding season, when we do not expect WNP whales to occur within the ENP stock's range, we eliminated these months from the hunt seasons as an additional protection against the possibility of affecting early or late migrating WNP whales.

32. During even-year hunts, the regulations would allow a maximum of three strikes and three landings. Proposed Regulations § 216.113(a)(4)(iii), (v). The regulations would allow only one strike within a 24-hour period, to protect against striking multiple WNP whales that

could be traveling together. *Id.* If a whale were landed during an even-year hunt, the Tribe would not be permitted to hunt again until NMFS determined whether the landed whale was a WNP whale, using photo or genetic identification. Proposed Regulations § 216.115(a)(11). If NMFS determined that a WNP whale had been landed, no additional hunting would be allowed unless and until NMFS determined that additional measures were employed to ensure that no additional WNP gray whales would be struck for the duration of the waiver period. Proposed Regulations § 216.113(a)(4)(vii). Additional measures could include, for example, limiting hunting to the summer/fall feeding season, when WNP whales are not expected to occur within the hunt area.

33. During odd-year (summer/fall) hunts, the proposed regulations would allow a maximum of two strikes and one landed whale, leaving the possibility of a single strike, to reduce potential effects to PCFG whales. Proposed Regulations § 216.113(a)(4)(iii), (v). Our proposed regulations would impose a cumulative limit of 16 strikes of PCFG whales over the 10 years of the waiver period (average 1.6 strikes per year), of which no more than 8 strikes could be of PCFG females. Proposed Regulations § 216.113(a)(4)(iii). The strike limit on females is a precautionary measure based on evidence that PCFG whales may be recruited through maternally-directed site fidelity and that females constitute around 50 percent of the PCFG. Weller Decl. ¶¶ 18, 28.

34. Under our proposed regulations, we would use photo or genetic identification procedures to determine whether a struck whale was a PCFG or WNP whale, or could not be identified as either. For purposes of the PCFG strike limits, we would account for any unidentifiable whales using specified presumptions. Proposed Regulations § 216.114. The estimated proportion of male-female PCFG whales would be factored into the accounting if the

animal's sex were unknown. *Id.* To ensure that the photo-identification procedures can be effectively implemented, the regulations would require that, prior to issuing a hunt permit, NMFS determine that there are adequate photo-identification processes and catalogs available to allow for the identification of PCFG and WNP whales. Proposed Regulations § 216.113(a)(7)(iv). In order to guide the photo-identification elements of the proposed waiver and regulations, the NMFS WCR developed an internal guidance document titled *NMFS Protocol for Identifying Gray Whales Encountered in Makah Hunts* (Mar. 2019). NMFS Ex. 1-9 (NMFS 2019b). Also, we would develop a contractual mechanism or secure in-house expertise prior to issuing any hunt permits to ensure matches can be quickly made.

35. During even-year (winter/spring) hunts, any struck whale identified as a PCFG whale through photo or genetic identification procedures would be counted against the PCFG strike limit. Proposed Regulations § 216.114(b)(1). If the whale could not be identified, it would count against the PCFG limit in proportion to the best available estimate of PCFG presence within the hunt area during the month of the strike. *Id.* Currently, the best available estimate is that 28 percent of gray whales within the hunt area during even-year hunt seasons are PCFG whales. Weller Decl. ¶ 28.

36. During odd-year hunts, the regulations would count any struck whale as a PCFG whale, unless identified through photo or genetic identification procedures as a WNP whale. Proposed Regulations § 216.114(b)(2). This assumption is conservative, because the best available current estimate is that only 48 percent of gray whales present within the hunt area during this time would meet the definition of a PCFG whale (i.e., a whale seen in the PCFG seasonal range in more than one year). *See* Weller Decl. ¶ 28. We adopted this conservative approach to allow for the possibility that a struck whale not currently identified as a PCFG whale

could have been present within the PCFG range during the feeding period in the past but was not photographed, or would have recruited into the PCFG in the future.

37. As an additional protection for PCFG whales, the proposed regulations include "low-abundance triggers," which would halt hunting if the PCFG abundance estimate were to drop below 192 whales, or if the group's minimum abundance estimate were to drop below 171 whales. Proposed Regulations § 216.113(a)(4)(vi), (a)(7)(v); Moore Decl. ¶ 19. The purpose of the low abundance triggers is to ensure that, in the event PCFG abundance declines for whatever reason, the hunt would not exacerbate the decline. We selected 192/171 as the low-abundance triggers because they represent the lowest values estimated for the PCFG during the recent period of stability starting in 2002. *See* Weller Decl. ¶ 26, 55-56; Moore Decl. ¶ 21; NMFS Ex. 1-7, at 47 (NMFS 2019a). Including a minimum-abundance (Nmin) trigger provides a safeguard against incomplete or lagging abundance estimates. To ensure effective implementation of these limits, our scientists developed a model to provide up-to-date forecasts of PCFG abundance for an upcoming hunting season. Moore Decl. ¶ 20-25; *see* Proposed Rule Section III.B.

38. The Tribe's waiver request proposed managing hunt impacts to PCFG whales by limiting the number of PCFG strikes based on a PBR-like formula, and we considered this option in our DEIS and in our initial hunt proposal for MMC consultation. *See* 2015 DEIS App. 1, at 2-3; 2015 DEIS Section 2; NMFS Ex. 1-10 (Thom 2017a). Based on comments received on the DEIS and from the MMC and upon further consideration, we determined that the best available evidence supported use of the PCFG strike limits and low-abundance triggers instead of a PBR-based approach. *See* Proposed Rule Section III.B; NMFS Ex. 1-11, at 3-4 (MMC 2015).

39. Our decision to use strike limits and low abundance triggers to manage impacts to the PCFG instead of a PBR-based formula is explained in detail in our Proposed Rule, Section

III.B. To summarize: PBR employs a precautionary approach to account for the fact that we have relatively little population data for most marine mammal stocks, however, the PCFG is regularly monitored through photo-identification surveys, therefore we have reliable and up-to-date data on the group's abundance and population dynamics; the PCFG is not a "closed" population, meaning that the PBR formula may not represent actual population dynamics for the group; and, currently human caused mortality and serious injury of PCFG whales is accounted for only in U.S. waters, reducing the accuracy of management through PBR.

40. In developing our proposed regulations, we recognized that hunt activities that do not result in a strike could nevertheless cause sub-lethal effects that may constitute "take" under the MMPA. Our proposed regulations include limits on non-lethal encounters, specifically, unsuccessful strike attempts, training harpoon throws, and approaches, to limit impacts to gray whales in general and in particular to limit the extent to which WNP and PCFG whales could be encountered and possibly disturbed in the hunt area.

41. The regulations would limit unsuccessful strike attempts and training harpoon throws (combined) to 18 during even-year hunts and 12 during odd-year hunts. Proposed Regulations § 216.113(a)(4)(ii). As explained in the 2015 DEIS, these limits are based on prior Makah hunt experience demonstrating a 6:1 ratio of unsuccessful to successful strikes. 2015 DEIS at 4-15. Training harpoon throws would be allowed during any month of even-numbered years but only between July 1 and October 31 of odd-numbered years. Proposed Regulations § 216.113(a)(4)(ii). The limitation on training harpoon throws during odd-numbered years is to reduce the risk of exposing a WNP whale to such throws over the duration of the waiver period.

42. The regulations would limit approaches to 353 per year, inclusive of training approaches, with a sub-limit of 142 approaches of PCFG whales. Proposed Regulations

§ 216.113(a)(i). These values are also based on information gathered during previous Makah tribal hunts. Proposed Rule Section III(C)(3); 2015 DEIS at 4-15 to 4-16. Training approaches would be allowed at any time of year. Whether an approached whale were a PCFG whale would be accounted for in the same manner as strikes of PCFG whales. *See* Paragraphs 34-36 above.

43. The proposed regulations include measures to protect public safety and promote the efficiency and humaneness of a hunt, including provisions for hunt training, and requirements that all hunt participants be properly qualified. The regulations would require the Tribe to certify hunt participants as having qualifications commensurate with the duties and responsibilities associated with their role in any hunt. Proposed Regulations §§ 216.113(a)(7)(iii), 216.116(a)-(b). Also, prior to issuing a hunt permit, NMFS would be required to determine that the method of hunting authorized in the permit was "humane," as that term is defined in the MMPA. Proposed Regulations § 216.113(a)(7)(i); 16 U.S.C. § 1373; *see* 2015 DEIS at 4-75 to 4-79, 4-97 to 4-98 for a discussion of humane hunting considerations. Under the proposed regulations, after eight whales have been struck, NMFS would establish a team, including a veterinarian, marine mammal biologist, and tribal and NMFS hunt observers, to evaluate the effectiveness and humaneness of the hunt, allowing for adaptive management. Proposed Regulations § 216.117(b)(2).

44. In their waiver request, the Makah Tribe requested authorization to utilize gray whale products for ceremonial and subsistence purposes and for the making and sale of handicrafts. The proposed regulations would allow such use, with certain restrictions. The regulations would allow the Tribe to use, share, and barter edible products, both on and off their reservation, including sharing with non-tribal members within limits, but would not allow commercial sale of such products. Proposed Regulations § 216.113(a)(1). For non-edible

products, the regulations would allow tribal members to use, share, and barter such products with other member freely on their reservation. Off reservation, possession of non-edible products by non-members would be strictly limited. Only non-edible products that had been fashioned into handicrafts and marked and certificated by the Tribe could be possessed off-reservation by non-tribal members. Proposed Regulations § 216.113(a)(2). Marked and certificated handicrafts could be sold and transported within the United States. Proposed Regulations § 216.113(b)(2)(iii). The intention of our proposed regulations concerning whale products is to allow the Tribe wide use of such products while limiting commercial exchange to marked and certificated handicrafts.

45. The proposed regulations include detailed monitoring and reporting requirements to ensure compliance and improve hunt management over time. Proposed Regulations § 216.117. NMFS could observe any hunt upon request and take samples from and photographs of landed whales, and the Tribe would be required to assign tribal observers to record hunt activities. Proposed Regulations §§ 216.113(a)(5), (6)(vii), 216.117(a)(1), (4). The Tribe would be required to report any strikes and the associated circumstances, as well as all approaches, training harpoon throws, and unsuccessful strike attempts. Proposed Regulations § 216.117(a)(6). The NMFS WCR has prepared an internal guidance document, *NMFS Protocol for Monitoring Makah Gray Whale Hunts* (Dec. 2018), to guide the agency's oversight efforts. NMFS Ex. 1-12 (NMFS 2018). In addition to NMFS oversight, the proposed regulations require that the Tribe have in place a Tribal Ordinance governing hunting consistent with the applicable MMPA regulations prior to NMFS's issuance of a hunt permit.

COMPLIANCE WITH MMPA REQUIREMENTS – WAIVER

46. The MMPA sets forth the specific criteria that a decision to waive the take moratorium must meet. 16 U.S.C. § 1371(a)(3)(A). After carefully evaluating the proposed waiver against the statutory criteria, the NMFS WCR has determined that our proposal to waive the moratorium and authorize a tribal hunt for ENP gray whales meets the applicable criteria. Our findings that our proposed waiver meets the statutory criteria are described in detail in our Proposed Rule (see Section IV(A)) and are summarized below.

47. In issuing our proposed waiver, the NMFS WCR gave due regard to the distribution, abundance, breeding habits, and times and lines of migratory movements of the ENP gray whale stock. *See* NMFS Ex. 1-7, at 12-25 (NMFS 2019a); Weller Decl. ¶¶ 38-60.

48. The ENP gray whale stock's abundance, based on the best available evidence, is approximately 26,960 animals, and the stock currently is and has long been within its OSP levels. Weller Decl. ¶¶ 24-25; Moore Decl. ¶ 9. The proposed waiver and regulations would, at a maximum, reduce the ENP gray whale stock by 0.009 percent per year on average, or 0.09 percent over the 10-year waiver period. The number of removals that could occur under the proposed waiver is well below the PBR limit calculated for the stock. We conclude that this level of removals would not have a discernable effect on the ENP stock's abundance.

49. Also, based on long-standing practice, it is likely that the United States would transfer to the Russian Federation for use by Chukotkan hunters any portion of the available IWC catch limit for ENP gray whales that is not used by the Makah Tribe. Weller Decl. ¶ 43. In this case, the net effect to the ENP stock would be the same with or without our proposed waiver.

50. For the reasons explained in our Proposed Rule and in the Weller Declaration, we do not expect non-lethal hunt activities, including unsuccessful strike attempts, training harpoon

throws, and hunting and training approaches, to have lasting effects on the affected whales' health or behaviors. Proposed Rule Section IV(A)(3); Weller Decl. ¶¶ 44-52, 64-66. We therefore conclude that the proposed waiver will not have a meaningful effect on the ENP stock's distribution or migratory movements. This determination is reinforced by the fact that the ENP stock has demonstrated resiliency to decades of active hunting by Chukotkan natives and other human activities, growing from 12,771 animals in 1970 to approximately 27,000 animals in 2016. NMFS Ex. 1-7, at 15.

51. Also, we conclude that the PCFG strike limits combined with the PCFG low-abundance triggers and limits on unsuccessful strike attempts and PCFG approaches will ensure that the proposed waiver does not cause PCFG abundance to decline below recent stable levels, and therefore the proposed waiver will not affect the ENP stock's distribution within the PCFG range. Our scientists estimate that, assuming other parameters remain the same, PCFG abundance will increase over the waiver period with or without a tribal hunt. Moore Decl. ¶ 24. The proposed regulations provide protections (the low abundance triggers) in case PCFG abundance declines for any reason.

52. As explained in the Weller Declaration, we expect that hunting under the proposed waiver and ENP gray whale mating would overlap only during December-January, during the ENP stock's southbound migration. Weller Decl. ¶ 60. Gray whales are thought to mate repeatedly with more than one mate. NMFS Ex. 1-7, at 17 (NMFS 2019a). We expect that few, if any, hunt-related activities would occur in December or January due to inclement weather and unfavorable ocean conditions. 2015 DEIS at 3-354 to 3-357, 4-10. Adverse conditions combined with shorter periods of daylight would keep most hunts and training exercises close to shore and of short duration. Based on these considerations, we do not expect the proposed

waiver to adversely affect ENP gray whale breeding habits, due to the limited amount of spatial and temporal overlap between gray whale breeding and hunting, the limited level of hunting likely to occur during the breeding season, and the fact that any whales disturbed but not struck would likely have repeated opportunities to mate throughout the breeding season. Proposed Rule IV(A)(3); Weller Decl. ¶ 60.

53. The NMFS WCR carefully considered the effects of the proposed waiver on the role of the ENP gray whale stock in its ecosystem and on the health and stability of the marine ecosystem. *See* Proposed Rule, Section IV(A)(4)(a); Weller Decl. ¶¶ 67-73; NMFS Ex. 1-7, at 25-19 (NMFS 2019a). We took the precautionary approach of evaluating the impact of the proposed waiver on the smallest of the recognized ecosystems that the ENP stock inhabits, the northern California Current ecosystem, and also considered impacts on the environment of the northern Washington coast. We conclude that the very limited level of hunting that could occur under the waiver would have no discernable effect on the health or stability of the marine ecosystem or on the ENP stock's functioning within the marine ecosystem at any scale. *Id.*; NMFS Ex. 1-7 (NMFS 2019a).

54. For the reasons summarized in paragraph 48 above, the NMFS WCR concludes that the proposed waiver will not affect the status of the ENP gray whale stock relative to its OSP levels.

55. Based on the information summarized in paragraphs 46 and 54 and explained more fully in the evidence and testimony we have submitted in support of the proposed waiver, the NMFS WCR concludes that the proposed waiver is in accord with sound principles of resource protection and conservation as provided in the purposes and policies of the MMPA.

COMPLIANCE WITH MMPA REQUIREMENTS – REGULATIONS

56. If NMFS determines an MMPA waiver is appropriate, then NMFS must adopt regulations that the agency deems necessary and appropriate to ensure that the authorized taking will not disadvantage the stock and will be consistent with the MMPA's purposes and policies. 16 U.S.C. § 1371(a)(3)(A). NMFS has applied the "disadvantage" standard by considering effects to the stock's OSP level. *See, e.g.*, 45 Fed. Reg. 72,178, 72,185 (1980). The MMPA also sets forth a non-exclusive list of factors that NMFS must consider in prescribing regulations (16 U.S.C. § 1373(b)), which are explained more fully in our Proposed Rule. Our findings that our proposed regulations fulfill the statutory requirements are described in detail in our Proposed Rule and summarized below.

57. The NMFS WCR's determinations that the proposed regulations will not disadvantage the ENP stock and are otherwise consistent with the MMPA's purposes and policies are explained in paragraphs 47 through 55 above.

58. The NMFS WCR's conclusion that the proposed regulations will not discernably affect the existing or future levels of the ENP gray whale stock is explained in paragraph 48 above.

59. The MMPA requires that we consider any international treaty or agreement obligations of the United States in issuing regulations. 16 U.S.C. § 1373(b)(2). As explained in our Proposed Rule, the proposed regulations would not authorize gray whale harvest in excess of the catch limits available to the Tribe under the International Convention for the Regulation of Whaling and the bilateral agreement with the Russian Federation. Proposed Rule, Section IV(B)(4)(b); Proposed Regulations § 216.113(a)(4)(v). Also, the IWC Scientific Committee's Standing Workgroup on Aboriginal Subsistence Whaling Management Procedures evaluated our

hunt proposal and concluded it would meet IWC conservation objectives for ENP, WNP, and PCFG, whales. Proposed Rule, Section IV(B)(4)(b); Weller Decl. ¶ 42. The NMFS WCR concludes that our proposed regulations give full consideration to international treaty and agreement obligations of the United States.

60. The NMFS WCR determined that the proposed regulations would not affect the conservation, development, or utilization of fishery resources.

61. The NMFS WCR fully considered the effects of the proposed regulations on the marine ecosystem, as described in paragraph 53 above. We also fully considered the effects of the proposed regulations on related environmental considerations, including water quality, pelagic and benthic habitats, other species of fish and wildlife, and marine noise levels. 2015 DEIS Sections 2, 4.3, 4.5, 4.11.

62. We also fully considered the economic and technological feasibility of the proposed regulations as explained in our Proposed Rule and summarized below. *See* 16 U.S.C. § 1373(b)(5); Proposed Rule, Section IV(B)(4)(e). We conclude that agency costs associated with gray whale surveys and photo-identification work, as well as funding for hunt monitoring and enforcement personnel, are feasible. Previous whale hunts by the Makah Tribe and other aboriginal groups have demonstrated the technological and economic feasibility to the Tribe of carrying out a hunt such as would be allowed under the proposed regulations. The procedures for genetic and photographic matching to identify PCFG and WNP whales have long been in use and are feasible. Also, the proposed measures for managing the sale of handicrafts through marking and certification techniques are feasible. Based on this information and the NMFS WCR internal guidance documents referenced above, which outline feasible, effective procedures to guide the agency's implementation of the whale-identification process and

oversight of a hunt, the NMFS WCR concludes that the proposed regulations give full consideration to economic and technological feasibility.

63. As explained in our Proposed Rule (Section IV(C)) and in paragraph 26 above, we determined that the potential risks to WNP gray whales from implementation of the proposed regulations is an additional relevant factor in developing the proposed regulations and fully considered such risks. The proposed regulations contain a number of restrictions to limit the risk of death, injury, or other harm to WNP gray whales, and NMFS scientists undertook a risk analysis to quantify risks to WNP whales using the best scientific evidence available and conservative assumptions

64. Assuming that a tribal hunt were carried out to the full extent allowed under the proposed regulations, our scientists calculate that the probability of hunters striking a WNP gray whale over the 10 years of the regulations is about six percent, which equates to striking one WNP whale over the course of 17 consecutive 10-year hunt periods. Proposed Rule, Section IV(C); Moore Decl. ¶ 17. Put another way, the probability is that one WNP whale would be struck every 170 years, assuming 17 consecutive 10-year hunt periods. *Id.* We consider this risk to be remote. In comparison, the current WNP gray whale SAR estimates a PBR for U.S. waters of 0.06/year, which is the equivalent of 1 whale every 17 years. Bettridge Decl. ¶ 22. The proposed regulations include protections to eliminate the risk of striking multiple WNP whales and to stop the hunt if a WNP whale is inadvertently struck. Proposed Regulations § 216.113(a)(4)(iii), (vii).

65. Our scientists calculated the probability of a WNP whale being subjected to either an unsuccessful strike attempt or training harpoon throw over the 10-year waiver period as 30 percent, or one such encounter every 33 years. Proposed Rule, Section IV(C); Moore Decl. ¶

17. While unsuccessful strike attempts and training harpoon throws may result in temporary disturbance, we do not expect them to have a lasting effect on the targeted animal's health or behaviors. We therefore consider the risks of unsuccessful strike attempts and training harpoon throws to be slight, because there is no mortality associated with this type of encounter, and we expect that impacts would be temporary.

66. With respect to hunting and training approaches, the NMFS risk analysis concludes that 14 WNP whales would be approached over the 10-year waiver period, or an average of 1.4 WNP whales per year. Proposed Rule, Section IV(C); Moore Decl. ¶ 17. However, for purposes of this analysis, our scientists assumed that all approaches allowed under the proposed regulations would be made each year, and all of them, including training approaches, would be made between December 1 and May 31, when WNP gray whales could be present in the hunt area. Moore Decl. ¶ 15. We do not expect that the full number of approaches allowed (353/year, 3530 over 10 years) would be made during these months. Based on weather conditions and whale availability, we estimate that there are nearly twice as many suitable days for hunting and training during the months of odd-year hunt seasons than during the months of even-year hunt seasons. 2015 DEIS at 4-10. For example, if the Tribe were to make 3530 total approaches over 10 years, and the approaches were split evenly between even-year and odd-year hunt seasons, we would expect 0.7 WNP whales to be approached annually, on average. We do not expect approaches to have a lasting effect on the subject whale's health or behaviors and therefore consider any risk posed by approaches to be slight. Proposed Rule, Section IV(C); Weller Decl. ¶ 64.

67. Because the WNP gray whale stock is listed as "endangered" under the ESA, NMFS would carry out consultation under section 7 of the ESA (16 U.S.C. § 1536(a)) prior to

any final decision to issue a waiver and regulations authorizing a tribal hunt. Under ESA section 7, NMFS would not issue a waiver and regulations unless NMFS could ensure that the hunting would not be likely to jeopardize the WNP stock.

68. Based on the information summarized in paragraphs 63-66 above, the NMFS WCR concludes that the proposed regulations are necessary and appropriate to limit the likelihood that tribal hunters would strike or otherwise harm a WNP whale.

69. As a further means of assuring consistency with the MMPA's purposes and policies, our proposed regulations provide that, prior to NMFS's issuance of a hunt permit, NMFS must determine that the Tribe has obtained any necessary incidental take authorization for other marine mammals. Proposed Regulations § 216.113(a)(7)(vii).

70. Based on the information summarized in paragraphs 56 and 63 and as explained more fully in the evidence and testimony we have submitted in support of the proposed regulations, the NMFS WCR concludes that the proposed regulations are necessary and appropriate to ensure that the hunt would not disadvantage the ENP stock and are consistent with the MMPA's purposes and policies, and that we have given full consideration to all relevant factors affecting the extent to which the ENP stock may be taken.

CONSULTATION WITH THE MARINE MAMMAL COMMISSION

71. The MMPA requires that NMFS consult with the MMC in issuing a waiver and regulations. 16 U.S.C. § 1371(a)(3)(A), 1373. The MMC is composed of experts in marine ecology and resource management and, among other duties, provides recommendations to federal officials for the protection and conservation of marine mammals. 16 U.S.C. §§ 1401-02. The NMFS WCR consulted informally with the MMC staff throughout development of the proposed waiver and regulations and twice formally requested consultation with the MMC. The

MMC also provided written comments on our DEIS, which we considered in preparing the proposed waiver and regulations. NMFS Ex. 1-11 (MMC 2015); *see* NMFS Ex. 1-8, at 1 (MMC 2017) ("The Commission also notes that the regulations, to a large extent, address the comments raised in our 31 July 2015 letter to NMFS comment on the revised [DEIS] . . . ."). Our responses to the MMC's recommendations are provided in detail in the attached memorandum (NMFS Ex. 1-13 (Yates 2019)) and are summarized below.

72. We first formally requested MMC consultation by letter dated May 12, 2017, enclosing a preliminary draft of our proposed waiver and regulations. NMFS Ex. 1-10 (Thom 2017a). The MMC replied by letter dated July 11, 2017, generally supporting our proposals and recommending several issues for further consideration. NMFS Ex. 1-8 (MMC 2017). The MMC stated: "The Commission believes that the draft documents lay out a *prima facie* case that the requirements for granting a waiver under the MMPA have been met and recommends that NMFS proceed with issuing a proposed rule and scheduling an administrative hearing . . . ." *Id.* at 1.

73. In its 2017 letter, the MMC noted that its primary concern was the need to avoid, to the maximum extent practicable, the accidental taking of WNP gray whales and, secondarily, to avoid taking that could disadvantage the PCFG regardless of whether it is considered a stock. The MMC approved NMFS's proposal for alternating hunt seasons, stating: "The Commission believes that the proposed rule strikes an appropriate balance between the goals of protecting WNP and PCFG whales." NMFS Ex. 1-8, at 2 (MMC 2017).

74. As explained in paragraph 38 above, subsequent to our May 2017 consultation with the MMC we modified our proposed regulations to incorporate the PCFG strike-limit/low-abundance triggers management framework in place of the PBR approach. We requested MMC

consultation on our revised approach and other updates by letter dated December 19, 2017. NMFS Ex. 1-14 (Thom 2017e). The MMC replied by letter dated March 13, 2018, expressing support for our modified proposal. NMFS Ex. 1-15 (MMC 2018).

75. In its 2018 letter, the MMC stated that our proposed revisions were not expected to have any negative effect on the possibility that WNP gray whales will be taken and that "the Commission stands by its earlier comment that the risk of killing or seriously injuring a WNP gray whale appears to be sufficiently low that it should not present an insurmountable obstacle to NMFS moving forward with a proposed rule to authorize the Makah Tribe to take whales from the [ENP] stock." NMFS Ex. 1-15, at 1 (MMC 2018).

76. Regarding our proposal to manage impacts to the PCFG through the strike limits and low abundance triggers instead of a PBR-like approach, the MMC agreed with our revised approach, stating: "For PCFG whales, NMFS has over 20 years of data from annual surveys, which yield relatively precise abundance estimates and enable the agency to use a population forecast model for regulating the taking of PCFG whales. NMFS contends that this approach is more appropriate than a PBR approach for managing the taking of PCFG whales, because population information is readily available. Also, NMFS states that, because it is proposing to issue regulations for a ten-year period, this shorter-term management approach is appropriate. . . . The Commission agrees that, given the availability of reliable information on the abundance and trends of PCFG whales and rates of recruitment of whales to this putative stock, there is no reason to manage removals under a PBR framework. Further, the Commission believes that setting the allowable strike limit at 16 PCFG whales over a 10-year period should provide reasonable certainty that the proposed level of hunting PCFG whales will not have adverse impacts on this 'stock.'" NMFS Ex. 1-15, at 2.

CONCLUSION

77. Based upon the information summarized above and the evidence and testimony submitted by NMFS in support of the proposed waiver and regulations, the NMFS WCR concludes that the proposed waiver and regulations meet all applicable requirements of the MMPA, will achieve the agency's management goals for a Makah tribal hunt, and will provide a durable framework and a precautionary approach for governing a tribal hunt by providing for responsible oversight and opportunities for timely correction and continued acquisition of science and data to inform and better implement this proposed authorization and any future authorizations.

I declare, under penalty of perjury under the laws of the United States, that the foregoing is true and correct to the best of my knowledge, information, and belief.

Chris Yates

Dated: April 2, 2019

DECLARATION OF CHRIS YATES
EXHIBIT LIST

1-1	CV-C. Yates	Curriculum vitae for Chris Yates, NMFS
1-2	Makah Tribe 2006	Makah Tribe 2006a. Makah Tribe's clarification of MMPA waiver request application. Letter from Makah Tribal Council to William T. Hogarth, Ph.D. dated January 24, 2006.
1-3	NMFS 2005	NMFS 2005. NMFS Memorandum from William T. Hogarth to D. Robert Lohn re: Delegation of Authority for NEPA Compliance and Federal Register Signature Authority Regarding the Makah Indian Tribe's Request for a Waiver of the Marine Mammal Protection Act Moratorium. Dated April 22, 2005.
1-4	NOAA 2019	Ex Parte Memo signed 3-14-19
1-5	NMFS 2008	NMFS 2008. Draft Environmental Impact Statement for Proposed Authorization of the Makah Whale Hunt. United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service. May 2008
1-6	NMFS 2015b	NMFS 2015b. Memorandum from S. Stone (NMFS) to the file re: staff responses to comments on the 2008 draft environmental impact statement on the Makah Tribe's request to hunt gray whales. February 19, 2015.
1-7	NMFS 2019a	NMFS 2019a. Biological Report on the Eastern North Pacific (ENP) Stock of Gray Whales. Prepared by the West Coast Region of the National Marine Fisheries Service in support of the proposed waiver and regulations authorizing a limited hunt of ENP gray whales by the Makah Indian Tribe. March 2019.
1-8	MMC 2017	First response letter (7-11-17) from R. Lent (MMC) to B. Thom (NMFS) re: consultation on proposed waiver and regulations.
1-9	NMFS 2019b	NMFS 2019b. NMFS Protocol for Identifying Gray Whales Encountered in Makah Hunts. NMFS WCR Protected Resources Division Report. March 2019.
1-10	Thom 2017a	First letter (5-12-17) from B. Thom (NMFS) to R. Lent (MMC) re: consultation on proposed waiver and regulations.
1-11	MMC 2015	MMC comments (7-31-15) from R. Lent (MMC) to W. Stelle (NMFS) re: 2015 DEIS
1-12	NMFS 2018	NMFS 2018. NMFS Protocol for Monitoring Makah Gray Whale Hunts. NMFS WCR Protected Resources Division Report. December 2018.
1-13	NMFS 2019c	NMFS 2019c. Memorandum from C. Yates (NMFS) to the record re: responses to comments from the U.S. Marine Mammal Commission on a proposed waiver and regulations related to the Makah Indian Tribe's request for a waiver of the Marine Mammal Protection Act moratoprium on take of eastern North Pacific gray whales. March 26, 2019.
1-14	Thom 2017b	Second letter (12-19-17) from B. Thom (NMFS) to R. Lent (MMC) re: consultation on proposed waiver and regulations.
1-15	MMC 2018	Second response letter (3-13-18) from P. Thomas (MMC) to B. Thom (NMFS) re: consultation on proposed waiver and regulations.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

Chris Yates

Chris Yates is the Assistant Regional Administrator for Protected Resources in the West Coast Region of NOAA Fisheries. In this role he is responsible for the implementation of the Endangered Species Act and Marine Mammal Protection Act along the West Coast of the United States protecting and conserving populations of species such as marine mammals, abalone, green sturgeon, salmon, eulachon, and sea turtles.

Chris has been with NOAA since 2001, and assumed this role in October 2013. Prior to this assignment, Chris served as the Assistant Regional Administrator of the Southwest Region. Previous assignments include serving as the International Whaling Commission Coordinator in Washington DC developing U.S. policy on international whaling, and leading the Protected Resources Division in the Pacific Islands Regional Office in Hawaii.

Chris grew up on a farm in Southern Wisconsin, received a Bachelor of Science from the United States Air Force Academy, and a Masters of Science from the University of Florida. Chris, his wife Lindsay, and their daughter Julia reside in Long Beach, California.

MAKAH TRIBE

P.O. BOX 115 • NEAH BAY, WA 98357 • 360-645-2201

January 24, 2006

William T. Hogarth, Ph.D.
Assistant Administrator
National Oceanic and
Atmospheric Administration
Room 14636
1315 East-West Hwy
Silver Spring, MD 20910

Re: Makah Tribe's clarification of MMPA waiver request application

Dear Dr. Hogarth,

On February 11, 2005, the Makah Tribal Council (Tribe) submitted a request to the National Marine Fisheries Service (NMFS) for a waiver of the Marine Mammal Protection Act (MMPA) take moratorium that would allow a limited harvest from the Eastern North Pacific stock of gray whales as secured in the 1855 Treaty of Neah Bay. We specified in the 2005 request that the total take of gray whales for which the Tribe seeks a waiver is up to 20 gray whales in any five-year period, subject to a maximum of five gray whales in any calendar year.

While our prior request focused on the MMPA waiver and also sought a simultaneous review under the National Environmental Policy Act (NEPA), we recognize that NMFS must analyze the proposed hunting activities in the context of additional laws and regulations. This letter clarifies that the Tribe is asking NMFS to analyze the 2005 request to conduct Treaty ceremonial and subsistence hunting of gray whales under whatever authorities it may deem applicable. In making this request, the Tribe reserves its right to contest a future determination by the United States government that a particular law or regulation may be applied to restrict the Tribe's ability to exercise its whaling rights under the Treaty of Neah Bay.

Sincerely,

MAKAH TRIBAL COUNCIL

Ben Johnson Jr

Ben Johnson, Jr.
Chairman

CC: Robert Lohn, NMFS Northwest Regional Administrator
Stanley Speaks, BIA Northwest Regional Director

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of the General Counsel for Fisheries
1315 East-West Highway, Room 15132
Silver Spring, MD 20910

FAX TRANSMISSION SHEET

DATE: 4/25/05

TO: Bob Lohn, Donna Darm, Kirsten Erickson

ORGANIZATION:

TELEPHONE:

FAX NUMBER: 206-526-6426, 206-526-6642

NUMBER OF PAGES: 2 (Including cover sheet)

ORIGINATOR: Roger Eckert

TELEPHONE: (301) 713-2231

FAX: (301) 713-0658

RE: Delegation of authority re Makah waiver application.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
1315 East-West Highway
Silver Spring, Maryland 20910
THE DIRECTOR

→ 12

April 22, 2005

MEMORANDUM FOR: D. Robert Lohn
Regional Administrator, NWR

FROM: William T. Hogarth
Assistant Administrator, NMFS

SUBJECT: Delegation of Authority for NEPA Compliance and *Federal Register* Signature Authority Regarding the Makah Indian Tribe's Request for a Waiver of the Marine Mammal Protection Act Moratorium

I am hereby delegating authority to you to sign appropriate documentation prepared under the National Environmental Policy Act (NEPA) regarding the Makah Indian Tribe's request for a waiver of the Marine Mammal Protection Act's (MMPA) moratorium on the taking of marine mammals. In addition, I am delegating authority to you to sign *Federal Register* notices pertaining to such documentation as well as notices pertaining to the MMPA waiver process.

Concurrence: _____
Samuel Rauch, Assistant General Counsel for Fisheries

cc: Donna Darm
Laurie Allen

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Washington, D.C. 20230

OFFICE OF THE GENERAL COUNSEL

MAR 14 2019

MEMORANDUM

TO: Distribution

FROM: John Luce, NOAA General Counsel

SUBJECT: Restrictions on Communications Pertaining to Makah Indian Tribe's Request for Waiver of Moratorium on Take of Eastern North Pacific Gray Whales

This memorandum supersedes the March 3, 2015 memorandum from the NOAA General Counsel on this subject. Like the previous memorandum, this memorandum institutes restrictions on communications pertaining to NOAA Fisheries' consideration of the Makah Indian Tribe's (Tribe's) request to waive the Marine Mammal Protection Act's (MMPA's) take moratorium and issue regulations allowing for a tribal hunt of eastern North Pacific (ENP) gray whales. The restrictions apply both to communications with persons outside of NOAA and to communications between certain NOAA employees.

Subsequent to issuance of the 2015 memorandum, the NOAA Fisheries West Coast Region (WCR), which was delegated initial decision-making authority for this matter, developed a proposed waiver determination for ENP gray whales along with regulations to allow for a tribal hunt. Due to the anticipated commencement of a hearing on the WCR's proposed decisions in the near future, and in response to questions that have arisen regarding the scope of the restrictions, I am reissuing this memorandum to update and clarify the communication restrictions now applicable to this proceeding.

Because decision-making under the MMPA has been delegated to NOAA Fisheries, this memorandum is directed to those NOAA employees that have been participating or are expected to participate in the decision-making process for this matter. However, to the extent persons from other offices within NOAA become involved in this decision-making process, they may be subject to the restrictions set forth herein. Please refer any questions about the applicability of these requirements to the points of contact identified below.

The restrictions on communications fall into three categories, which are explained below, followed by background information regarding the development and implementation of these measures.

Restrictions on Communications

1. External Communications by or to NOAA Employees

Applies to: Any NOAA employee who is or may reasonably be expected to be involved in the decision-making process (see attached non-exclusive list of covered employees).

Restrictions: *Ex parte* communications between covered employees and any interested person outside of the agency regarding the merits of the proceeding are prohibited.

Effective Date: Immediately.

Explanation: The APA imposes these restrictions beginning when the agency publishes the notice of hearing or has knowledge that it will be published. The purpose of these restrictions is to provide for transparent decision-making and ensure that all interested persons have access to the same information concerning the merits of the proceeding. Knowing violation of these restrictions by a party to the proceedings may adversely affect the party's claims or interests.[1]

- An *ex parte* communication means an oral or written communication that is not on the public record and for which notice to all parties to the proceeding has not been given.
- For this memorandum, the "proceeding" includes any agency activities related to preparation for and conduct of the agency hearing on the WCR's proposed waiver and regulations and to subsequent final review and decision-making by NOAA Fisheries.
- An "interested person" includes any individual or entity, public or private, with an interest in the proceeding that is greater than the general interest of the public as a whole.
    - The term "interested person" is construed broadly and includes nonprofit or public interest organizations with a special interest in the subject matter of the proceeding.
    - Members of the public at large who make casual or general expressions of opinion about the proceeding are not considered "interested persons."
    - When in doubt, treat the communication as one with an interested person.
- Restrictions apply only to communications regarding the merits of the proceeding, that is, whether or not, in whole or in part, or in what form, the proposed waiver should be granted and the proposed regulations promulgated. This includes issues related to the sufficiency or reliability of evidence pertaining to the proceeding.

[1] *See* 5 U.S.C. § 557(d)(1).

- Communications unrelated to the merits of the proceeding are not restricted. Such communications may include, but are not limited to:
    - status reports;
    - procedural matters to ensure that the proceeding is carried out expeditiously;
    - public outreach, including communications with the public and media regarding the nature and status of the proceeding.
- Note that employees with the NOAA Office of Communications and the NOAA Office of Legislative and Intergovernmental Affairs are not expected to be involved in decision-making and are not subject to *ex parte* restrictions. Nevertheless, such employees should avoid communications that may be related to the merits of the proceeding.

Note*: Any covered employee who makes or receives a communication that deviates from the above requirements must immediately document the communication and contact the NOAA Office of General Counsel (see list of contacts below).*

2. Internal Communications between NOAA employees

Applies to: Any NOAA employee who is or may reasonably be expected to be involved in the decision-making process (see attached non-exclusive list of covered employees).

Restrictions: (1) Communications regarding the merits of the proceeding between those agency individuals and offices serving as "advocates" and those serving as "decision-makers" are prohibited. (2) If any agency individual involved as a "decision-maker" withdraws from participation, that individual must thereafter recuse himself or herself from involvement as an "advocate," and vice versa.

Effective Date: Ongoing.

Explanation: The NOAA General Counsel implemented these restrictions after receipt of the Tribe's waiver request to ensure organized and impartial decision-making. See the Background discussion below for additional information.

- "Advocates" are those WCR personnel and others involved in initial review of the Tribe's request, development of the proposed waiver decision and regulations, and conduct of the agency hearing. "Decision-makers" are the NOAA Assistant Administrator for Fisheries and others involved in making a final waiver decision after the hearing has been completed. A list identifying those individuals and offices participating in this proceeding as "advocates" and as "decision-makers" is attached.
- See Category 1 above for an explanation of what constitutes a communication "regarding the merits" of the "proceeding."
- In addition, the following types of communications are not considered related to the merits of the proceeding for purposes of this memorandum:

- budget requests or approvals involving agency funding;
- technical assistance, written or oral, to identify, explain, analyze, or summarize information contained in the hearing record, provided such assistance does not include personal opinion, recommendations, or advice;
- communications related to peripheral agency processes necessary to support a final decision on the proposed waiver and regulations, for example, evaluation under the Endangered Species Act or National Environmental Policy Act.

3. External Communications to Certain NOAA Officials

Applies to: Chris Oliver, Assistant Administrator for Fisheries
Samuel D. Rauch, III, Deputy Assistant Administrator for Regulatory Programs
Donna Wieting, Director, Office of Protected Resources.[2]

Restrictions: All communications directed to the subject officials from persons outside the agency, whether oral or written, involving any procedural or substantive issue related to the proceeding are deemed *ex parte* communications. Such communications must be documented, be made available to the public, and be excluded from the record for decision.

Effective Date: Date of publication of the *Federal Register* notice announcing the hearing for the proceeding.

Explanation: NOAA Fisheries' regulations that govern the hearing impose this requirement,[3] which goes beyond the restrictions required by the APA. This provision must be read in concert with the restrictions described in Category 1 above and with other applicable laws and regulations. See the clarifications below.

- The above-named officials must document any communications they receive from persons outside of the agency regarding procedural or substantive issues. Please promptly provide any such documentation to the NOAA Office of General Counsel attorneys identified below, preferably within 24 hours of the communication.
- Communications regarding "substantive issues" are the same as communications "regarding the merits" discussed under Category 1 above – that is, any communication pertaining to whether or not, in whole or in part, or in what form, the proposed waiver should be granted and the proposed regulations promulgated, including issues related to the sufficiency or reliability of evidence.
- Except as noted below, the restrictions in Category 1 above apply to communications regarding substantive issues to the above-named officials, *i.e.*, substantive

[2] NOAA Fisheries' regulations (50 C.F.R. § 228.10) identify the "Chief of the Marine Mammal Division," as one of the positions subject to the Category 3 restrictions. This position no longer exists within NOAA Fisheries, and the associated responsibilities are now assigned to the Office of Protected Resources.

[3] 50 C.F.R. § 228.10.

communications are prohibited. Any communication inadvertently received regarding substantive issues must be documented and made available to the public.

- Communications regarding procedural issues are not prohibited but must be documented and made available to the public.
- Except as noted below, communications in this category must be excluded from the record for decision, meaning they may not be relied on or considered in the decision-making process.
- Exception: After the conclusion of the hearing, the following categories of communications are permissible and will be included in the record for decision:
    - communications submitted in response to opportunities for public comment, for example, pursuant to 50 C.F.R. § 228.20(d) (allowing for public comment on the hearing officer's recommended decision) or the National Environmental Policy Act;
    - communications submitted by the parties to the proceeding pursuant to 50 C.F.R. § 228.20(c) (allowing all parties opportunity to comment on the recommended decision).

Points of Contact: Any communication that may be subject to the above restrictions from persons outside of the agency should be directed to:

For the West Coast Region and Alaska and Southwest Fisheries Science Centers
Michael Milstein, 503-231-6268 / *michael.milstein@noaa.gov*
Public Affairs Officer, NOAA Fisheries West Coast Region

For all other NOAA offices and Headquarters
Laurel Bryant, 301-427-8032 / *laurel.bryant@noaa.gov*
External Affairs Director, NOAA Fisheries

Questions regarding the applicability of the restrictions should be directed to:

For "advocates"
Laurie Beale, Attorney-Advisor, 206-526-6327 / *laurie.beale@noaa.gov*, or
Caitlin Imaki, Attorney-Advisor, 206-526-6159 / *caitlin.imaki@noaa.gov*
NOAA Office of General Counsel, Northwest Section

For "decision-makers"
Rod Vieira, Deputy Section Chief, 301-628-1605 / *rod.vieira@noaa.gov*
NOAA Office of General Counsel, Fisheries and Protected Resources Section

Background

The MMPA prohibits any "take"[4] of marine mammals with certain exemptions and exceptions. One exception allows the Secretary of Commerce, who has delegated authority to NOAA Fisheries, to waive the take moratorium and issue regulations allowing for take of marine mammals, if certain requirements are met.[5] An agency decision to waive the take moratorium and issue regulations must be made "on the record after opportunity for an agency hearing."[6] Hearings under this provision are subject to requirements of the Administrative Procedure Act (APA) and to regulations promulgated by NOAA Fisheries.[7]

The APA and NOAA Fisheries' regulations applicable to an MMPA waiver set forth a two-step decision-making process. First, the agency must provide public notice of the proceeding and hold an agency hearing in which interested persons may participate. At the hearing, the parties may present and cross-examine witnesses, submit evidence, file legal briefs, and propose findings of facts and conclusions of law. After the hearing, the presiding officer issues a recommended decision, findings, and conclusions, based on the hearing record. The record is then transmitted to the Assistant Administrator for Fisheries to make a final decision. The Assistant Administrator may affirm, modify, or set aside, in whole or in part, the presiding officers' recommendation, findings, and conclusions.

In February 2005, the Tribe, whose reservation is located in Washington State, submitted a request to NOAA Fisheries seeking an MMPA waiver to allow for a tribal hunt of ENP gray whales.[8] NOAA Fisheries treated the request as a petition for rulemaking and subsequently delegated authority to the WCR (formerly the Northwest Region) to carry out initial evaluation and NEPA review of the Tribe's request.[9]

Given the bifurcated nature of the required process and to ensure an organized framework for agency decision-making, NOAA designated certain offices and positions to serve as "advocates" and other offices and positions to serve as "decision-makers" for this matter. The advocates are responsible for making a preliminary decision whether to waive the take moratorium for ENP gray whales and, if the decision is positive, drafting proposed regulations and carrying out an agency hearing. The decision-makers are to provide support to the Assistant Administrator in making a final decision based on the presiding officer's

[4] "Take" means to harass, hunt, capture, or kill or to attempt any such conduct. 16 U.S.C. § 1362(13).

[5] 16 U.S.C. § 1371(a)(3)(A).

[6] 16 U.S.C. § 1373(d).

[7] 5 U.S.C. §§ 553, 555–557; 50 C.F.R. §§ 228.1 *et seq.*

[8] A 2004 ruling by the Ninth Circuit Court of Appeals held that the Tribe must obtain authorization under the MMPA in order to exercise its treaty right to hunt whales. *Anderson v. Evans*, 371 F.3d 475 (9th Cir. 2004).

[9] Memorandum from William T. Hogarth, Assistant Administrator, NMFS, to D. Robert Lohn, Regional Administrator, NWR, April 22, 2005.

recommendations and the hearing record. To ensure fair and impartial decision-making, the NOAA General Counsel implemented certain restrictions on communications between the advocates and the decision-makers and with persons outside the agency

The NOAA General Counsel's memorandum implementing restrictions on communications was first issued in 2005 and was updated in 2008, 2010, and 2015 with essentially the same requirements.[10] Since that time, the advocates have completed an evaluation of the Tribe's request, and they are now preparing *Federal Register* notices that will announce a proposed waiver decision and regulations and a hearing before an administrative law judge. At this stage, additional restrictions on communications will apply. These are described under Categories 1 and 3 above. The restrictions in Category 1 are required by the APA[11] and update previous restrictions implemented per agency guidelines and best practices. The restrictions in Category 2 were implemented through the 2005 memorandum and are ongoing. Although not legally mandated for this formal rulemaking process, these measures are intended to ensure impartial decision-making. The restrictions in Category 3 must be implemented when the Notice of Hearing is published, per NOAA's regulations that govern formal rulemakings under the MMPA.[12]

The restrictions described above are required to ensure the fairness and impartiality of the decision-making process and to ensure completeness of the administrative record. Please direct any questions to the points of contact identified above.

Distribution

Distribution to all individuals listed in the table below.

[10] Memorandum from James R. Walpole, General Counsel, to Distribution, Aug. 26, 2005; Memorandum from Jane C. Luxton, General Counsel, to Distribution, Jan. 9, 2008; Memorandum from Lois J. Schiffer, General Counsel, to Distribution, June 29, 2010; Memorandum from Lois J. Schiffer, General Counsel, to Distribution, Mar. 3, 2015.

[11] 5 U.S.C. § 557(d).

[12] 50 C.F.R. § 228.10 (governing *ex parte* communications with designated agency officials).

NOAA Employees Subject to Restrictions on Communications

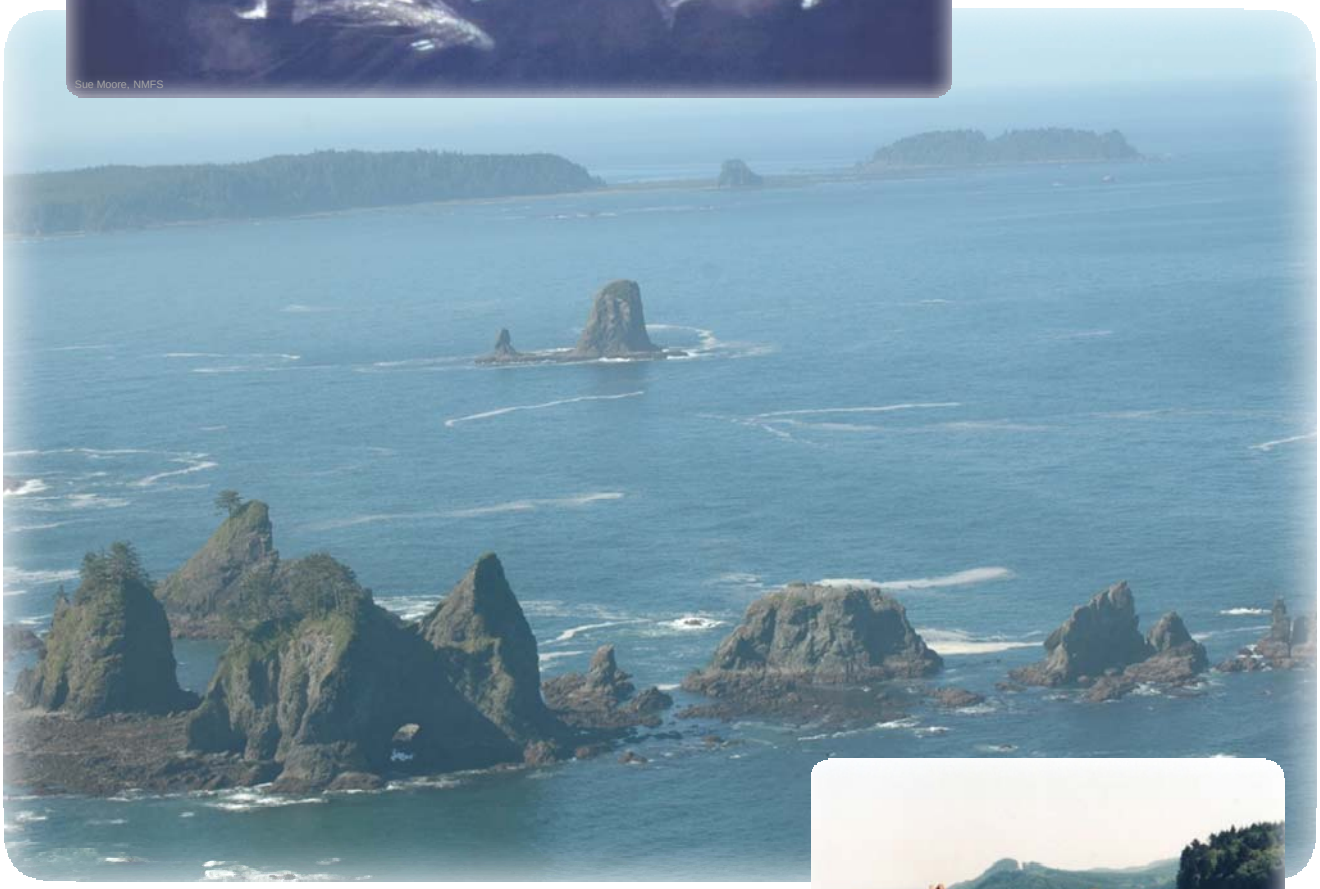
The following NOAA individuals and offices are expected to be involved in the decision-making process regarding this matter and are subject to the restrictions on communications discussed above. If any NOAA or Department of Commerce individual or office not on this list becomes involved in the decision-making process, such persons may be subject to the restrictions set forth herein. Direct any questions to the points of contact identified above.

Advocates	Decision-Makers
NOAA	
	Dr. Neil Jacobs, Assistant Secretary of Commerce for Environmental Observation and Prediction, performing the duties of Under Secretary of Commerce for Oceans and Atmosphere Timothy Gallaudet, Ph.D., Rear Admiral, U.S. Navy (Ret.), Assistant Secretary of Commerce for Oceans and Atmosphere Stuart Levenbach, Chief of Staff Kevin Wheeler, Deputy Chief of Staff for Policy Brandon Elsner, Senior Policy Advisor, NOAA
NOAA Fisheries	
Barry Thom, Regional Administrator Scott Rumsey, Deputy Regional Administrator West Coast Region	Chris Oliver, Assistant Administrator for Fisheries
Chris Yates, Assistant Regional Administrator, Steve Stone, Fishery Biologist Nancy Young, Fishery Biologist Protected Resources Division, West Coast Region	Samuel Rauch III, Deputy Assistant Administrator for Regulatory Programs
Shannon Bettridge, Chief, Marine Mammal and Sea Turtle Conservation Division, Office of Protected Resources	Ned Cyr, Director, Office of Science and Technology
Amy Sloan, Deputy Chief, Permits and Conservation Division, Office of Protected Resources	Donna Wieting, Director Catherine Marzin, Deputy Director Office of Protected Resources

Greg Busch, Assistant Director Michael Killary, Deputy Special Agent in Charge West Coast Enforcement Division Office of Law Enforcement	
Bob Delong, Supervisory Research Wildlife Biologist Pat Gearin, Research Wildlife Biologist, Marine Mammal Laboratory, Alaska Fisheries Science Center	
Cisco Werner, Chief Science Advisor for NOAA Fisheries	
Kristen Koch, Science and Research Director Newell (Toby) Garfield, Acting Deputy Science and Research Director, Southwest Fisheries Science Center	
Lisa Ballance, Division Director John Durban, Marine Population Ecologist Aimée Lang, NRC Postdoctoral Research Associate Jeffrey Moore, Research Wildlife Biologist Dave Weller, Research Wildlife Biologist, Marine Mammal and Turtle Division, Southwest Fisheries Science Center	
NOAA Office of General Counsel	
Kristen Gustafson, Deputy General Counsel (Fisheries and Protected Resources)	John Luce, General Counsel
Caroline Park, Deputy Section Chief, Fisheries and Protected Resources Section	Jeff Dillen, Deputy General Counsel (Enforcement and International)
Chris McNulty, Section Chief Sheila Lynch, Deputy Section Chief Laurie Beale, Attorney-Advisor Caitlin Imaki, Attorney-Advisor Brittany Pugh, Paralegal Specialist Northwest Section	Adam Issenberg, Section Chief Rod Vieira, Deputy Section Chief Fisheries and Protected Resources Section
Paul Ortiz, Attorney-Advisor Enforcement Section	

Draft Environmental Impact Statement

for Proposed Authorization of the Makah Whale Hunt



United States Department of Commerce
National Oceanic and Atmospheric Administration

National Marine Fisheries Service, Northwest Region

May 2008

Executive Summary

EXECUTIVE SUMMARY

The action considered in this draft environmental impact statement (DEIS) concerns the Makah Indian Tribe's February 2005 request to resume limited hunting of eastern North Pacific (ENP) gray whales (*Eschrichtius robustus*) in the coastal portion of the Tribe's usual and accustomed fishing grounds (U&A), off the coast of Washington State, for ceremonial and subsistence purposes. The Tribe's proposed action stems from the 1855 Treaty of Neah Bay, which expressly secures the Makah Tribe's right to hunt whales. To exercise that right, the Makah Tribe is seeking authorization from the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) under the Marine Mammal Protection Act and the Whaling Convention Act.

This DEIS, prepared pursuant to the National Environmental Policy Act (42 USC 4321 et seq.), considers various alternatives to the Tribe's proposed action. To develop the full range of action alternatives, NMFS considered the principal components associated with a hunt, including: the time when whale hunting would occur; the area where whale hunting would occur; the annual and five-year limits on the number of whales harvested, struck, and struck and lost; cessation of whale hunting if a predetermined number of identified whales (i.e., included in a photographic catalog of whales from the Pacific Coast Feeding Aggregation area) were harvested; and the method of hunting. The resultant alternatives are:

- Alternative 1, the No-action Alternative, wherein NMFS would not authorize a Makah gray whale hunt.
- Alternative 2, the Proposed Action Alternative, would allow harvest of four gray whales per year on average (with a maximum of five in any one year) and up to 20 whales in a 5-year period. Hunting would be allowed in the Tribe's U&A outside the Strait of Juan de Fuca from December 1 to May 31. Hunting would not be allowed within 200 yards of

Tatoosh Island and White Rock. The number of whales that could be struck would be limited to no more than seven in any calendar year and no more than 35 over the 5-year period, while the number of whales struck and lost would be limited to three annually and 15 over the 5-year period. The maximum number of whales struck in any year would be seven, and the maximum number struck and lost would be three.

- Alternative 3 includes the same area for the hunt as Alternative 2, but would eliminate timing and other restrictions on killing and landing identified whales.

- Alternative 4 would have the same conditions as Alternative 2, except that it would also prohibit vessels associated with any Makah hunt (including Makah vessels and associated protest, media, and law enforcement vessels) from entering the 200-yard exclusionary zone that the United States Fish and Wildlife Service has established around all rocks or islands comprising the Washington Islands National Wildlife Refuges.

- Alternative 5 would include the same hunting area as Alternative 2, but would differ by eliminating timing restrictions and the restrictions on landing identified whales, as well as imposing additional restrictions on the total number of whales harvested, struck, and struck and lost.

- Alternative 6 is the same as Alternative 3, except that the Tribe could hunt throughout its entire U&A, including the Strait of Juan de Fuca. Similar to Alternatives 3 to 5, there would be no timing restrictions or harvest limitations specifically for identified whales.

NMFS developed these alternatives with input from NMFS staff, the Makah Tribe, the cooperating agency (i.e., Bureau of Indian Affairs), and oral and written comments from the public. This DEIS addresses a number of resources identified for review during both internal and public scoping, including: water quality, marine habitat and species, ENP gray whales, other wildlife species, economics, environmental justice, social environment, cultural resources, ceremonial and subsistence resources, noise, aesthetics, transportation, public services, public safety, and human health.

This DEIS provides an important opportunity for the public to formally comment on the Tribe's proposal and the various alternatives. NMFS will address public comments in the final version of the EIS. These comments, in conjunction with considerations described in this DEIS, will provide key information to assist NMFS with its final decision on the Tribe's request.

Table of Contents

List of Acronyms and Abbreviations

ABL	allowable bycatch level
BIA	Bureau of Indian Affairs
C	Celsius
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cm	centimeters
CZMA	Coastal Zone Management Act
dB	decibal
DDT	dichloro-diphenyl-trichloroethane
DNA	deoxyribonucleic acid
dw	dry weight
EA	Environmental Assessment
Ecology	Washington Department of Ecology
EEZ	exclusive economic zone
EIS	Environmental Impact Statement
ENP	eastern North Pacific
EPA	U.S. Environmental protection Agency
ESA	Endangered Species Act
ESU	evolutionarily significant unit
F	Fahrenheit
FERC	Federal Energy Regulatory Commission
FONSI	Finding of No Significant Impact
FR	Federal Register
FWS	U.S. Fish and Wildlife Service
g	gram
Hz	hertz
ICRW	International Convention for the Regulation of Whaling
IU	international units
IUCN	International Union for Conservation of Nature
IWC	International Whaling Commission

K	carrying capacity
kg	kilogram
Makah or Tribe	Makah Indian Tribe
MEZ	moving exclusionary zone
mg	milligram
ml	milliliter
MMC	Marine Mammal Commission
MMPA	Marine Mammal Protection Act
MNPL	maximum net productivity level
MSA	Magnuson-Stevens Act
MSY	maximum sustainable yield
mtDNA	mitochondrial DNA
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NMML	National Marine Mammal Laboratory
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
OCNMS	Olympic Coast National Marine Sanctuary
ORSVI survey area	Oregon-Southern Vancouver Island survey area
OSP	optimum sustainable population
PBR	potential biological removal
PCBs	polychlorinated biphenyls
PCDD	polychlorinated dibenzodioxin
PCDF	polychlorinated dibenzofuran
PCFA survey area	Pacific Coast Feeding Aggregation survey area
PFMC	Pacific Fishery Management Council
pH	potential of Hydrogen (acidity or alkalinity)
PL	public law
RCW	revised code of Washington
RNA	regulated navigation area
ROD	Record of Decision
Sanctuary	Olympic Coast National Marine Sanctuary
TCDD	tetrachlorodibenzodioxin

TCDF	tetrachlorodibenzofuran
Treaty	1855 Treaty of Neah Bay
U&A	Usual and Accustomed fishing grounds
U.S.C.	United States Code
ug	microgram
UNESCO	United Nations Educational, Scientific, and Cultural Organization
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
WCA	Whaling Convention Act
WDFW	Washington Department of Fish and Wildlife
ww	wet weight

Glossary

.50 and .577 caliber rifle = High-powered rifles designed to shoot a bullet of diameter 0.5 inches or 0.577 inches, respectively.

Aboriginal subsistence whaling = As defined in regulations implementing the Whaling Convention Act, aboriginal subsistence whaling refers to whaling authorized by paragraph 13 of the Schedule annexed to and constituting a part of the Convention (i.e., International Convention for the Regulation of Whaling). The Schedule does not otherwise define aboriginal subsistence whaling, but the International Whaling Commission adopted the following definition of subsistence use by consensus at its 2004 annual meeting: (1) The personal consumption of whale products for food, fuel, shelter, clothing, tools, or transportation by participants in the whale harvest; (2) The barter, trade, or sharing of whale products in their harvested form with relatives of the participants in the harvest, with others in the local community or with persons in locations other than the local community with whom local residents share familial, social, cultural, or economic ties. A generalized currency is involved in this barter and tra[d]e, but the predominant portion of the products from each whale are ordinarily directly consumed or utilized in their harvested form within the local community; (3) The making and selling of handicraft articles from whale products, when the whale is harvested for the purposes defined in (1) and (2) above. General principles governing aboriginal subsistence whaling are contained in the Schedule.

Aboriginal subsistence whaling quota = Number of whales that may be taken by a Native American whaling organization for subsistence uses.

Adaptive management plan = A management approach wherein a plan is changed and improved in response to lessons learned during plan implementation.

Alaska Eskimos/Alaska Natives = A group of native people living in the Arctic coastal regions of Alaska.

Algal bloom = A rapid and often visible increase in the population of (usually) phytoplankton algae in an aquatic system.

Allowable Bycatch Level (ABL) = As defined in the Makah Tribe's waiver request, the number of whales from the Pacific Coast Feeding Aggregation that may be taken incidental to a hunt directed at the migratory portion of the Eastern North Pacific stock of gray whales. The ABL is calculated using the Marine Mammal Protection Act's potential biological removal approach but the minimum population estimate is calculated from the number of previously seen whales in the Oregon-Southern Vancouver Island survey area.

Ancestral villages = A settlement that has been inhabited for many generations.

Ancient canoe runs = Sub- and inter-tidal areas where it is possible to see old pathways perpendicular to the shoreline that were cleared of boulders and cobbles to allow canoes to reach shore without being damaged.

Baleen whale = A whale of the Suborder Mysteceti whose members have comb-like baleen plates (instead of teeth) which enable them to filter food from the water. As defined by the June 2007 Schedule to the International Convention for the Regulation of Whaling, baleen whale means any whale which has baleen or whale bone in the mouth (i.e. any whale other than a toothed whale).

Benthic = Living on the bottom of the ocean.

Benthos = The collection of organisms living on the bottom of the ocean.

Bequians = Inhabitants of Bequia, the second largest of the thirty-two islands and cays that make up the island state of St. Vincent & the Grenadines.

Bilateral agreement = An agreement between two countries detailing their mutual understanding, policies, and obligations on a particular matter.

Bunker fuel = A common and often low grade fuel used to power cargo ships.

Bureau of Indian Affairs = A United States agency within the Department of the Interior charged with the administration and management of land held in trust by the United States for American Indians, Indian tribes and Alaska Natives. In addition, the Bureau of Indian Affairs provides education services to approximately 48,000 Indians.

Calf (whale) = As defined by regulations implementing the Whaling Convention Act, a calf is any whale less than 1 year old or having milk in its stomach.

Cervical and cranial thoracic regions = Relating to the neck (cervical) or skull (cranial) in the chest (thoracic) region of a whale.

Cetacean = Refers to an animal belonging to the order Cetacea, which includes sea mammals such as whales and dolphins.

Chase boat = According to the Makah waiver application, a powered boat that assists in the whale hunt by staying in close proximity to the whaling crew in the canoe and towing a harvested whale to shore. In the Makah proposal each chase boat would be manned by a pilot, diver, rifleman, backup harpooner, and at least one other crew member, and would be equipped with a navigation system capable of fixing the vessel's position on the water.

Chukotka natives = Aboriginal people located in the far northeast of the Russian Federation.

Coastal Zone Management Act (CZMA) = A United States law that regulates development in coastal areas.

Code of Federal Regulations (CFR) = The United States government's codification of the general and permanent rules and regulations (sometimes called administrative law) published in the Federal Register by the executive departments and agencies of the United States Federal Government. The CFR is published by the Office of the Federal Register, an agency of the National Archives and Records Administration.

Contracting Government = A country/government party to the International Convention for the Regulation of Whaling.

Cooperative agreement = As defined by regulations implementing the Whaling Convention Act, a cooperative agreement is a written agreement between the National Oceanic and Atmospheric Administration and a Native American whaling organization for the cooperative management of aboriginal subsistence whaling operations.

Council on Environmental Quality (CEQ) = A division of the White House established as part of the National Environmental Policy Act of 1969. The CEQ issues an annual report to the President of the United States on the state of the environment; coordinates United States environmental efforts and works closely with agencies and other White House offices in the development of environmental and energy policies and initiatives; oversees federal agency implementation of the environmental impact assessment process; and acts as a referee when agencies disagree over the adequacy of such assessments.

Cultural Anthropology Panel = A group of experts in cultural anthropology convened by the International Whaling Commission in 1979 to discuss the Alaska Eskimo bowhead hunts.

Darting gun = A hand thrown device consisting of a barrel (to hold an explosive projectile) that is attached to a wooden shaft equipped with a toggle-point harpoon. The barrel contains a trigger rod that ignites a propellant or 'pusher' charge which fires the explosive projectile into the whale's body.

Decibels = A unit of measurement for sounds, in particular the loudness of sounds.

Delegates = Members of delegations, headed by commissioners, representing member nations that are party to the International Whaling Commission.

Deoxyribonucleic acid (DNA) = A large, double-stranded, helical molecule found in the nucleus of cells that carries the genetic code for an organism.

Dispatch = To kill a whale that has been struck.

Diver = According to the Makah waiver application, a member of the whaling crew whose duties include diving into the water from the chase boat to attempt to sew a whale's mouth shut to

prevent the whale from sinking after it has been struck by the harpooner and shot by the rifleman.

Drift whale = A whale that dies naturally or as a result of some human activity other than a directed hunt (for example, entanglement in fishing gear).

Ecotourism = Tourism that focuses on the natural ecological attributes of an area (e.g., whale-watching) and their preservation.

Ecotype = A subgroup of a species that is differentiated from other subgroups by distinct adaptations to a particular habitat.

Eight-gauge shoulder gun = A shoulder-mounted firearm with a long, smooth-bore barrel capable of shooting a 0.835-inch projectile.

Endangered species = As defined in the Endangered Species Act, an endangered species means any species which is in danger of extinction throughout all or a significant portion of its range.

Endangered Species Act (ESA) = A United States law that provides for the conservation of endangered and threatened species of fish, wildlife, and plants.

Endangered species list = The List of Endangered and Threatened Wildlife (50 CFR 17.11), and the List of Endangered and Threatened Plants (50 CFR 17.12) name all species of mammals, birds, reptiles, amphibians, fishes, insects, plants, and other creatures that have been determined by the National Marie Fisheries Service or the United States Fish and Wildlife Service to be in the greatest need of Federal protection. Once listed, a species receives the full range of protections available under the Endangered Species Act, including prohibitions on killing, harming or otherwise taking a species.

Environmental Assessment (EA) = In the context of National Environmental Policy Act, an EA is a concise public document that analyzes the environmental impacts of a proposed Federal action and provides sufficient evidence to determine the level of significance of the impacts. The EA includes a brief analysis of the environmental impacts of the proposed action and its alternatives, and results in one of two determinations: (1) an Environmental Impact Statement is required; or (2) a Finding of No Significant Impact.

Environmental Impact Statement (EIS) = A detailed written statement required by the National Environmental Policy Act and prepared by a federal agency. The EIS is used by decisionmakers to take environmental consequences into account. It describes a proposed action, the need for the action, alternatives considered, the affected environment, the environmental impacts of the proposed action, and other reasonable alternatives to the proposed action. An EIS is prepared in two stages: a draft and a final.

Environmental Protection Agency (EPA) = A United States agency responsible for protecting human health and the environment.

Eskimos = See Alaska Eskimos.

Evolutionarily significant unit (ESU) = A concept the National Marine Fisheries Service uses to identify distinct population segments of Pacific salmon under the Endangered Species Act. An ESU is a population or group of populations of Pacific salmon that (1) is substantially reproductively isolated from other populations and (2) contributes substantially to the evolutionary legacy of the biological species.

Exclusive economic zone (EEZ) = A coastal zone under national jurisdiction (up to 200-nautical miles wide) declared under the provisions of the 1982 United Nations Convention of the Law of the Sea, within which the United States has the rights over the use and exploration of marine resources. The United States EEZ in the northern portion of the Makah Usual and Accustomed fishing grounds is much narrower than 200 nautical miles due to the international boundary with Canada.

Federal Register = The United States government's daily publication of federal agency regulations and documents, including presidential proclamations, executive orders, and documents that must be published per acts of Congress.

Finding of No Significant Impact (FONSI) = A short National Environmental Policy Act document that presents the reasons why an action will not have a significant impact on the quality of the human environment and, therefore, will not require preparation of an Environmental Impact Statement. A Finding of No Significant Impact must be supported by the Environmental Assessment.

First Nation = A term referring to the aboriginal people located in what is now Canada.

Flense = To strip the blubber or skin from a dead whale.

Floats = Air-filled buoys attached by ropes to a struck or dead whale using a harpoon with a toggle point head. The floats keep the whale on the water surface so that it can be towed to shore for butchering.

Harassment = As defined in regulations implementing the Marine Mammal Protection Act, harassment means any act of pursuit, torment, or annoyance which: (1) has the potential to injure a marine mammal or marine mammal stock in the wild; or (2) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering. In the case of a military readiness activity or a scientific research activity conducted by or on behalf of the Federal Government, the term harassment means (1) any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild; or (2) any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns, including, but not limited to, migration,

surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered.

Harpooner = According to the Makah waiver application, a member of the whaling crew whose duties include throwing a long spear-like harpoon at a whale in order to embed a steel barb and its accompanying line and floats into the animal. A backup harpooner accompanies a separate crew on the tribal chase boat.

Harvest = To kill and land a whale.

Haulout = A site where seals, sea lions, and other marine mammals climb out of the water to rest on land.

Hertz = A measurement of vibration or frequency expressed in cycles per second. One hertz equals one cycle per second.

Humane = As defined in regulations implementing the Marine Mammal Protection Act, the term humane refers to that method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved.

Identified whale = A whale photographed in the Pacific Coast Feeding Aggregation and Oregon-Southern Vancouver Island survey areas in a prior summer feeding period and identifiable in the National Marine Mammal Laboratory's photographic identification catalog.

Indian Civil Rights Act = A United States law that prohibits Indian tribal governments from enacting or enforcing laws that violate certain individual rights. It was adopted by the United States Congress to ensure that tribal governments respect basic rights of Indians and non-Indians.

International Convention for the Regulation of Whaling (ICRW) = An international treaty (also referred to as the "Convention") signed in 1946 designed to "provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry." A focus of the treaty was the establishment of the International Whaling Commission. There are presently 79 member nations to the ICRW, including the United States.

International Whaling Commission (IWC) = A body of commissioners charged with carrying out the provisions of the ICRW.

IWC aboriginal subsistence whaling = See Aboriginal subsistence whaling

IWC Commercial Whaling Moratorium = A moratorium on all commercial whaling approved by the International Whaling Commission in 1982 which effectively expanded the 1937 ban on commercial harvest of gray whales and right whales to all large whale species.

IWC Scientific Committee = A part of the International Whaling Commission (IWC), this group consists of approximately 200 of the world's leading whale biologists who provide advice

on the status of whale stocks. The IWC Scientific Committee meets annually in the two weeks immediately preceding the main International Whaling Commission meeting. It may also call special meetings as needed to address particular subjects during the year.

Land/Landing = As defined by regulations implementing the Whaling Convention Act, landing means bringing a whale or any parts thereof onto the ice or land in the course of whaling operations.

Landfill = A place where solid waste (garbage) is disposed between layers of dirt.

Level A harassment = As defined in regulations implementing the Marine Mammal Protection Act, Level A harassment means any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild. In the case of a military readiness activity or a scientific research activity conducted by or on behalf of the Federal Government, the term Level A harassment means any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild.

Level B harassment = As defined in regulations implementing the Marine Mammal Protection Act, Level B harassment means any act of pursuit, torment, or annoyance which has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering. In the case of a military readiness activity or a scientific research activity conducted by or on behalf of the Federal Government, the term Level B harassment means any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered.

Local aboriginal consumption = A phrase defined by the 1981 *Ad Hoc* Technical Working Group (but not formally adopted by the International Whaling Commission) to mean traditional uses of whale products by local aboriginal, indigenous or native communities in meeting their nutritional, subsistence and cultural requirements. The term includes trade in items which are by-products of subsistence catches.

Lose = As defined by the June 2007 Schedule to the International Convention for the Regulation of Whaling, lose means to either strike or take but not to land. ('Take' has a distinct meaning in the Marine Mammal Protection Act and International Convention for the Regulation of Whaling.)

Maa-Nulth First Nations = The Maa-nulth First Nations comprise five First Nations from Vancouver Island. They include: Huu-ay-aht First Nations, Ka:'yu:'k't'h'/Che:k'tles7et'h First Nations, Toquaht Nation, Uchucklesaht Tribe, and the Ucluelet First Nation. Maa-nulth means "villages along the coast" in the Nuu-chah-nulth language. These villages/territories are located on the west coast of Vancouver Island surrounding Barkley Sound and Kyuquot Sound.

Makah Tribal Council = The governing body of the Makah Tribe. In three cooperative agreements with the Makah Tribe (in 1996, 1997, and 2001) the National Oceanic and Atmospheric Administration recognized the Makah Tribal Council as a Native American whaling organization and allowed the Council to issue permits to whaling captains in compliance with the cooperative agreements and Whaling Convention Act regulations.

Makah Whaling Commission = Members of the Makah Tribe that serve to review whaling crew qualifications, identify whaling crew and vessel participation, and provide other hunt restrictions and recommendations. The Makah Tribal Council would issue the permit to a whaling captain before any hunt, based on recommendations from the Makah Whaling Commission.

Maktak = Whale skin and layer of blubber used for food.

Magnuson Stevens Act (MSA) = Also known as the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006. A United States law that is the governing authority for all fishery management activities that occur in federal waters within the United States 200 nautical mile limit, or Exclusive Economic Zone. The recent reauthorization mandates the use of annual catch limits and accountability measures to end overfishing, provides for widespread market-based fishery management through limited access programs, and calls for increased international cooperation.

Marine Mammal Commission (MMC) = An independent agency of the United States Government, established under Title II of the Marine Mammal Protection Act. The MMC was created to provide independent oversight of the marine mammal conservation policies and programs being carried out by the federal regulatory agencies. The MMC is charged with developing, reviewing, and making recommendations on domestic and international actions and policies of all federal agencies with respect to marine mammal protection and conservation and with carrying out a research program.

Marine Mammal Protection Act (MMPA) = A United States law that prohibits, with certain exceptions, the take of marine mammals in United States waters and by United States citizens on the high seas, and the importation of marine mammals and marine mammal products into the United States

Maximum Net Productivity Level (MNPL) = A population level related to maximum net productivity, a rate of change defined in the National Marine Fisheries Service's Marine Mammal Protection Act regulations as the greatest net annual increment in population numbers or biomass resulting from additions to the population due to reproduction and/or growth less losses due to natural mortality.

Mitochondrial deoxyribonucleic acid (mtDNA) = DNA that is found in the mitochondria of cells. Unlike nuclear DNA, mtDNA is only inherited through the mother.

Moratorium = See IWC Commercial Whaling Moratorium

Moving Exclusion Zone (MEZ) = As defined in United States Coast Guard regulations, the MEZ is a vessel-based buffer within the Regulated Navigation Area designed to promote the safety of the whaling crew and other persons/watercraft operating in the vicinity of the whaling crew. The MEZ includes the column of water from the surface to the seabed with a radius of 500 yards centered on the Makah whale hunt vessel. Unless otherwise authorized by the Coast Guard, no person or vessel may enter the active MEZ except for an authorized Makah whale hunt and certain authorized media pool vessels.

National Environmental Policy Act (NEPA) = A United States law declaring that it is the continuing policy of the Federal government to use all practicable means to create and maintain conditions under which people and nature can exist in productive harmony and fulfill the social, economic, and other needs of present and future generations of Americans. NEPA provides a mandate and a framework for Federal agencies to consider all reasonably foreseeable environmental effects of their proposed actions and to involve and inform the public in the decisionmaking process.

National Marine Fisheries Service (NMFS) = A United States agency within the National Oceanic and Atmospheric Administration and under the Department of Commerce charged with the stewardship of living marine resources through science-based conservation and management, and the promotion of healthy ecosystems.

National Oceanic and Atmospheric Administration (NOAA) = A scientific agency of the United States Department of Commerce focused on the conditions of the oceans and the atmosphere. NOAA warns of dangerous weather, charts seas and skies, guides the use and protection of ocean and coastal resources, and conducts research to improve understanding and stewardship of the environment. NOAA manages 13 National Marine Sanctuaries, including the Olympic Coast National Marine Sanctuary.

NOAA Office of International Affairs = An office within the National Oceanic and Atmospheric Administration that develops, coordinates, and promotes United States international policies in NOAA-related matters such as ecosystem-based management, climate change, earth observation, and weather forecasting.

Native American whaling organization = As defined by Whaling Convention Act regulations, an entity recognized by NMFS (e.g., the Makah Tribe) as representing and governing the relevant Native American whalers for the purposes of cooperative management of aboriginal subsistence whaling.

Non-binding resolution = A written motion adopted by a deliberative body (e.g., the United States Congress) that does not progress into a law but instead serves to formally express an opinion.

Observer = According to the Makah waiver application, a member of the Makah Department of Fisheries Management whose duties include observing the hunt and photographing any whale landed.

Occipital condyle = Skull bones located at the back and lower part of the cranium near the attachment of the spinal column.

Olympic Coast National Marine Sanctuary (OCNMS) = One of 13 marine sanctuaries in the United States administered by NOAA. It was designated as the first National Marine Sanctuary in the Pacific Northwest in 1994 and encompasses 3,310 square miles off of Washington State's Olympic Peninsula, extending 135 miles along the Washington Coast from about Cape Flattery to the mouth of the Copalis River.

Olympic National Park = A large national park located on Washington's Olympic Peninsula and managed by the United States National Park Service. Originally designated as the Olympic National Monument in 1909, it was re-designated a National Park in 1938 and became a World Heritage Site in 1981.

Optimum sustainable population (OSP) = As defined by regulations implementing the Marine Mammal Protection Act, the term optimum sustainable population means, with respect to any population stock, the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element.

Oregon to Southern Vancouver Island (ORSVI) = An area surveyed for whales within the Pacific Coast Feeding Aggregation survey area and encompassing coastal marine waters from Oregon to southern Vancouver Island, B.C.

Pacific Coast Feeding Aggregation (PCFA) survey area = A coastal marine survey area from northern California to northern Vancouver Island, B.C, used by some foraging gray whales during the summer.

Pacific Fishery Management Council (PFMC) = One of eight regional fishery management councils established by the Magnuson Fishery Conservation and Management Act of 1976 for the purpose of managing fisheries from 3-200 miles offshore of the United States of America coastline. The PFMC is responsible for fisheries off the coasts of California, Oregon, and Washington.

Pelagic = Of or in the upper layers of the open ocean.

Penthrite = Pentaerythritol tetranitrate or PETN. An odorless white crystalline solid used as a powerful explosive. Employed in whale hunting as a "penthrite grenade" discharged from a harpoon cannon.

Petroglyph = An ancient picture or inscription drawn or carved into a rock.

Pilot = According to the Makah waiver application, a member of the whaling crew whose duties include navigating the chase boat.

Plenary session = That portion of the annual International Whaling Commission meeting during which the full body of commissioners (or their deputy/alternate) debate and vote on proposals, resolutions, and motions before the International Whaling Commission.

Plenary power = Complete and unlimited power.

Pods = Small groups of marine mammals, especially whales.

Polychlorinated biphenyls (PCBs) = A class of toxic organic compounds known to accumulate in animal tissue. PCBs were primarily used as cooling and insulating fluids for industrial transformers and capacitors prior to being banned in the United States in the 1970s.

Potential Biological Removal Level (PBR) = As defined by regulations implementing the Marine Mammal Protection Act, the term PBR level means the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population level. The PBR level is the product of the following factors: (1) The minimum population estimate of the stock; (2) One-half the maximum theoretical or estimated net productivity rate of the stock at a small population size; (3) A recovery factor of between 0.1 and 1.0.

Precedential effects = The effects of an action that would set a precedent for similar actions in the future.

Pupping = To give birth to pup seals or sea lions.

Record of Decision (ROD) = A National Environmental Policy Act document signed by the agency decisionmaker following the completion of an EIS. The ROD contains the decisions, alternatives considered, environmentally preferable alternative(s), factors considered in the agency's decisions, mitigation measures to be implemented; it also indicates whether all practicable means to avoid or minimize environmental harm have been adopted.

Recruitment = The process of adding individual whales to a population, group or area (usually by reproduction but also by migration).

Regulated navigation area (RNA) = As defined in United States Coast Guard regulations, the RNA is a marine zone the United States Coast Guard established within which the Makah whaling crew can activate a MEZ. The RNA promotes the safety of the whaling crew and other persons/watercraft operating in the vicinity of the whaling crew.

Regional Administrator = A National Marine Fisheries Service official who, among other duties, has been delegated authority to make the initial waiver determination under the Marine Mammal Protection Act on the Makah application.

Rifleman = According to the Makah waiver application, a member of the whaling crew whose duties include shooting a harpooned whale using a high-powered rifle.

Rookeries = Sites where seals and sea lions congregate on shore to mate and give birth.

Russian Federation = A federation of independent states in northeastern Europe and northern Asia; formerly the Soviet Union.

Safety officer = According to the Makah waiver application, a member of the whaling crew whose duties include determining when the rifleman or whaler can discharge their weapon.

Salvage = To collect and utilize a dead, unclaimed whale.

Schedule = A document maintained by the International Whaling Convention that governs the conduct of whaling throughout the world. The measures described in the Schedule, among other things, provide for the protection of certain species; designate specified areas as whale sanctuaries in which commercial whaling may not occur if it were to resume; set limits on the numbers and size of whales which may be taken; prescribe open and closed seasons and areas for whaling; and prohibit the capture of suckling calves and female whales accompanied by calves. The compilation of catch reports and other statistical and biological records is also required. The most recent Schedule was amended by the Commission at the 59th Annual Meeting in Anchorage, Alaska, May 28 - 31, 2007.

Scoping = An open process agencies must conduct under the National Environmental Policy Act to determine the range and significance of the issues to be analyzed in depth in an Environmental Impact Statement.

Seabird breeding colonies = Sites at which seabirds congregate to breed (e.g., the numerous islands, rocks, and cliffs along the Washington coast).

Shrapnel = Fragments from an exploded projectile such as a bullet or bomb.

Stinker = As defined by regulations implementing the Whaling Convention Act, stinker refers to a dead, unclaimed whale found upon a beach, stranded in shallow water, or floating at sea.

Stinky whale = Whales that have a strong chemical smell and claimed to be inedible.

Stock = As defined by regulations implementing the Marine Mammal Protection Act, the term stock (or population stock) means a group of marine mammals of the same species or smaller taxa in a common spatial arrangement, that interbreed when mature.

Strike/Struck = As defined by the June 2007 Schedule to the International Convention for the Regulation of Whaling, strike means to penetrate with a weapon used for whaling.

Subsistence catches = A phrase defined by the 1981 *Ad Hoc* Technical Working Group (but not formally adopted by the International Whaling Convention) to mean catches of whales by aboriginal subsistence whaling operations.

Take = As defined by the June 2007 Schedule to the International Convention for the Regulation of Whaling, take means to flag, buoy or make fast to a whale catcher. As defined by the Marine Mammal Protection Act, take means to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal.

Threatened species = As defined in the Endangered Species Act, a threatened species means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Toggle point = A specialized metal point that helps keep a harpoon from slipping out of a struck whale by means of a metal barb that actuates upon penetrating the whale's skin.

Transfer station = A site used to temporarily store refuse prior to transporting it to the end point of disposal or treatment (e.g., a landfill).

Treaty of Neah Bay = The United States government and the Makah Tribe entered into the Treaty of Neah Bay on January 31, 1855. In addition to reserving the right of taking fish at all usual and accustomed grounds and stations, Article IV of the treaty secured the rights of whaling or sealing. The Treaty of Neah Bay is the only treaty between the United States and an Indian tribe that expressly provides for the right to hunt whales.

United States Coast Guard (USCG) = A branch of the United States Department of Homeland Security involved in maritime law, mariner assistance, and search and rescue in America's coasts, ports, and inland waterways as well as international waters with security and economic interests to the United States.

United States Fish and Wildlife Service (FWS) = A bureau within the United States Department of the Interior responsible for enforcing federal wildlife laws, protecting threatened and endangered species, managing migratory birds, restoring nationally significant fisheries, conserving and restoring wildlife habitat such as wetlands, and helping foreign governments with their international conservation efforts. The FWS manages 520 National Wildlife Refuges, including the Washington Islands National Wildlife Refuges.

Usual and accustomed fishing grounds (U&A) = Areas in Washington where tribes have secured treaty rights to fish. The 1855 Treaty of Neah Bay secured these rights (including whaling and sealing rights) for the Makah tribe, and the tribe's U&A fishing grounds were adjudicated in *United States v. Washington*, 626 F.Supp. 1405, 1467 (W.D. Wash. 1985). The boundaries of this U&A include United States waters in the western Strait of Juan de Fuca as

well as open ocean areas of the Washington coast north of 48° 02'15" latitude and east of 125° 44'00" longitude.

Washington Islands National Wildlife Refuges = A complex of three National Wildlife Refuges (Flattery Rocks, Quillayute Needles, and Copalis) spanning over 100 miles of Washington's Pacific Coast. Refuge habitat consists of approximately 870 coastal rocks and reefs managed by the United States Fish and Wildlife Service primarily to protect seabird nesting.

Wasteful manner = As defined by regulations implementing the Whaling Convention Act, wasteful manner means a method of whaling that is not likely to result in the landing of a struck whale or that does not include all reasonable efforts to retrieve the whale.

Whale catcher = As defined by the Whaling Convention Act, a whale catcher is a vessel used for the purpose of hunting, killing, taking, towing, holding onto, or scouting for whales. The Makah tribe proposes to employ two types of whale catchers – a paddle-powered canoe(s) and a motorized chase boat.

Whaling captain = As defined by regulations implementing the Whaling Convention Act, a whaling captain or captain means any Native American who is authorized by a Native American whaling organization to be in charge of a vessel and whaling crew.

Whaling Convention Act (WCA) = A United States law that provides the framework for meeting United States obligations arising from the 1946 International Convention for the Regulation of Whaling. It provides for a United States Commissioner to the International Whaling Commission and authorizes the Secretary of State to present objections to that Commission's regulations. It establishes as unlawful whaling, transporting whales or selling whales, in violation of the Convention regulations. It sets up a whaling licensing framework, with fines and imprisonment for violations. Enforcement is primarily the responsibility of the Secretary of Commerce.

Whaling crew = As defined by regulations implementing the Whaling Convention Act, a whaling crew means those Native Americans under the control of a captain. A Makah whaling crew consists of eight Makah tribal members; one serving as captain and the rest as a harpooner and paddlers.

Chapter 1
Purpose and Need

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1.0 PURPOSE AND NEED

1.1 Introduction

1.1.1 Summary of the Proposed Action

The Makah Indian Tribe (Makah or Tribe) proposes to resume limited hunting of eastern North Pacific (ENP) gray whales (*Eschrichtius robustus*; otherwise referred to in this chapter as 'gray whales' and 'whales') in the coastal portion of the Tribe's usual and accustomed fishing grounds (U&A), off the coast of Washington State, for ceremonial and subsistence purposes. The Tribe proposes to harvest up to 20 whales over a five-year period, with no more than five gray whales harvested in any single year. This proposal is in accordance with the current five-year catch limit set by the International Whaling Commission (IWC) for the ENP gray whale stock of 620 whales total, with no more than 140 harvested per year. Both the annual and five-year totals are allocated between the United States and the Russian Federation by a separate bilateral agreement. The Tribe's proposal also includes measures intended to limit the number of whales that may be struck in any year, avoid the intentional harvest of gray whales identified as part of the Pacific Coast Feeding Aggregation (PCFA), limit the annual harvest of PCFA whales based on the abundance of a subset of PCFA whales, ensure that the hunt is as humane as practicable, and protect public safety. This EIS uses the term 'hunt' to include all activities associated with approaching, striking, killing, and landing whales, and the term 'harvest' to mean killing and successfully landing whales.

The 1855 Treaty of Neah Bay expressly secures the Makah Tribe's right to hunt whales. To exercise that right under the Ninth Circuit Court of Appeals decision in *Anderson v. Evans* (2004) however, the Makah must obtain authorization from the National Oceanic and Atmospheric Administration's (NOAA's) National Marine Fisheries Service (NMFS). Two statutes govern any authorization: the Marine Mammal Protection Act (MMPA) (16 United States Code [USC] 1361 et seq.) and the Whaling Convention Act (WCA) (16 USC 916 et seq.). Specifically, to authorize Makah gray whale hunting, NMFS must perform the following actions:

- Waive the moratorium prohibiting take of marine mammals under Section 101(a)(3)(A) of the MMPA.
- Promulgate regulations implementing the waiver and governing the hunts in accordance with Section 103 of the MMPA.
- Issue any necessary permits to the Makah under Section 104 of the MMPA.

- Enter into a cooperative agreement with the Tribe for co-management of any gray whale hunt and publish any relevant aboriginal subsistence whaling quotas under the provisions of the WCA.

In February 2005 the Makah Tribe formally requested waiver of the take moratorium under the MMPA to hunt gray whales. To assist in its MMPA and WCA determinations, NMFS is preparing this environmental impact statement (EIS) under the National Environmental Policy Act (NEPA) as the lead agency reviewing this action (42 USC 4321 et seq.). See Section 1.2, Legal Framework, for more detail.

Table 1-1 contains certain aspects of the Makah's proposed action, with additional description in Chapter 2, Alternatives.

TABLE 1-1. SUMMARY OF THE MAKAH'S PROPOSED ACTION

Species restrictions	Hunt ENP gray whales only.
Age/sex restrictions	Prohibit hunting of calves or whales accompanied by calves.
Number restrictions	Harvest up to 20 whales in a five-year period, with a maximum of 5 whales harvested, 7 struck, and 3 struck and lost per calendar year. Reduce numbers of harvested, struck, and struck and lost whales as necessary in accordance with United States obligations under the International Convention for the Regulation of Whaling (ICRW), or to prevent the ENP gray whale stock from falling below optimum sustainable population (OSP) levels under the MMPA. Cease hunting in any year if the number of harvested whales exceeds an allowable bycatch level based on matches in the National Marine Mammal Laboratory's photographic identification catalog for PCFA gray whales.
Area restrictions	Hunt within the coastal portion of the Makah U&A, excluding the Strait of Juan de Fuca. Prohibit hunting within 200 yards of Tatoosh Island and White Rock during May to protect nesting seabirds.
Timing restrictions	Prohibit hunting from June 1 through November 30 during any calendar year to avoid intentional harvest of whales feeding off the coast of Washington during the summer feeding period.
Method of hunt restrictions	Hunt using traditional methods, except for the mandatory use of a .50 caliber rifle to kill the whale.
Use restrictions	Limit use of whale products to ceremonial and subsistence purposes. Prohibit the commercial sale or offer for sale of any whale products, except for sale or offer for sale of traditional handicrafts made from non-edible whale parts within the United States.

1.1.2 Project Location

The Makah Tribe proposes to resume gray whale hunting in the coastal portion of the Tribe's fishing U&A, as adjudicated by the Western District Court of Washington in *United States v. Washington* (1974 and 1985). The Makah U&A includes marine waters off the northwest coast of Washington State and the western portion of the Strait of Juan de Fuca (Figure 1-1). The Makah's proposed action area (Figure 1-1) is smaller than its adjudicated U&A because the Tribe proposes

to exclude the Strait of Juan de Fuca to address concerns about public safety and the effects of hunts on gray whales in the local area.

Figure 1-1 also shows the larger project area, which encompasses the entire Makah U&A and adjacent marine waters, as well as land areas with the potential to be affected by one or more of the project alternatives. The project area includes the following sites:

- Beaches where a gray whale may be landed and butchered
- Rocks and islands of the Washington Islands National Wildlife Refuges within the waters of the Olympic Coast National Marine Sanctuary (OCNMS or Sanctuary), where sanctuary resources such as seabirds and hauled-out marine mammals might be affected
- The Makah and Ozette Reservations and the community of Neah Bay, where many tribal members reside and public services are located
- Other shoreline areas that provide physical or visual access to the Makah's U&A (e.g., vantage points provided by the coastal strip of the Olympic National Park)

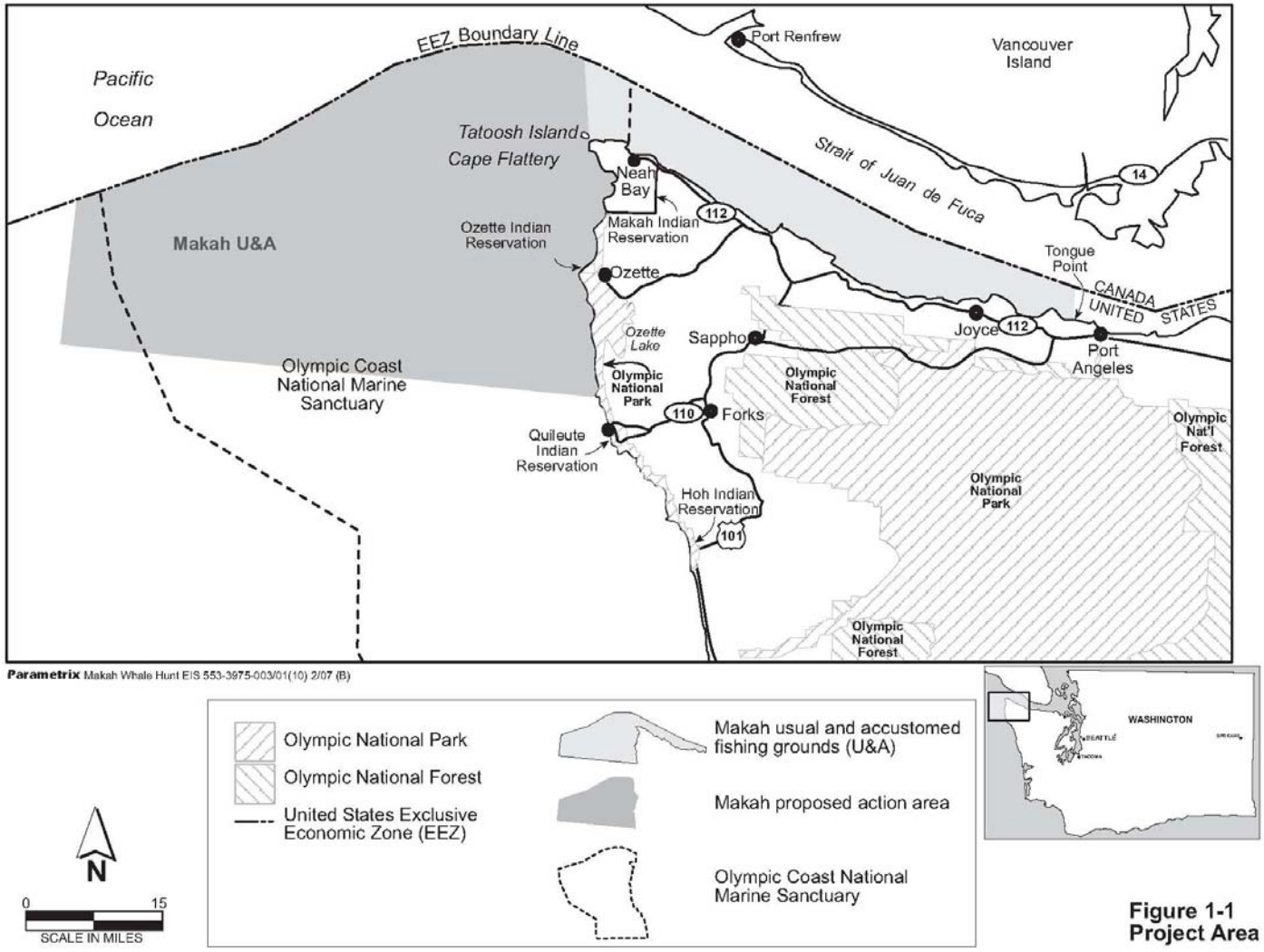

Figure 1-1
Project Area

1.1.3 Summary of Eastern North Pacific Gray Whale Status

The ENP gray whale population migrates along the west coast of North America between Mexico and Alaska and is present year-round in the project area. The population sustained historical aboriginal hunting by natives in present-day Russia, Alaska, British Columbia, and Washington State for many centuries, but commercial whaling in the late 1800s and early 1900s decimated the population. Due to a suite of international and national protections (Section 3.4.3.2.2, Historic Status of the Gray Whale Population, Protection and Recovery after Commercial Exploitation), the population recovered (Rugh et al. 2005). In 1994, ENP gray whales were delisted under the Endangered Species Act (ESA) (59 Federal Register 31094, Jun. 16, 1994). The current estimated population size is approximately 20,110 animals (Rugh et al. 2008). See Section 3.4, Eastern North Pacific Gray Whale, for more information.

1.1.4 Summary of Makah Tribe's Historic Whaling Tradition

The Makah's tradition of whale hunting dates back at least 1,500 years; subsistence use of whale products from drift and stranded whales extends back another 750 years before that time, prior to development of hunting equipment and techniques (Renker 2002). The gray whale was one of the major whale species the Makah hunted due to its predictable near-shore migrations and slow swimming speeds that allowed for approach by canoe (Huelsbeck 1988; Renker 2002).

Whaling provided a food source for the Tribe; oil, blubber, and other products were also important trade goods for barter with other tribes, as well as for commerce with European traders and settlers. Whaling also provided intangible benefits to the Tribe and was a central organizing feature of Makah culture, as evidenced in the religious and social structure (Sepez 2001). The fact that the Treaty of Neah Bay is the only treaty between the United States government and a Native American tribe that specifically protects the right to hunt whales suggests the historic importance of whaling to the Makah Tribe (*Anderson v. Evans* 2004).

A combination of factors led to the suspension of Makah whaling in the 1920s. Commercial whaling decimated the populations of several whale species and drastically reduced the number of whales available to Makah hunters. Smallpox and other infectious diseases reduced the Tribe's numbers, leading to changes in the Tribe's social structure and suppressing family-owned whaling knowledge (Kirk 1986; Renker 2002). Around the same time, the demand for whale oil plummeted (Henderson 1984), and sealing became more profitable than whaling (Kirk 1986). Throughout this time, the United States government attempted to assimilate Native Americans into western society. The government did not provide the assistance for whaling promised in the

treaty negotiations, instead encouraging farming practices that ultimately failed due to the nature of the environment; it also banned ceremonial activities related to whaling (Renker 2002) (Section 3.10.3.4.2, Factors Responsible for Discontinuation of the Hunt).

The Makah Tribe formally notified NMFS of its interest in re-establishing limited ceremonial and subsistence whale hunting on May 5, 1995 (Makah Tribal Council 1995a), approximately one year after NMFS removed the ENP gray whale from the endangered species list. Four years later, the Makah hunted and landed one gray whale. Judicial decisions have since prevented the Tribe from hunting gray whales until certain processes are completed. For more information on historic and contemporary Makah whaling, refer to Section 3.10, Ceremonial and Subsistence Resources and the September 2007 unlawful take (Section 1.4.2, Summary of Recent Makah Whaling – 1998 through 2007).

1.2 Legal Framework

The following section describes the legal framework that will guide NMFS' decisions related to this project, including environmental review under NEPA, the Treaty of Neah Bay and the federal trust responsibility, species protection and conservation under the MMPA, and governance of aboriginal subsistence whaling quotas under the WCA.

1.2.1 National Environmental Policy Act

Congress enacted NEPA to create and carry out a national policy designed to encourage harmony between humankind and the environment. While NEPA neither compels particular results nor imposes substantive environmental duties upon federal agencies (*Robertson v. Methow Valley Citizens Council* 1989), it does require that they follow certain procedures when making decisions about any proposed federal actions that may affect the environment. These procedures ensure that an agency has the best possible information before it to make an informed decision regarding the environmental effects of any proposed action. They also ensure full disclosure of any associated environmental risks to the public. Regulations promulgated by the Council on Environmental Quality (40 CFR [Code of Federal Regulations] 1500-1508) contain specific guidance for complying with NEPA.

Under the Council on Environmental Quality regulations, federal agencies may prepare an environmental assessment (EA) to determine whether a proposed action may have a significant impact or effect on the quality of the human environment. Agencies must examine the context of the action and intensity of the effects to determine the significance of impacts. If information in

an EA indicates that the environmental effects are not significant, the agency issues a finding of no significant impact (FONSI) to conclude the NEPA review. NMFS issued FONSIs in two prior NEPA assessments of Makah whale hunting proposals.

NMFS published an EA and FONSI on the first Makah proposal on October 17, 1997 (NMFS 1997), but the Court of Appeals for the Ninth Circuit in *Metcalf v. Daley* (2000) set them aside. Based primarily on the timing of the agency's environmental review, the court held that NMFS had failed to take a hard look at the environmental consequences of the action before making an irreversible commitment to approve the Tribe's proposal. NMFS issued another EA and FONSI on the second Makah whale hunting proposal on July 12, 2001 (NMFS 2001a). The Court of Appeals for the Ninth Circuit in *Anderson v. Evans* (2004) ruled that an EIS, rather than an EA, should have been prepared. The court also stated that the Makah must comply with the process prescribed in the MMPA for authorizing otherwise-prohibited take of marine mammals in order to pursue any treaty rights for whale hunting. The *Anderson v. Evans* (2004) ruling requires NMFS to analyze new issues; informed by that decision, NMFS has prepared this draft EIS. See Section 1.4.3, Other Environmental Assessments and Court Decisions Informing this Action, for more details about prior EAs and court rulings related to this action.

An EIS provides a detailed statement of the environmental impacts of the action, reasonable alternatives, and measures to mitigate adverse effects of the proposed actions. Although the MMPA and NEPA requirements overlap in some respects, the scope of NEPA goes beyond that of the MMPA by considering the impacts of the proposed federal action on non-marine mammal resources such as human health and cultural resources.

An EIS culminates in a Record of Decision (ROD). The ROD documents the alternative selected for implementation, may recommend further review, attaches any conditions that the agency may require, and summarizes the impacts expected to result from the action.

1.2.2 Treaty of Neah Bay and the Federal Trust Responsibility

This section provides a brief history of federal-tribal relations, a general legal description of the treaty rights of the Northwest tribes that evolved from that history, a more specific description of the Makah treaty right to hunt whales, the recent history of the Makah's efforts to use their treaty rights, and the current legal framework for implementation of those rights as defined in the Ninth Circuit Court's decision in *Anderson v. Evans* (2004).

Prior to 1871, the United States government often entered into treaties with Indian tribes, which typically provided for the surrender of large areas of land the Indians occupied to allow for the westward expansion of non-Indians. In exchange, the United States recognized permanent homelands (reservations) and sometimes explicitly or implicitly provided for off-reservation hunting, gathering, and fishing rights. Treaties with Indian tribes are the supreme law of the land and generally preempt state laws. Treaty language securing fishing and hunting rights is not a "grant of rights [from the federal government] to the Indians, but a grant of rights from them — a reservation of those not granted" (*United States v. Winans* 1905). In other words, the tribes retain rights not specifically surrendered to the United States (commonly referred to as reserved rights). The scope of reserved Indian hunting, fishing, and gathering rights that have been recognized by the courts is sometimes very broad and depends on the language of the treaty or the known culture of the tribe at treaty time. Courts have developed rules for interpreting Indian treaties that recognize the communication difficulties between the tribes and treaty negotiators, the imbalance of power between the tribes and the United States, and the fact that the tribes are unlikely to have understood the legal ramifications of the exact wording of their treaties (Cohen 2005). Accordingly, courts liberally construe treaties, resolve ambiguities in the tribe's favor, and "interpret Indian treaties to give effect to the terms as the Indians themselves would have understood them" (*Minnesota v. Mille Lacs Band of Chippewa* 1999).

Seventeen Indian tribes located in western Washington State have treaty-protected and adjudicated fishing rights in the Pacific Ocean, Strait of Juan de Fuca, and Puget Sound. The United States government and the Makah Tribe entered into the Treaty of Neah Bay on January 31, 1855, and the Senate consented to its ratification on March 8, 1859 (United States Statutes at Large, Volume 12, Page 939). In addition to reserving the right of taking fish at all usual and accustomed grounds and stations, Article IV of the treaty secured the rights of whaling or sealing. The Treaty of Neah Bay is the only treaty between the United States and an Indian tribe that expressly provides for the right to hunt whales. At the time of the treaty, gray whale hunting was an integral part of the Tribe's economy and a foundation of the Tribe's unique, maritime-based, indigenous culture.

1.2.2.1 The Stevens Treaties

"To extinguish the last group of conflicting claims to lands lying west of the Cascade mountains and north of the Columbia River, in what is now the State of Washington, the United States entered into a series of treaties with Indian Tribes in 1854 and 1855" (*Washington v. Washington State Commercial Passenger Fishing Vessel Association* 1979). These treaties are called the

Stevens Treaties after Isaac Stevens, the Governor of Washington Territory, who was the United States negotiator. The Stevens Treaties settled the land claims and secured the hunting and fishing rights for numerous tribes, including the Makah Tribe. The promise that the Indian tribes would be guaranteed continued access to a variety of natural resources essential to their livelihood and way of life for future generations was essential for securing Indian consent to the treaties with the United States (*United States v. Washington* 1974). The scope of reserved Indian hunting, fishing, trapping, and gathering rights that courts have recognized depends on the language of the treaty and the circumstances surrounding the treaty negotiations (Section 1.2.2, Treaty of Neah Bay and the Federal Trust Responsibility, for information about how courts interpret treaties).

1.2.2.2 Scope of the Fishing Right under the Stevens Treaties

The fishing clauses of the Stevens Treaties have been at the center of litigation for more than 100 years involving state attempts to limit the exercise of treaty fishing rights. *United States v. Washington* (1974), commonly referred to as the "Boldt" decision, defined the scope of these treaty rights to fish. The court held that state regulation of treaty fishing was authorized only if reasonable and necessary for conservation. In affirming this decision the Supreme Court also interpreted the Stevens Treaties to secure 50 percent of the harvestable surplus of fish passing through their "usual and accustomed grounds and stations" (*United States v. Washington* 1974) to the tribes, unless their moderate living needs could be met by a lesser amount (*Washington v. Washington State Commercial Passenger Fishing Vessel Association* 1979). The Treaty of Neah Bay was one of the Stevens Treaties reviewed in the *United States v. Washington* (1974) litigation. Although the court's focus in that proceeding was to address the appropriate exercise of the Tribe's fishing rights, in reviewing the treaty, the court noted the following:

> [t]he treaty commissioners were aware of the commercial nature and value of the Makah maritime economy and promised the Makah that the government would assist them in developing their maritime industry. Governor Stevens found the Makah not much concerned about their land . . . but greatly concerned about their marine hunting and fishing rights. Much of the official record of the treaty negotiations deals with this. Stevens found it necessary to reassure the Makah that the government did not intend to stop them from marine hunting and fishing but in fact would help them develop these pursuits (*United States v. Washington* 1974).

Additionally, the court noted the following:

> [i]n aboriginal times the Makah enjoyed a high standard of living as a result of their marine resources and extensive marine trade. . . . The Makah not only sustained a Northwest Coast culture, but also were wealthy and powerful as contrasted with most of their neighbors (*United States v. Washington* 1974).

The Court of Appeals for the Ninth Circuit similarly noted that the specific reservation of the right to whale in the Treaty of Neah Bay "suggests the historic importance of whaling to the Makah Tribe" (*Anderson v. Evans* 2004). The Makah U&A for fishing was defined in a later sub-proceeding under *United States v. Washington* (1985).

1.2.2.3 Limitations on the Exercise of Treaty Rights

Treaty rights are not unbounded. The United States Supreme Court has held that the United States Congress has full power over Indian lands and Indian tribes and can abrogate federal Indian treaties (*Lone Wolf v. Hitchcock* 1903) unilaterally, though doing so may implicate Fifth Amendment taking concerns and the need to pay compensation (*Menominee Indian Tribe v. United States* 1968; *Hynes v. Grimes Packing Company* 1949; *United States v. Shoshone Tribe of Indians* 1938). The courts will not lightly find that treaty rights have been abrogated (*Menominee Indian Tribe v. United States 1968*). Generally, states cannot regulate treaty hunting and fishing activities (*Menominee Tribe v. United States* 1968). However, the states of Washington and Oregon have some ability to limit the exercise of Indian treaty rights for conservation purposes where such regulation is necessary to sustain the species.

1.2.2.3.1 State Regulation

In the Pacific Northwest, a significant body of law has developed over the last 40 years in response to state attempts to impose regulations that effectively prevented tribal fishermen from taking fish at their usual and accustomed places. In the 1970s, the United States brought litigation on behalf of the Stevens Treaty tribes against the states of Washington and Oregon to establish the treaty right guarantees of access to the usual and accustomed tribal fishing places and to an equitable share of the harvestable fish. The courts held that states could not qualify the treaty right. In a series of decisions responsive to growing concerns regarding the continued viability of the natural resources in question, however, the Supreme Court affirmed the state's police power to regulate tribal fisheries for conservation purposes where such regulation is necessary to sustain the species. The court stated the following:

> [t]he right to take fish at all usual and accustomed places may, of course not be qualified by the State . . . [b]ut the manner of fishing, the size of the take, the restriction of commercial fishing, and the like may be regulated by the State in the interest of conservation, provided the regulation meets appropriate standards and does not discriminate against Indians (*Puyallup Tribe v. Washington Department of Game* 1968).

In reviewing state conservation regulations, the courts use the conservation necessity principle to ensure that the regulation does not discriminate against the treaty tribe's reserved right to fish, is

reasonable and necessary to preserve and maintain the resource, and the conservation required cannot be achieved by restriction of fishing by non-treaty fishermen or by other less restrictive means or methods (*United States v. Washington* 1974). As defined in these court decisions, conservation is a term of art and has been defined alternatively as "those measures which are reasonable and necessary to the perpetuation of a particular run or species of fish" (*United States v. Washington* 1974) and as "preserving a 'reasonable margin of safety' between an existing level of [salmon] stocks and the imminence of extinction…" (*United States v. Oregon* 1983). Although the courts have imposed limits on the nature of state regulation of treaty fishing, they have also held that "neither the treaty Indians nor the state on behalf of its citizens may permit the subject matter of these treaties to be destroyed" (*United States v. Washington* 1975).

1.2.2.3.2 Federal Regulation

Congress exercises plenary power in the field of Indian affairs. As part of this authority, the United States Supreme Court has consistently held that Congress, through the enactment of laws, has the authority to abrogate or modify the exercise of Indian treaty rights. This includes congressional power to abrogate or modify treaty rights through statutes that address conservation of natural resources. To find abrogation, however, the Supreme Court has required "clear evidence that Congress actually considered the conflict between the intended action on the one hand and Indian treaty rights on the other, and chose to resolve the conflict by abrogating the treaty" (*United States v. Dion* 1986). In *Anderson v. Evans* (2004), the court found that the MMPA applies to the Makah Tribe and constrains its treaty right to harvest whales to ensure that "the conservation goals of the MMPA are effectuated." In holding that the MMPA applied to the Tribe, the court stated that "[w]e need not and do not decide whether the Tribe's whaling rights have been abrogated by the MMPA." The court also noted that "[u]nlike other persons applying for a permit or waiver under the MMPA, the Tribe may urge a treaty right to be considered" during review of the Tribe's request (*Anderson v. Evans* 2004).

1.2.2.4 The Federal Trust Responsibility

The United States and Indian tribes have a unique relationship. From the formation of the United States to the present, federal law has recognized Indian tribes as independent political entities with authority over their members and territory (*Worcester v. Georgia* 1832). The United States Constitution provides Congress with the authority to regulate commerce "among the several states, and with the Indian Tribes" (United States Constitution, Article I, Section 8, clause 3). This power to regulate commerce with Indian tribes includes the exclusive authority to enter into treaties and agreements with Indian tribes regarding their rights to aboriginal lands. Central to

such treaties and agreements in the Pacific Northwest is the reservation of Indian hunting, gathering, and fishing rights both on and off the reservation. These express and implied reservations preserve the inherent rights of the tribe that have not been limited or abrogated by treaty or federal legislation. The federal government has a trust responsibility to protect the treaty hunting, fishing, and gathering rights of Indian tribes.

As described by the Supreme Court, "under a humane and self-imposed policy which found expression in many acts of Congress and numerous decisions of this Court, [the United States] has charged itself with moral obligations of the highest responsibility and trust" (*Seminole Nation v. United States* 1942).

This unique relationship provides the basis for legislation, treaties, and executive orders that grant unique rights or privileges to Native Americans (*Morton v. Mancari* 1974). The trust responsibility requires federal agencies to carry out their activities in a manner that is protective of these express rights *(Gros Ventre Tribe v. United States* 2006). For example, in cases involving the management of Bureau of Reclamation water projects, the court held that the United States must exercise its discretion for the benefit of Indian tribes (*Pyramid Lake Paiute Tribe of Indians v. Morton* 1973; *Klamath Water Users Protective Association v. Patterson* 2000; *Klamath Drainage District v. Patterson* 2000). Courts have also ruled that the United States has an obligation to ensure that tribal oil and gas lessees obtain the best possible return on leases (*Cheyenne Arapaho Tribes of Oklahoma v. United States* 1992) and to consult with the tribes before taking administrative action that may affect tribal services (*Winnebago Tribe of Nebraska v. Babbitt* 1996).

Executive Order 13175 affirms the trust responsibility of the United States and directs agencies to consult with Indian tribes and respect tribal sovereignty when taking action affecting such rights. This policy is also reflected in the March 30, 1995 document, *Department of Commerce-American Indian and Alaska Native Policy* (United States Department of Commerce 1995). NMFS, as an agent of the federal government, has a trust responsibility to Indian tribes (see, for example, Secretarial Order 3206).

1.2.3 Marine Mammal Protection Act

1.2.3.1 Section 2 – General Purposes and Policies

Congress enacted the MMPA to protect and conserve marine mammals and their habitats. Section 2 of the MMPA contains the general purposes and policies of the Act, including congressional findings (16 USC 1361). Congress was concerned that certain marine mammal

species and population stocks were in danger of extinction or depletion, and it intended to establish protections to encourage development of those stocks to the greatest extent feasible, commensurate with sound policies of resource management. Therefore, Congress specified that the primary objective of marine resource management under the MMPA is to maintain the health and stability of the marine ecosystem. Section 2 indicates that stocks should not be permitted to diminish beyond the point at which they cease to be a significant functioning element of the ecosystem, and they should not be permitted to diminish below their optimum sustainable population (OSP) (Section 3.4.2.1, Marine Mammal Protection Act Management).

1.2.3.2 Section 101(a) – Take Moratorium

To achieve the general purposes and policies of Section 2 of the MMPA, Congress established a moratorium on the taking and importing of marine mammals in Section 101(a) (16 USC 1371(a)). Under the MMPA, 'take' means to "harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal" (16 USC 1362(13)). 'Harassment' is defined as follows:

> . . . any act of pursuit, torment, or annoyance which (1) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A Harassment]; or (2) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B Harassment] (16 USC 1362(18)(A)).

This moratorium is not absolute. Statutory exceptions allow marine mammals to be taken for scientific or educational purposes and to be taken incidentally in the course of commercial fishing. A statutory exemption allows take of marine mammals by Alaska Natives for subsistence purposes or to create and sell authentic native articles of handicraft and clothing. The agency may also waive the take moratorium under Section 101(a)(3).

1.2.3.3 Section 101(a)(3)(A) – Waiver of the Take Moratorium

Section 101(a)(3)(A) authorizes and directs the Secretary of Commerce "from time to time" to "determine when, to what extent, if at all, and by what means, it is compatible" with the MMPA "to waive the Section 101(a) take moratorium" (16 USC 1371(a)(3)(A)). NMFS reviews requests to waive the take moratorium on a case-by-case basis, either when a waiver appears appropriate or when a specific proposal is under consideration. NMFS waives the moratorium only with respect to a particular species or stock and then only to the extent provided in the waiver (Bean 1983). As described in Chapter 3, Section 3.17.3.1, Waivers of the MMPA Take Moratorium, the waiver process involves a number of steps, is seldom applied for, and NMFS has not used it many times in its management history.

The following discussion responds to public requests made during the scoping period that NMFS summarize the MMPA procedures for waiving the take moratorium and issuing permits. The primary steps of the MMPA waiver process include (1) initial waiver determination, (2) formal rulemaking on the record (including a hearing before a presiding official, such as an administrative law judge, and proposed regulations), (3) final waiver determination (including final regulations), and (4) permit process. Preparation of this EIS is the first step in a full evaluation of the Makah's request to hunt gray whales; it will aid NMFS in future decisions related to the MMPA (and WCA, discussed in Section 1.2.4, Whaling Convention Act).

1.2.3.3.1 Step 1 – Initial Waiver Determination

NMFS' Northwest Regional Administrator has the delegated authority in this case to make the initial waiver determination. Section 101(a)(3)(A) of the MMPA contains provisions related to the waiver determination. Any waiver determination must fulfill the following criteria:

1. Be based on the best scientific evidence available
2. Be made in consultation with the Marine Mammal Commission
3. Have due regard to the distribution, abundance, breeding habits, and times and lines of migratory movements of the marine mammal stock in question for take
4. Find that the taking is in accord with sound principles of resource protection and conservation as provided in the purposes and policies of the MMPA (Section 2)

Based on these Section 101(a)(3)(A) criteria, the Regional Administrator will make an initial determination whether to waive the moratorium. If the agency ultimately decides not to waive the take moratorium, it would make that decision publicly available in the Federal Register. If the Regional Administrator makes an initial determination to waive the take moratorium, he would propose regulations to govern any take under Section 103. Section 103(a) specifies that regulations must be "necessary and appropriate to [e]nsure that taking will not be to the disadvantage of [the ENP gray whale stock] and will be consistent with the purposes and policies [of the MMPA in Section 2]" (16 USC 1373(a)).

Section 103(b) requires the agency to consider the effect of such regulations on the following:

- Existing and future levels of marine mammal species and population stocks
- Existing international treaty and agreement obligations of the United States
- The marine ecosystem and related environmental considerations

- The conservation, development, and utilization of fishery resources (not applicable in this case)
- The economic and technological feasibility of implementation

Section 103(c) of the MMPA lists allowable restrictions that regulations may include for takes of marine mammals such as the number, age, size, and sex of animals taken, as well as the season, manner, location, and fishing techniques that may be used (for marine mammals caught in fishing gear incidental to fishing activities). Any regulations would be subject to periodic review and modification to carry out the purposes of the MMPA (16 USC 1373(e)).

1.2.3.3.2 Step 2 – Formal Rulemaking on the Record

A preliminary determination to waive must be made on the record after opportunity for an agency hearing; this is a formal rulemaking process detailed in agency regulations at 50 CFR Part 228. Under these provisions, the agency would appoint an officer to preside over the hearing (presiding official). The agency would also publish a notice of hearing in the Federal Register regarding the proposed waiver and proposed regulations.

Among other things, the notice would state the place and date for both a pre-hearing conference and the hearing itself; it would detail how and when to submit direct (written) testimony on the proposed waiver and proposed regulations and how and when to submit a notice of intent to participate in the pre-hearing conference and hearing.

In the notice of hearing, NMFS would also specifically publish the following (among other things):

- The proposed waiver and proposed regulations
- The Regional Administrator's original direct testimony in support of the proposed waiver and proposed regulations (additional direct testimony may be submitted at later times)
- A summary of the statements required by Section 103(d) of the MMPA, including the following:
  - Estimated existing levels of gray whales
  - Expected impact of the proposed regulations on the OSP of the gray whale stock
  - Description of the evidence before the Regional Administrator upon which the proposed regulations would be based
  - Any studies made by or for the Regional Administrator or any recommendations made by or for the agency or the Marine Mammal Commission that relate to the establishment of the proposed regulations

- Issues that may be involved in the hearing
- Any written advice received from the Marine Mammal Commission

The presiding official would examine direct testimony and make a preliminary determination related to the testimonial evidence received. NMFS would make the presiding official's preliminary determination available to the public. After the subsequent pre-hearing conference, the presiding official would decide whether a hearing was necessary. Should the presiding official determine that a hearing was not necessary, the official would publish that conclusion in the Federal Register and solicit written comments on the proposed regulations. After analyzing written comments received, the presiding official would transmit a recommended decision to the NMFS Assistant Administrator.

If, however, the presiding official determined that a hearing was necessary, the official would publish a final agenda for the hearing in the FR within 10 days after the conclusion of the pre-hearing conference. The agenda would list the issues for consideration at the hearing and the parties and witnesses to appear, as well as soliciting direct testimony on issues not included in the notice of hearing. The hearing would then occur at the time and place specified in the notice of hearing, unless the presiding official made changes. The hearing would be a court-like proceeding where witnesses would present direct testimony and be subject to cross-examination from parties (or counsel); oral arguments from the parties (or counsel) might also be given to the presiding official. Interested persons would have another opportunity to comment in writing. After the period for receiving these written briefs expired, the presiding official's recommended decision would be transmitted to NMFS' Assistant Administrator.

1.2.3.3.3 Step 3 – Final Waiver Determination

Once the NMFS Assistant Administrator received the presiding official's recommended decision, the agency would publish notice of availability in the Federal Register, send copies of the recommended decision to all parties, and provide a 20-day written comment period. At the close of the 20-day written comment period, the NMFS Assistant Administrator would make a final decision on the proposed waiver and proposed regulations. The final decision may affirm, modify, or set aside (in whole or part) the recommended findings, conclusions, and decision of the presiding official. NMFS would publish the decision in the Federal Register, including a statement containing the history of the proceeding, findings, and rationale on the evidence, as well as rulings. If NMFS' Regional Administrator approved the waiver, the agency would promulgate the final adopted regulations with the decision.

1.2.3.3.4 Step 4 – Permit Authorizing Take

Section 104 of the MMPA governs NMFS' issuance of permits authorizing the take of marine mammals. The agency must publish notice of each application for a permit in the Federal Register and invite the submission of written data or views from interested parties with respect to the taking proposed in the application within 30 days after the date of the notice (16 USC 1374(d)(2)). The applicant for the permit must demonstrate that the taking of any marine mammal under such permit will be consistent with the purposes and policies of the MMPA and the applicable regulations established under MMPA Section 103.

If an interested party requests a hearing in connection with the permit within 30 days of publication of the notice, NMFS may afford an opportunity for a hearing within 60 days of the date of the published notice (16 USC 1374(d)(3)). Any applicant for a permit or any party opposed to a permit may obtain judicial review of agency's terms and conditions included the permit, or of the agency's refusal to issue a permit (16 USC 1374(d)(4)). A permit issued under MMPA Section 104 (16 USC 1374(b)) must be consistent with applicable regulations and must specify the following:

- The number and kinds of animals authorized to be taken
- The location and manner (which NMFS must determine to be humane) in which they may be taken
- The period during which the permit is valid
- Other terms or conditions that NMFS deems appropriate

The MMPA defines 'humane' as "that method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved" (16 USC 1362(4)).

1.2.3.4 Application of the MMPA to Makah Whaling

The Court of Appeals for the Ninth Circuit has twice reviewed Makah proposals to exercise the treaty right to hunt gray whales. In the most recent decision, the court held that the permit and waiver provisions of the MMPA must be satisfied before NMFS can authorize the hunt (*Anderson v. Evans* 2004). Relying on the "principles embedded in the Treaty of Neah Bay, itself," the court framed the issue for decision as "whether restraint on the Tribe's whaling pursuant to treaty rights is necessary to effectuate the conservation purpose of the MMPA" (*Anderson v. Evans* 2004). The court defined the conservation purpose of the MMPA as "to ensure that marine mammals continue to be

significant functioning element[s] in the ecosystem" and not "diminish below their optimum sustainable population" (*Anderson v. Evans* 2004).

Specifically, the court stated the following:

> . . . [t]o carry out these conservation objectives, the MMPA implements a sweeping moratorium in combination with a permitting process to ensure that the taking of marine mammals is specifically authorized and systematically reviewed. For example, the MMPA requires that the administering agency consider "distribution, abundance, breeding habits, and times and lines of migratory movements" when deciding the appropriateness of waiving requirements under the MMPA, 16 USC. Section 1371 (a)(3)(A). And, when certain permits are issued, the permit may be suspended if the taking results in "more than a negligible impact on the species or stock concerned" (16 USC Section 1371 (a)(5)(B)(ii)). One need only review Congress's carefully selected language to realize that Congress's concern was not merely with survival of marine mammals, though that is of inestimable importance, but more importantly with ensuring these that these mammals maintain and remain significant functioning elements in the ecosystem. The MMPA's requirements for taking are specifically designed to promote such objectives. Without subjecting the tribe's whaling to review under the MMPA, there is no assurance that the takes by the tribe of gray whales, including both those killed and those harassed without success, will not threaten the role of gray whales as functioning elements of the marine ecosystem, and thus no assurance that the purposes of the MMPA will be effectuated (*Anderson v. Evans* 2004).

Additionally, the court stated the following:

> . . . [h]ere the purpose of the MMPA is not limited to species preservation. Whether the Tribe's whaling will damage the delicate balance of the gray whales in the marine ecosystem is a question that must be asked long before we reach the desperate point where we face a reactive scramble for species preservation. (*Anderson v. Evans* 2004).

The court found these principles "embedded in the Treaty of Neah Bay" and Supreme Court precedents and stated the following:

> . . . [j]ust as treaty fisherman are not permitted to totally frustrate . . . the rights of non-Indian citizens of Washington to fish . . . the Makah cannot consistent with the plain terms of the treaty, hunt whales without regard to processes in place and designed to advance conservation values by preserving in marine mammals or to engage in whale watching, scientific study, and other non-consumptive uses. (*Anderson v. Evans* 2004).

The court noted that in requiring compliance with the MMPA, "we do not purport to address what limitations on the scope of a permit, if any is issued, would be appropriate." Further, in recognition of the Tribe's unique status the court stated, "[u]nlike other persons applying for a permit or waiver under the MMPA, the Tribe may urge a treaty right to be considered in the NMFS's review of an application by the Tribe under the MMPA" (*Anderson v. Evans* 2004). The

Makah Tribe has informed NMFS that it believes that the Treaty of Neah Bay bars NMFS from denying the Tribe's MMPA application where tribal whaling can be accomplished in a manner consistent with the conservation purposes of the MMPA. According to the Tribe, this means that the whaling would not cause the ENP stock of gray whales to fall below its optimum sustainable population or to cease to be a significant functioning element of the marine ecosystem (Makah Tribe 2005a; Makah Tribe 2006a). Furthermore, the Tribe contends that NMFS may not impose restrictions on the exercise of the Tribe's whaling right, beyond those the Tribe itself proposed in its MMPA waiver and permit application, unless NMFS shows such restriction to be necessary to achieve the MMPA's conservation purpose (Makah Tribe 2005a; Makah Tribe 2006a). The Tribe believes that its application is conservative and fully consistent with the conservation purpose of the MMPA (Makah Tribe 2005a; Makah Tribe 2006a).

1.2.4 Whaling Convention Act

Congress enacted the WCA to implement the domestic obligations of the United States government under the International Convention for the Regulation of Whaling (ICRW). This EIS analyzes NMFS' domestic authority and responsibilities under the WCA, but it does not analyze the position of the United States as a political body in the international arena. The EIS does, however, describe international whaling governance under the ICRW to provide context for the WCA statutory and regulatory framework and particularly to address issues raised in public comments.

1.2.4.1 International Whaling Governance under the ICRW

The ICRW is an international treaty signed on December 2, 1946, to "provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry" (ICRW, Dec. 2, 1946, 161 United Nations Treaty Series 72). The United States was an original signatory to the ICRW in 1946. A focus of the ICRW was the establishment of the IWC. Functions and operating procedures of the IWC, the IWC's moratorium on commercial whaling, aboriginal subsistence whaling under the IWC, and the United States' preparation for the IWC, are described below.

1.2.4.1.1 Functions and Operating Procedures of the IWC

The IWC is an international organization whose membership consists of one commissioner from each contracting government. Under Article V.1 of the ICRW, the IWC's charge is to adopt regulations for the conservation and utilization of whale resources by periodically amending the

Schedule, a document that is an integral part of the ICRW. IWC regulations adopted in the Schedule may do the following:

- Designate protected and unprotected species
- Open and close seasons and waters
- Implement limits on the size of whales taken, and on the time, method, and intensity of whaling
- Specify gear, methods of measurement, catch returns and other statistical and biological records, and methods of inspection for the stocks of large cetaceans under IWC jurisdiction (i.e., baleen and sperm whales)

The IWC seeks to reach consensus on Schedule amendments. When consensus is not possible, a three-fourths majority of all who voted may amend the Schedule (each contracting government has one vote).

Article V.2(b) of the ICRW specifies that amendments to the Schedule must be based on scientific findings. The IWC established the Scientific Committee, consisting of approximately 200 of the world's leading whale biologists, to provide advice on the status of whale stocks. The Scientific Committee meets annually in the two weeks immediately preceding the main IWC meeting. It may also call special meetings as needed to address particular subjects during the year.

Article V.3 of the ICRW governs the procedure for amending the Schedule, including application of IWC whaling regulations. In general, amendments to the Schedule are effective 90 days after the IWC notifies each contracting government of the amendment, unless a contracting government objects. If an objection occurs, the objector and other contracting governments have a certain period to present objections to the IWC. After that period expires, the amendment is effective with respect to all contracting governments that have not presented objections, but it is not effective for the objector(s) until the objection is withdrawn. A contracting government may use this procedure when it considers its national interests or sovereignty unduly affected.

1.2.4.1.2 IWC Commercial Whaling Moratorium

The IWC initially focused on regulation of the commercial whaling industry. In 1982, the IWC approved a moratorium on all commercial whaling in paragraph 10(e) of the Schedule, effectively expanding the 1937 ban on commercial harvest of gray whales and right whales to all large whale species. The commercial whaling moratorium is still in place for all non-objecting parties. Iceland, Norway, and the Russian Federation lodged objections that are currently effective, so the

moratorium does not apply to those countries. Paragraph 10(e) also states that the commercial whaling moratorium "will be kept under review, based upon the best scientific advice," and that "the [IWC] will undertake a comprehensive assessment of the effects of [the commercial whaling moratorium] on whale stocks and consider modification of this provision and the establishment of other catch limits" (IWC Schedule 2006). The IWC has been developing a revised management scheme (a management plan for commercial whaling) for the last several years, but has made little progress on its adoption. There is active debate at the IWC about the sustainability of whale stocks, the appropriateness of maintaining the ban on all commercial whaling, and the type and level of supervision of commercial whaling should it resume.

1.2.4.1.3 IWC Aboriginal Subsistence Whaling

The IWC recognizes a distinction between whaling for commercial purposes and whaling by aborigines for subsistence purposes — aboriginal exceptions were incorporated into predecessor treaties to the ICRW and have been a part of the whaling regime under the ICRW since the time of the first Schedule (as used in this EIS, the term 'aborigines' refers to indigenous peoples). The IWC governs aboriginal subsistence whaling by setting catch limits for certain whale stocks in the Schedule, after considering requests from contracting governments and/or after consulting with the Scientific Committee. The first gray whale catch limits were set in 1979. When contracting governments make requests to the IWC to set catch limits in the Schedule, they are acting on behalf of aborigines in their respective nations, and they submit a proposal to the IWC based on cultural and nutritional needs documented in a needs statement). At the 1994 annual meeting, the IWC formally adopted Resolution 1994-4 to reaffirm three broad objectives for evaluating such requests from contracting governments:

- To ensure that the risks of extinction to individual stocks are not seriously increased by subsistence whaling
- To enable aboriginal people to harvest whales in perpetuity at levels appropriate to their cultural and nutritional requirements, subject to the other objectives
- To maintain the status of whale stocks at or above the level giving the highest net recruitment and to ensure that stocks below that level are moved towards it, so far as the environment permits

The IWC sets catch limits for each whale stock generally in five-year increments and subject to annual review. These catch limits are contained in paragraph 13 of the Schedule. The WCA defines aboriginal subsistence whaling as whaling authorized by paragraph 13 of the Schedule annexed to and constituting a part of the ICRW (50 CFR 230.2). The Schedule does not otherwise

define aboriginal subsistence whaling, but delegates adopted the following definition of subsistence use by consensus at the 2004 annual meeting of the IWC:

- The personal consumption of whale products for food, fuel, shelter, clothing, tools, or transportation by participants in the whale harvest.
- The barter, trade, or sharing of whale products in their harvested form with relatives of the participants in the harvest, with others in the local community or with persons in locations other than the local community with whom local residents share familial, social, cultural, or economic ties. A generalized currency is involved in this barter and trade, but the predominant portion of the products from each whale are ordinarily directly consumed or utilized in their harvested form within the local community.
- The making and selling of handicraft articles from whale products, when the whale is harvested for the purposes defined in (1) and (2) above.

General principles governing aboriginal subsistence whaling are contained in paragraph 13(a) of the Schedule, and specific catch limits for aboriginal subsistence use are set under paragraph 13(b) of the Schedule. Paragraph 13(a) of the current Schedule includes the 13(a)(4) prohibition on the "strik[ing], tak[ing] or kill[ing] calves or any whale accompanied by a calf," and the 13(a)(5) requirement that "all aboriginal whaling shall be conducted under national legislation that accords with paragraph 13 of the Schedule" (IWC Schedule 2006). Paragraph 13(a)(5) is a recent modification to the Schedule, adopted by consensus during the 2004 IWC plenary session. The language was moved from the more specific provisions in 13(b) to the more general provisions in 13(a). The modification is consistent with Article V.2(c) of the ICRW, which specifies that the IWC may not set catch limits for any particular nationality (e.g., specified native peoples) or group of whalers (i.e., individual whaling operations). Native peoples engaging in subsistence hunts do so under permit issued by their governments. In the United States, the WCA provides the mechanism for implementing the catch limits set in the IWC Schedule.

Paragraph 13(b) of the current schedule (IWC Schedule 2007) sets the following catch limits for 2008 through 2012:

- Aborigines taking bowhead whales from the Bering-Chukchi-Beaufort Seas stock (paragraph 13(b)(1))
- Aborigines, or a Contracting Government acting on behalf of aborigines, taking gray whales from the Eastern stock in the North Pacific (paragraph 13(b)(2))

- Aborigines taking minke whales from the West Greenland and Central stocks, fin whales from the West Greenland stock, and bowhead whales from the West Greenland feeding aggregation[1] (paragraph 13(b)(3))
- The Bequians of St. Vincent and the Grenadines taking humpback whales (Explanatory Notes to the Schedule indicate that the 'Bequians' are specifically named in paragraph 13(b)(4) for geographical purposes alone, so as not to be in contravention of Article V.2(c) of the ICRW, which prohibits naming of particular groups of whalers)

Paragraph 13(b)(2) sets a catch limit of 620 ENP gray whales, limited to 140 whales per year (reviewable annually by the IWC and its Scientific Committee), to "aborigines or a Contracting Government on behalf of aborigines . . . only when the meat and products of such whales are to be used exclusively for local consumption and distribution." The IWC set this catch limit for the ENP gray whale stock after receiving and considering a joint request from the United States and the Russian Federation to revise such a catch limit in the Schedule. By a bilateral agreement between the United States and the Russian Federation, the ENP gray whale catch limit is allocated as 20 whales (up to five per year) for the Makah, and 600 whales (up to 135 per year) for the Chukotka Natives. The IWC does not have a formal definition of aboriginal use of whale products for 'local consumption and distribution.' NMFS interprets the IWC's 2004 'subsistence use' definition and the current Schedule regarding local distribution as proposed by the Makah to mean that the Makah could share whale products from any hunt within the borders of the United States with the following:

- Relatives of participants in the harvest
- Others in the local community (both non-relatives and relatives)
- Persons in locations other than the local community with whom local residents share familial, social, cultural, or economic ties

1.2.4.1.4 United States' IWC Interagency Consultation

The United States, as a contracting government to the ICRW, recognizes the IWC as the global organization with the authority to manage whaling. The United States negotiating positions at the IWC are advanced by the United States Commissioner to the IWC; the United States Commissioner is appointed by the President and serves at his pleasure. The United States Commissioner is not a federal agency. Negotiating positions advocated by the United States

[1] The annual quota from this feeding aggregation shall only become operative when the Commission has received advice from the Scientific Committee that the strikes are unlikely to endanger the stock. (paragraph 13 (b)(3) (iv).

Commissioner on behalf of the United States are not final agency actions; these positions may change during the negotiations. The United States' negotiating positions advocated before the IWC, moreover, may or may not be adopted by the IWC, and any attempt to analyze effects on the human environment would be speculative.

The United States nevertheless conducts both an internal and public review of whaling issues before making any requests to revise catch limits in the Schedule. When the United States receives a request (needs statement) from a Native American tribe to whale for subsistence purposes, NOAA's Office of International Affairs, the United States Commissioner to the IWC, and the Department of State first review the needs statement. The United States Commissioner may also consult with other federal agencies as appropriate. Before each annual IWC meeting, the United States Commissioner presents the draft United States position on whaling issues, including proposals to revise aboriginal subsistence whaling catch limits, to the public at the IWC Interagency Committee meeting. These interagency meetings take place at least once a year in the Washington D.C. area, and they are open to any United States citizen with an interest in whaling, except for individuals representing foreign interests. Representatives of environmental and animal rights groups, Native American groups, sustainable use groups, and other concerned citizens typically attend. When relevant, Makah whaling issues have been discussed at public IWC Interagency meetings since May of 1995. In each case, attendees have reviewed and commented on the draft United States position at the IWC related to requesting revisions of catch limits in the Schedule.

1.2.4.2 National Whaling Governance under the WCA

1.2.4.2.1 United States' Acceptance or Rejection of IWC Regulations

Congress enacted the WCA to implement the domestic obligations of the United States under the ICRW. Under Section 916b of the WCA, the Secretary of State (with concurrence by the Secretary of Commerce) has the vested power to present or withdraw objections to regulations of the IWC on behalf of the United States as a contracting government. See Section 1.2.4.1.1, Functions and Operating Procedures of the IWC, for more information.

1.2.4.2.2 National Prohibition of Commercial Whaling

The United States was a party to the 1937 Agreement that banned commercial whaling of gray whales. The United States was also instrumental in urging the IWC to adopt the 1982 moratorium on commercial whaling of all species (commercial whaling of all species in the United States has

been prohibited nationally since 1971). The United States remains opposed to commercial whaling.

1.2.4.2.3 National Aboriginal Subsistence Whaling

The Secretary of Commerce holds general powers, currently delegated to NMFS, to administer and enforce whaling in the United States, including adoption of necessary regulations to carry out that authority. The regulations prohibit whaling, except for aboriginal subsistence whaling, which is defined as "whaling authorized by paragraph 13 of the [IWC] Schedule" (50 CFR 230.2). NMFS publishes aboriginal subsistence whaling quotas set in accordance with paragraph 13 of the Schedule in the Federal Register, together with any relevant restrictions, and incorporates them into cooperative management agreements with tribes (50 CFR 230.6(a)).

NMFS may not necessarily publish a quota, even where an IWC catch limit is set for a particular stock. In 2000 and 2001, for instance, NMFS did not publish available quotas for ENP gray whales for the Makah during portions of the 1998 through 2002 five-year period due to litigation (nor has NMFS issued a quota for the 2008 quota period). To authorize the proposed Makah whale hunting, NMFS would have to publish an aboriginal subsistence whaling quota in the Federal Register annually for the Makah's use. NMFS would also have to enter into a cooperative management agreement with the Makah Tribe. Publication of any of the quota for 2008 through 2012, as well as consideration of any cooperative management agreement with the Tribe, is contingent upon completion of this NEPA review and the MMPA formal rulemaking procedures described above. Any published quotas are allocated to each whaling village or tribal whaling captain by the appropriate Native American whaling organization (entities recognized by NMFS as representing and governing the relevant Native American whalers for the purposes of cooperative management of aboriginal subsistence whaling).

WCA regulations track the IWC provisions that prohibit whaling of any calf or whale accompanied by a calf (50 CFR 230.4(c)). They also prohibit any person from selling or offering for sale whale products from whales taken in aboriginal subsistence hunts, except that authentic articles of native handicrafts may be sold or offered for sale (50 CFR 230.4(f)). Regulations also require that whaling not be conducted in a wasteful manner (50 CFR 230.4(k)), which means a method of whaling that is not likely to result in the landing or a struck whale or that does not include all reasonable efforts to retrieve the whale (50 CFR 230.2).

The WCA and its implementing regulations require licensing and reporting. No one may engage in aboriginal subsistence whaling except a whaling captain or a crewmember under the whaling captain's control. Whaling captains are identified by the relevant Native American whaling organization, which must provide evidence or an affidavit that the whale catcher (i.e., vessel) is adequately supplied and equipped and has an adequate crew (WCA Section 916d(d)(1) and 50 CFR 230.4(d)). The license may be suspended if the whale captain fails to comply with WCA regulations (50 CFR 230.5(b)). If any tribe salvages a stinker (a dead, unclaimed whale found upon a beach, stranded in shallow water, or floating at sea, 50 CFR 230.2), it must provide NMFS with an oral or written report describing the circumstances of the salvage within 12 hours of the event (50 CFR 230.7). No person may receive money for participation in aboriginal subsistence whaling (WCA Section 916d(d) as implemented through 50 CFR 230.4(e)). The whaling captain and Native American whaling organization are also responsible for reporting the number, dates, and locations of strikes, attempted strikes, or landings of whales, including certain data from landed whales, to NMFS (50 CFR 230.8).

1.2.4.3 Application of the WCA to Makah Whaling

The United States seeks IWC approval of an appropriate catch limit before authorizing any authorization of aboriginal subsistence whaling under the WCA (NMFS 2001a).

The Makah Tribe believes that the United States' obligation to the Makah Tribe takes precedence over United States obligations under the ICRW (Makah Tribe 2005a). Although the Makah Tribe does not believe that the Makah subsistence harvest requires IWC approval, the Tribe has worked cooperatively with the United States government to obtain that approval. At the IWC's annual meeting held in May 2007, the IWC approved by consensus an aboriginal subsistence whaling catch limit of 620 gray whales for the 2008 through 2012 five-year period, limited to a maximum of 140 takes (i.e., lethal takes) per year. The catch limit was based on the joint request of the United States and the Russian Federation. A bilateral agreement between the United States and the Russian Federation allocates the catch limit for the stock as follows: 20 whales over the five-year period, with a maximum of five whales per year, on behalf of the Makah, and 600 whales over the five-year period, with a maximum of 135 whales per year, on behalf of the Chukokta Natives. The United States currently holds the aboriginal subsistence whaling quota for the ENP gray whale stock on behalf of the Makah, but NMFS has not published it in the Federal Register due to the pending regulatory processes described in this EIS.

1.3 Purpose and Need for Action

1.3.1 Purpose for Action

The purpose for this action is for NMFS to respond to the Makah's request to hunt ENP gray whales for ceremonial and subsistence purposes. If NMFS authorizes the Makah to hunt gray whales, the combined regulatory actions (i.e., MMPA waiver of the take moratorium, promulgation of regulations, and issuance of any necessary permits, plus WCA publication of a quota and execution of a cooperative management agreement) would authorize the Makah to kill up to an approved number of gray whales that would not exceed any annual or five-year IWC catch limits. The Makah Tribe's purpose is to resume its traditional hunting of gray whales under its treaty right. Chapter 2, Alternatives, contains additional details of the proposed action.

1.3.2 Need for Action

The need for this action is for NMFS to address federal trust responsibilities to the Makah, particularly with respect to the Tribe's reserved whaling rights under the Treaty of Neah Bay, and to comply with the requirements of the MMPA and the WCA. Under the MMPA, NMFS must protect and conserve the gray whale population; under the WCA, the agency must regulate whaling in accordance with the ICRW and IWC regulations. The Makah's need for the action is to exercise its treaty whaling rights to provide a traditional subsistence resource to the community and to sustain and revitalize the ceremonial, cultural, and social aspects of its whaling traditions.

1.3.3 Decisions to be Made

NMFS is conducting this environmental review under NEPA as a first step in the full evaluation of the Makah's proposal to hunt gray whales. This EIS evaluates the effects of the proposed action and five alternative actions (including the No-action alternative) on the human (including social and biological) environment, as well as suitable mitigation measures. By examining the impacts of the proposed action and a full range of alternatives, the EIS will provide information key to making decisions relevant to the Tribe's proposed action, such as the following:

- Degree of conservation impacts to the gray whale population and the local marine ecosystem
- Degree of impacts to the Makah Tribe
- Degree of other impacts to the local environment, such as public safety, aesthetics, public sentiment regarding whales, and tourism/whale-watching

1.4 Background and Context

1.4.1 Summary of Aboriginal Subsistence Whaling Catch Limits

1.4.1.1 Worldwide Catch Limits

Before 1976, the IWC provided a blanket exemption for aboriginal subsistence whaling. Since 1976 (and 1979 for gray whales), the relevant provisions of the IWC Schedule addressing aboriginal subsistence whaling are in paragraph 13. Paragraph 13(a)(5), in particular, provides that "all aboriginal whaling shall be conducted under national legislation that accords with this paragraph." The IWC has regulated aboriginal subsistence whaling through catch limits set under paragraph 13(b) of the Schedule. These limits include the following stocks:

- Bering-Beaufort-Chuckchi Seas stock of bowhead whales (the stock of interest to Alaska Natives and Chukotka Natives under management control of the United States and the Russian Federation, respectively)
- ENP gray whale stock (the stock of interest to the Makah Tribe and Chukotka Natives under management control of the United States and the Russian Federation, respectively)
- West Greenland and Central Stocks of minke whales, West Greenland stock of fin whales and a West Greenland bowhead feeding aggregation (stocks of interest to the Greenlanders under control of Denmark)
- North Atlantic humpback whales (stocks of interest to the Bequians, under control of St. Vincent and the Grenadines)

Canada's First Nation members have also harvested bowhead whales, but they are not currently operating under IWC catch limits set in the Schedule, because Canada is not a party to the ICRW. Maa-Nulth First Nations on Vancouver Island made an agreement with the Canadian government in December 2006 to forgo their traditional right to hunt gray whales for at least 25 years, in exchange for land, a share of mineral and timber resources on that land, and a cash settlement (CBC News 2006; Indian and Northern Affairs 2006).

Chapter 3.17.3.2.3, Aboriginal Subsistence Whaling, provides more detail about aboriginal subsistence whaling, including the contracting governments' reported number of whales harvested.

1.4.1.2 United States Catch Limits

The United States has requested that the IWC revise catch limits in the Schedule on behalf of two native groups: the Alaska Eskimos and the Makah Tribe. The Eskimos and the Makah are the only two native groups in the United States that have asked the government to request revisions to

catch limits in the Schedule from the IWC on their behalf. The Eskimos, as Alaska Natives, are exempt from the MMPA take moratorium under Section 101(b), and the Makah hold the only treaty right referring expressly to whaling.

1.4.1.2.1 Relevant Overview of Requests for Bowhead Whales on Behalf of Alaska Eskimos

Relevant information about United States' requests for bowhead whale catch limits on behalf of the Alaska Eskimos is presented here, because the history gives context to the current IWC process described above in Section 1.2.4.1.3, IWC Aboriginal Subsistence Whaling. Like Makah hunting of gray whales, Eskimos have hunted bowhead whales as an important species for subsistence and for social and cultural purposes for at least 2,000 years (Stoker and Krupnik 1993). Hunting bowhead whales in Alaska remains a communal activity that supplies meat and 'maktak' (whale skin and layer of blubber that is used for food) for the entire community, as well as for feasts and during annual celebrations. Formalized patterns of hunting, sharing, and consumption characterize the modern bowhead hunt. The bowhead hunt is the principal activity through which younger generations learn traditional skills for survival in the Arctic. It also provides ongoing reinforcement of the traditional social structure. In addition to being a major source of food, the bowhead subsistence hunt is a large part of the cultural tradition of these communities and helps define their modern cultural identity (Braund et al. 1997).

Since 1976, the United States, on behalf of the Alaska Eskimos, has requested that the IWC revise the bowhead catch limits in the Schedule, and the IWC has set catch limits for the bowhead whale stock in the Schedule after considering the nutritional and cultural need for bowhead whales by Alaska Eskimos and the level of harvest that is sustainable. The United States and the Russian Federation share a quota based on the IWC catch limits for the Western Arctic bowhead stock, approved at the annual meeting of the IWC in June of 2007 for the 2008 through 2012 five-year period. The catch limit is allocated between the United States and the Russian Federation through a bilateral agreement.

Due to some controversy and negotiations about appropriate catch limits for Alaska Eskimo bowhead hunts in 1977 and 1978, a meeting of experts on wildlife science, nutrition, and cultural anthropology convened in Seattle from February 5 to 9, 1979 (the experts in cultural anthropology convened for this meeting were known as the Cultural Anthropology Panel). Their charge was to examine the Alaska Eskimo bowhead harvest, provide data, and develop them for an IWC Technical Committee examining the aboriginal subsistence whaling processes. The Cultural Anthropology Panel at that meeting developed a working definition of subsistence use

(IWC 1979a), a term not defined in the ICRW or the Schedule. Delegates to the 2004 annual meeting of the IWC subsequently adopted the working definition of subsistence use by consensus (Section 1.2.4.1.3, IWC Aboriginal Subsistence Whaling). A subsequent working group convened in 1981 (the *Ad Hoc* Technical Working Group on Development of Management Principles and Guidelines for Subsistence Catches of Whales by Indigenous [Aboriginal] Peoples) agreed to the following working definition of aboriginal subsistence whaling and related concepts (IWC 1982):

- *Aboriginal subsistence whaling* means whaling, for purposes of local aboriginal consumption carried out by or on behalf of aboriginal, indigenous, or native peoples who share strong community, familial, social and cultural ties related to a continuing traditional dependence on whaling and the use of whales.
- *Local aboriginal consumption* means that traditional uses of whale products by local aboriginal, indigenous or native communities in meeting their nutritional, subsistence and cultural requirements. The term includes trade in items which are by-products of subsistence catches.
- *Subsistence catches* are catches of whales by aboriginal subsistence whaling operations.

While the IWC has not formally adopted the 1981 Ad Hoc Technical Working Group's definition of aboriginal subsistence whaling, it did adopt a definition of subsistence use in 2004 (Section 1.2.4.1.3, IWC Aboriginal Subsistence Whaling). The same 1981 Ad Hoc Technical Working Group also developed three broad objectives for the IWC to use when evaluating aboriginal subsistence whaling proposals from contracting governments. The IWC did formally adopt these three principles in Resolution 1999-4, detailed above in Section 1.2.4.1.3, IWC Aboriginal Subsistence Whaling.

1.4.1.2.2 Overview of Requests for ENP Gray Whales on Behalf of the Makah

On May 5, 1995, approximately a year after the ENP gray whale was removed from the endangered species list, the Makah Tribal Council formally notified NMFS of its interest in reestablishing ceremonial and subsistence hunts for gray whales (Makah Tribal Council 1995a). The Tribe anticipated harvesting only one or two whales initially, but included five as the maximum extent of the yearly harvest, if it determined that it could use additional whales effectively and allocate them to each of five ancestral villages (Makah Tribal Council 1995a). The Makah agreed not to sell whale meat commercially, developed a comprehensive needs statement, and entered into a cooperative management agreement with NMFS to manage the whale hunt. At the 1995 annual meeting of the IWC, the United States did not request that the

IWC revise the Schedule to set a catch limit for the ENP gray whale stock, but informed the IWC that it intended to submit a formal proposal on the Makah's behalf in the future (IWC 1996).

At the annual meeting of the IWC in 1996, the United States acted on the Makah's behalf and made a request that the IWC revise the Schedule to set a catch limit for the ENP gray whale stock, requesting up to five ENP gray whales per year from 1997 through 2000. At both the Aboriginal Subsistence Whaling Subcommittee and IWC plenary meetings, many delegates supported the United States' request. Other delegates indicated they would vote against the proposal. One reason given for this opposition was that the United States did not ask the Russian Federation to share the existing 1995 to 1997 catch limit of 140 ENP gray whales per year, which was based on the cultural and nutritional needs of the Chukotka Natives (IWC 1997; 63 FR 16701, April 6, 1998). Instead, the United States adhered to a prior position that each contracting government requesting a revision to the Schedule for aboriginal subsistence whaling catch limits must submit its own proposal before the IWC (IWC 1997; 63 FR 16701, April 6, 1998). Opponents noted that granting the United States request would increase the total ENP gray whale catch limit beyond what had already been set by the IWC in paragraph 13(b)(2) of the Schedule (IWC 1997). At the 1996 meeting, the Russian Federation had also requested a catch limit of five bowhead whales a year, but withdrew its request when a consensus could not be reached among delegates. The bowhead stock catch limit was already set for the United States and was not shared with Russia (IWC 1997).

Another reason for the opposition was that some delegates questioned whether the Makah had a "continuing traditional dependence" on whaling (IWC 1997), a component of the working definition for aboriginal subsistence whaling developed by the 1981 Ad Hoc Technical Working Group (Section 1.4.1.2.1, Relevant Overview of Requests for Bowhead Whales on Behalf of Alaska Eskimos). The delegates noted that the Makah had not hunted gray whales since the 1920s (IWC 1997). United States delegates and Makah representatives responded that the Makah Tribe had continued aspects of its whaling tradition through names, dance, songs, and other cultural traditions (IWC 1997; United States 1996). The United States also noted that nutritional need is a factor in considering and setting aboriginal subsistence whaling catch limits, but not a threshold requirement. United States delegates used the example of the IWC setting a catch limit for the bowhead stock for many years after considering the United States' requests on behalf of the Alaska Eskimos, even though the Nutrition Panel at the 1979 workshop for aboriginal subsistence whaling of bowhead concluded that nutritional needs of Eskimos could be met through local subsistence or western-type foods (IWC 1979b; United States 1996). Moreover, the Makah needs

statement (Renker 1996) had demonstrated a continued subsistence reliance on traditional marine foods available to the Makah, and a nutritional need based on poverty and economic conditions on the Makah Reservation (Renker 1996; United States 1996). The United States noted that federal agents in the last five decades had actively prevented Makahs from consuming and utilizing whales that drifted onto Makah beaches, by burying or burning the drift whales and by threatening Makah members who tried to access the products with jail and other federal sanctions (United States 1996). As late as the 1970s, federal agents were still entering Makah households and searching freezers for the presence of marine mammal products (United States 1996). Attendees of the 1996 meeting were also aware of other conflict regarding the Makah's proposal to hunt; the United States House of Representatives Committee on Resources had unanimously passed a resolution expressing opposition to the Makah hunt (United States Congress 1996), and some members of the Makah Tribe testified against the United States proposal at the IWC meeting. The United States made a statement in appreciation of the support from some delegates, noted the reservations expressed by others, and after, consultation with the Makah Tribe, announced that it was withdrawing its request for an amendment to the Schedule for the gray whale catch limit. The United States asked the IWC to defer consideration until the next year, when the ENP gray whale catch limit was due to expire, and the needs of the Chukchi people were also determined (IWC 1997).

In preparation for the annual meeting of the IWC in 1997, the United States considered comments made at the 1996 meeting that the gray whale catch limit should be shared with the Russian Federation, making the combined requests 140 rather than 145 gray whales per year (63 FR 16701, April 6, 1998). The gray whale catch limit set in the Schedule for the Russian Federation (acting on behalf of the Chukotka Natives) was due to expire in 1997, so the Russian Federation would have to request a new Schedule amendment for a five-year catch limit from 1998 through 2002 (63 FR 16701, April 6, 1998). After extensive discussions with the Alaska Eskimo Whaling Commission and the Makah Tribe, as well as an internal policy review, the United States delegation consulted with the Russian Federation delegation on the appropriate formulation for a request (63 FR 16701, April 6, 1998). The Makah made efforts to augment their needs statement and request, including conducting research and training on the proposed method of hunting whales (such as conducting field tests of rifles with Dr. Ingling, a veterinarian with IWC experience). They also gathered more information about the nutritional value of subsistence foods in their diet.

At the Aboriginal Subsistence Whaling Subcommittee meeting on October 18, 1997, the United States raised several points in support of the proposal: 1) law (the Treaty of Neah Bay specifically reserves the right of the Makah to hunt whales), 2) culture (the Makah have a 1,500-year tradition of whaling that has been of central importance to their culture), 3) science and conservation (there would be no adverse conservation impacts to the stock), and 4) Makah progress on improving the needs statement and request since the last IWC meeting (United States 1997; IWC 1998). Related to this last point, Dr. Ingling presented results of field trials on the weapon, ammunition, and techniques to be used in the Makah hunt (Ingling 1997; IWC 1998). A representative of the Makah Tribal Council also spoke, emphasizing the central focus and importance of whaling to Makah culture (IWC 1998). Opponents again raised concerns about the interruption in the Makah whaling practice. Some delegates thought that the Makah did not demonstrate nutritional and/or cultural need, based on the 1981 *Ad Hoc* Technical Working Group definitions of aboriginal subsistence whaling and consumption, while others stated that discontinuity of whaling practice should not be held against the Makah because they were deprived of cultural and traditional rights (IWC 1998). Some delegates thought the Makah had established cultural need beyond a doubt (IWC 1998).

At the 1997 IWC plenary session, the United States and the Russian Federation presented joint requests for bowhead and ENP gray whale catch limits to accommodate the needs of two aboriginal groups hunting from a single stock (Alaska Eskimos and s hunting bowheads and the Makah Tribe and Chukotka Natives hunting ENP gray whales). This was the first year in which two contracting governments simultaneously requested revisions to the Schedule for catch limits from the same stock. For the bowhead stock, delegates considered the joint request and adopted the catch limit of280 bowhead whales for the 1998 through 2002 five-year period, with a maximum limit of 67 per year, by consensus on the afternoon of October 22, 1997 (IWC 1998). The bowhead catch limit was allocated between the Russian Federation and the United States by a bilateral agreement.

For the ENP gray whale stock, the joint request of 620 gray whales for the 1998 through 2002 five-year period, with a maximum limit of 140 gray whales per year, was debated in IWC plenary session on the afternoon of October 22, 1997 (63 FR 16701, April 6, 1998). Some delegates suggested making an amendment to the introductory portion of the proposal. The debate session then adjourned to allow for consultation among the delegates (63 FR 16701, April 6, 1998). Specifically, two delegates proposed that the following words be added to paragraph 13(b)(2) of the Schedule, “whose traditional subsistence and cultural needs have been recognized by the

International Whaling Commission" (IWC 1998). United States delegates responded that the words "by the International Whaling Commission" were not acceptable, because the IWC had no established mechanism for recognizing such needs, other than adoption of a catch limit in the Schedule (63 FR 16701, April 6, 1998). The United States delegates expressed their understanding that adoption of a catch limit in the Schedule constituted IWC approval, with no further action required. A clear majority of Commissioners then expressed their support for the United States approach (63 FR 16701, April 6, 1998). When the plenary session resumed, the Chair announced consensus. The joint request of the United States and the Russian Federation for a gray whale catch limit was adopted on October 23, 1997, with the addition of the words "whose traditional aboriginal subsistence and cultural needs have been recognized" to the Schedule language (63 FR 16701, April 6, 1998; IWC 1998). The ENP gray whale catch limit was allocated between the Russian Federation and the United States by a bilateral agreement (120 gray whales per year for the Chukotka Natives, and an average of four gray whales per year, with a maximum of five, for the Makah).

At the annual meeting of the IWC in 2002, the IWC adopted a catch limit of 620 ENP gray whales for the 2003 through 2007 five-year period by consensus. The catch was limited to 140 takes per year, based on a second joint request of the United States and the Russian Federation (IWC Schedule 2002), which was similar to the first successful joint request in 1997. The United States and Russian Federation then allocated the ENP gray whale catch limit by bilateral agreement, to a maximum of 20 whales over the five-year period and up to five whales annually for the Makah, and a maximum of 600 gray whales over the five-year period and up to 135 per year for the Chukotka Natives.

At the annual meeting of the IWC in 2003, the Russian Federation noted anomalies in the Schedule about the way that Chukotka Natives are treated compared with other aboriginal groups operating under aboriginal subsistence whaling auspices (IWC 2004a; IWC 2004b). They proposed changes to the Schedule, including changes to paragraph 13(b)(2). Paragraph 13(b)(2) read as follows:

> [t]he taking of gray whales from the Eastern stock in the North Pacific is permitted, but only by aborigines or a Contracting Government on behalf of aborigines, and then only when the meat and products of such whales are to be used exclusively for local consumption by the aborigines whose traditional aboriginal subsistence and cultural needs have been recognized. . . .

The Russian Federation proposed to delete the words "whose traditional aboriginal subsistence and cultural needs have been recognized" (IWC 2004a; IWC 2004b). The Russian Federation's

stated objective was to achieve consistency in the Schedule and to, therefore, eliminate discriminatory behavior against the native peoples of Chukotka, because they interpret such language restrictions as preventing the important practice of cultural exchange of goods among indigenous peoples (IWC 2004a; IWC 2004b). The IWC subsequently charged a small group, comprising the Russian Federation, Denmark, Australia, the United States, and the IWC Secretariat, to review paragraph 13 of the Schedule to determine how to achieve consistency across aboriginal subsistence whaling operations (IWC 2004a).

The small group submitted a report to the Aboriginal Subsistence Whaling Subcommittee at the annual meeting of the IWC in 2004 (IWC 2005a; IWC 2005b), together with proposed changes to the Schedule. The report had two key recommendations: 1) move the prohibition on take of calves and mother/calf pairs to the general principles governing all hunts in paragraph 13(a), 2) delete the language, "the aborigines whose traditional aboriginal subsistence and cultural needs have been recognized" from paragraph 13(b)(2) of the Schedule (IWC 2005a; IWC 2005b). The latter recommendation was related to the Russian Federation's interpretation that the quoted provision violated the human rights of Chukotka Natives, because the restriction was not included in other subparagraphs governing aboriginal subsistence whale hunts and, therefore, improperly discriminated against the Chukotka Natives (IWC 2005a; IWC 2005b). The Russian Federation maintained that the Chukotka Natives have equal rights to other aboriginal communities to use whale products (IWC 2005a; IWC 2005b).

At the 2004 IWC plenary session, delegates adopted the report of the small group and the proposed Schedule amendments by consensus, with one revision. They retained a calf and mother/calf take prohibition specific to St. Vincent and the Grenadines. Since 2004, the Schedule has read as follows for the ENP gray whale stock catch limit:

> [T]he taking of gray whales from the Eastern stock in the North Pacific is permitted, but only by aborigines or a Contracting Government on behalf of aborigines, and then only when the meat and products of such whales are to be used exclusively for local consumption by the aborigines (IWC Schedule 2005 and 2006 paragraph 13(b)(2)).

The IWC also adopted the 1979 Cultural Anthropology Panel's definition of subsistence use in 2004. See Section 1.2.4.1.3, IWC Aboriginal Subsistence Whaling, for more details about the text of the current Schedule, as well as for the text of the formally adopted definition on subsistence use.

On February 14, 2005, the Makah initiated the current proposal to hunt ENP gray whales and submitted a request for a waiver of the MMPA take moratorium to NMFS; NMFS had not

published the 2003 through 2007 quota under the WCA due to the 2004 decision in *Anderson v. Evans*. In October 2005, the House of Representatives Committee on Resources passed a non-binding resolution (House of Representatives Congressional Resolution 267) by a vote of 21 to 6, expressing disapproval of the MMPA waiver process and stating that the United States should uphold the treaty rights of the Makah Tribe. The Committee's report (House Report 109-283) was placed on the House of Representatives' calendar without further action. NMFS is currently reviewing the Makah's proposal to hunt, as described in this chapter. At the May 2007 IWC meeting the United States and the Russian Federation again made a joint request for an ENP gray whale catch limit from the IWC for the 2008 through 2012 five-year period under similar terms as the last catch limit for 2003 through 2007. The catch limit was approved by consensus.

1.4.2 Summary of Recent Makah Whaling ─ 1998 through 2007

In 1998, NMFS published a yearly quota of up to five gray whales for the Makah in the Federal Register (63 FR 16701, April 6, 1998), operating under the 1998 to 2002 five-year quota. Although the Makah Tribal Council issued several whaling permits and tribal whalers conducted a number of practice exercises, they did not actually hunt whales that year. Protest activities and conflicts near and on the shores of Neah Bay during 1998 are described in Public Safety, Section 3.15.3.4, Behavior of People Associated with the Hunt. Protest vessels mobilized on November 11, 1998, but in response to a false report that the Tribe was hunting and had harvested a whale (United States Coast Guard [Coast Guard] 1998).

During the spring northward migration in 1999, NMFS again published a yearly quota of up to five gray whales for the Makah in the Federal Register (64 FR 28413, May 26, 1999). The Makah Tribal Council issued a 10-day whaling permit to the Makah whaling captain on May 10, 1999, based on the recommendation of the Makah Whaling Commission acting in accordance with the 1998 Gray Whale Management Plan. Whale hunting spanned four nonconsecutive days, May 10, 11, 15, and 17, and all hunts were conducted in the coastal portion of the Makah's U&A, south of Cape Flattery (i.e., outside the Strait of Juan de Fuca) to target whales migrating northward. Two vessels and crews were directly involved in the whale hunting activities, including the Makah whaling crew in their canoe, *The Hummingbird*, and a rifleman, backup harpooner, and diver on board the tribal chase boat. NMFS and Makah tribal fisheries observers were on board the NOAA observer boat *Research II*. In addition, media helicopters, one or two chartered media vessels, protest vessels, Coast Guard law enforcement, and shore-based

supporters and opponents were present most of the time. A tribal commercial fishing boat, acting as a support vessel, was also nearby and available to assist the whalers.

On May 10, 1999, the first day of whale hunting, the Makah crew searched for gray whales near Father and Son Rock, Cape Alava, Spike Rock, Umatilla Reef, and Point of the Arches (Gosho 1999; United States Coast Guard 1999a). At least four whales were sighted throughout the day, with three of the four sightings occurring in 115 to 134 feet of water (Gosho 1999). The observers did not see calf-sized whales in the area (NMFS 1999). The Makah whaling crew threw one harpoon at a whale, but missed it (Gosho 1999; NMFS 1999; NMFS and Makah Tribal Council 2000). The hunt was disrupted by vessel-based protesters who maneuvered between the two Makah vessels and the whales. Protesters tried to scare off the whales, and they also fired flares and smoke flares at the Makah whaling party vessels (NMFS 1999; Sunde et al. 1999; United States Coast Guard 1999a). Because most of the hunting occurred south of the Coast Guard's regulated navigation area (RNA), a 500-yard moving exclusionary zone (MEZ) around the Makah vessels was not in effect (NMFS 1999). Coast Guard officials detained two of the protesters, who they subsequently cited for grossly negligent operation of a vessel, and the Clallam County sheriff then arrested the protesters for reckless endangerment (NMFS 1999; Sunde et al. 1999; United States Coast Guard 1999a). At least three media helicopters were present (United States Coast Guard 1999a). Hunting on May 11 (day two) continued in the same area, but the Makah whaling captain called it off in a few hours due to poor weather conditions (Gosho 1999; NMFS 1999). No whales were sighted or approached.

Whale hunting resumed on May 15, 1999, day three, near Father and Son Rock, Ozette Island, and the Bodeltehs (Gosho 1999), south of the RNA (NMFS 1999). Several gray whales were sighted in 87- to 95-foot-deep water, but the Makah crew was unable to maneuver *The Hummingbird* close enough to throw harpoons and was again interrupted by protest vessels (Gosho 1999). Around 11:00 a.m., the whalers sighted a whale and threw a harpoon, which was assumed to contact the whale because the wooden harpoon holder was split, and the float disappeared underwater for a short time (Gosho 1999; NMFS 1999). The strike did not appear to penetrate or embed in the animal because the harpoon head was intact and clean, the throw was parallel to the animal (rather than perpendicular), and the float resurfaced Gosho 1999; NMFS 1999). Because the harpoon did not embed in the whale and did not appear to cause serious injury, it did not meet the definition of a strike under the 1998 Gray Whale Management Plan. (Gosho 1999; NMFS 1999) Under that plan, a strike counted only if the harpoon embedded in the whale and if it might have resulted in death or serious injury. About an hour later, the

Makah harpooner threw another harpoon and missed (Gosho 1999). Protest vessels were active around the whalers much of the day. Two protest vessels came into contact with whales; one vessel ran over the top of a whale and temporarily stunned it, while another vessel hit the flukes of a diving whale beside the Makah canoe (NMFS 1999). The Coast Guard cited four vessels for grossly negligent operations and/or MMPA take infractions, and three of the vessels were taken into federal custody (NMFS 1999).

On May 17, 1999 (the fourth and final day of whale hunting), the Makah crew continued hunting southwest of Father and Son Rock, south of the RNA. No protest vessels attempted to disrupt the hunt, but three media helicopters covered events throughout the day (United States Coast Guard 1999b). At 6:55 a.m., the Makah crew sighted a whale and pursued it in the canoe; the whale surfaced on the right side of the canoe, and crew harpooned it as it moved across the bow of the canoe (Gosho 1999; NMFS 1999). The harpoon remained affixed to the whale, which pulled the harpoon line and floats underwater and towed the canoe (Gosho 1999; NMFS 1999). The whaling crew in the canoe held the harpoon line while the chase boat approached the whale for the Makah rifleman to kill the animal with a .577 caliber rifle. The gunner fired the first and second shots at 6:58 a.m.; both shots missed (Gosho 1999). At 7:01 a.m., a third shot was fired, striking the whale behind the blowhole and slightly to the left, momentarily stunning the whale (Gosho 1999). A second harpoon was also thrown at the whale, striking it on the right side towards the rear (Gosho 1999). The fourth and final shot was fired at 7:03 a.m., striking the whale behind the blowhole slightly to the right, and leaving the whale motionless at the surface (Gosho 1999). Immediately after the final shot, a third harpoon was thrown, striking the whale on the right side (Gosho 1999). The total time to death, from the initial harpoon strike to the last shot that dispatched the whale, was 8 minutes. The body of the whale sunk and was supported by the lines on the three attached harpoons (Gosho 1999). A Makah diver attached a heavier line around the tail stock of the whale for towing (Gosho 1999), and the whale was towed by a Makah support vessel to inside the breakwater at Neah Bay, where tribal members had gathered on the beach to celebrate the hunt. The whale was transferred from the support vessel to four canoes from various Washington Indian tribes, led by the crew of the Makah *Hummingbird* canoe, and towed from the deeper part of the breakwater into the shallow water at the edge of the beach (J. Sepez, pers. comm. 2007). The whale was then pulled onto the beach by approximately three dozen male tribal members, tugging in unison on hand-held ropes (J. Sepez, pers. comm. 2007).

The whale was butchered following tribal ceremonies. Tribal members removed almost all edible portions of the meat and blubber from the whale by midnight. NMFS biologists collected samples

from internal organs after tribal members removed the meat and took it home or to the community freezer (Gosho 1999; NMFS 1999). Tribal members flensed small portions of meat the next day to prepare the skeleton for a museum display (NMFS 1999; NMFS and Makah Tribal Council 2000). Tribal members consumed the meat and blubber during tribal ceremonies (Gosho 1999; NMFS and Makah Tribal Council 2000; NMFS 1999). According to measurements NMFS and tribal observers took, the harvested whale was a non-lactating female that measured 30 feet, 5 inches (9.27 meters) long. Fluke width was 7 feet, 4 inches (2.2 m). The whale could not be weighed, but, based on gray whales taken by the Russian harvest of similar length and body condition, it was estimated to weigh approximately 5 to 7 metric tons. Age could not be determined either, but, based on similar lengths of whales taken in the Russian harvest, it was probably more than two years old. An examination of the skull during butchering revealed that the third shot struck the ridge of the skull, shattering it, and proceeded back into the muscle near the left flipper, where whalers found the bullet (the bullet was intact with no deformation). The fourth shot struck the skull above the occipital condyle and entered the braincase; it likely caused instantaneous loss of consciousness and death (Gosho 1999).

During the fall/winter southward migration in 1999/2000, the Makah Tribal Council did not issue any whaling permits because weather conditions were unsuitable. Hunting began during the spring northward migration for seven days between April 17, 2000, and May 29, 2000 (Gearin and Gosho 2000). The Makah tribal whalers actively hunted gray whales in the coastal portion of the Makah U&A south of Cape Flattery for seven days, during which no whales were harvested, struck, or struck and lost (Gearin and Gosho 2000). Except for a few approaches near Makah Bay, most hunting occurred south of Point of Arches near Father and Son Rock. Makah whalers threw harpoons on three occasions, but the harpoons did not attach to a gray whale on any of these attempts. The first two throws appeared to be complete misses (Gearin and Gosho 2000). The third throw may have grazed the whale; however, the harpoon did not implant or detach (Gearin and Gosho 2000). Most of the whales in the area during the hunt were large single individuals. The whales appeared to be actively migrating, because the average time between surface sightings (i.e., the average dive time) was about eight minutes, which is four or five minutes longer than the average dive time for whales feeding or resting locally, and the whales were farther offshore (i.e., 80 to 100 feet rather than 30 to 60 feet deep) (Gearin and Gosho 2000).

All hunts occurred within the Coast Guard's RNA and MEZ (Gearin and Gosho 2000). During the first two days of hunting (April 17 and 20), protesters disrupted the hunts (Gearin and Gosho 2000). On April 20, Coast Guard personnel boarded two protest vessels and issued

warnings (United States Coast Guard 2000). One of the vessels entered the 500-yard MEZ on three occasions subsequent to the Coast Guard advisory; the Coast Guard again intercepted and warned it (United States Coast Guard 2000). On at least one of these three entrances into the MEZ, the vessel entered the 500-yard MEZ at high speed and was intercepted within 50 yards of the Makah's canoe (Gearin and Gosho 2000). Two individuals on jet skis also entered the MEZ, making high speed charges at the Makah canoe (United States Coast Guard 2000). The Coast Guard intercepted both jet skiers. One jet skier ran into a Coast Guard vessel and sustained shoulder injuries; Coast Guard personnel retrieved the individual from the water, placed her under arrest, and transported her to Olympic Memorial Hospital (United States Coast Guard 2000). The Coast Guard also intercepted and arrested the second jet skier, and transferred him to the Clallam County sheriff's office (United States Coast Guard 2000). After a temporary delay, hunting resumed for five nonconsecutive days in May (May 6, 7, 10, 12, and 29). One to three protester vessels were present during these times, but they did not enter the MEZ to disrupt whale hunting (Gearin and Gosho 2000). Media helicopters were present during most of the whale hunting and appeared to comply with the Sanctuary's 2,000-foot minimum allowable flight altitude.

Makah whalers had intended to continue whaling into June, but the Makah Tribal Council did not issue any permits after the June 9, 2000 ruling by the Court of Appeals for the Ninth Circuit in *Metcalf v. Daley* (2000). The Makah Tribal Council did not issue any whaling permits during the gray whale southward migration in fall/winter 2000. The whale harvested in 1999 is the only whale that the Makah have harvested in contemporary times. Some Makah members have, however, participated in whale hunt research, education, and training with other indigenous groups. In August of 2005, for instance, two Makah members and a tribal whale biologist traveled to the eastern shores of the Russian Federation. The biologist was involved in an IWC scientific exchange to evaluate the type of data that Chukotka Natives collected in their hunts and to evaluate the logistics of studying the 'stinky whale phenomenon' (whales that have a strong chemical smell and are inedible). The Makah members participated in a cultural exchange to observe the Chukotka gray whale hunts and to receive training in whale hunting techniques and whale butchering.

On September 8, 2007, five members of the Makah Indian Tribe hunted and killed a gray whale in the Strait of Juan de Fuca in a hunt that was not authorized by the Tribe or NMFS. This unauthorized hunt did not comply with numerous provisions and restrictions defined in the Tribe's application, and both the Tribe and NMFS made statements condemning the unlawful hunt (Hogarth 2007; Rosenberg 2007).

The five tribal members used two boats and had in their possession a .577 caliber rifle and a Weatherby .460 caliber rifle (*U.S.A. v. Gonzales et al*. 2007). One of the boats and all of the rifles belonged to the Tribe and were obtained by one of the members of the hunting party (*U.S.A. v. Gonzales et al.* 2007). Sometime on the morning of September 8, the hunters approached a gray whale approximately 40 feet long near Seal Rock and harpooned it with at least five harpoons (Mapes 2007). They then shot the whale at least 16 times (*U.S.A. v. Gonzales et al.* 2007). According to a report by the Tribe, none of the members of the hunting party had received tribally sanctioned training in use of the weapons to kill gray whales (Scordino 2007a). A tribal biologist who evaluated the whale's condition in the afternoon of September 8 counted four visible harpoons and 16 bullet holes (Scordino 2007b). The whale died shortly after 7:00 p.m. on September 8 (Scordino 2007b).

On October 5, 2007 the five tribal members were indicted in federal court for unauthorized whaling, unauthorized take of a marine mammal, and conspiracy to engage in unlawful whaling (*U.S.A. v. Gonzales et al.* 2007). On November 16, 2007, the five were charged in tribal court for violating the Tribe's gray whale management plan, violating state and federal laws, and reckless endangerment (Casey 2007; *Makah Tribe v. Andrew Noel* 2007). On March 27, 2008, three of the tribal members entered guilty pleas to unlawful taking a marine mammal in violation of the MMPA (*U.S.A. v. Gonzales* 2008; *U.S.A. v. Parker* 2008; *U.S.A. v. Secor* 2008). Their sentencing is currently scheduled for June 30, 2008. On April 7, 2008, after a Bench Trial on Stipulated Facts, the court found the remaining two tribal members guilty of conspiracy and unlawful taking of a marine mammal in violation of the MMPA (*U.S.A. v. Noel and Johnson* 2008). Their sentencing is also scheduled for June 30, 2008. The criminal charges filed in the Makah Tribal Court are pending.

1.4.3 Other Environmental Assessments and Court Decisions Informing this Action

In 1996, NMFS entered into a cooperative agreement with the Makah Tribe to ensure a United States request before the IWC to amend the Schedule's catch limit for the ENP gray whale stock and jointly manage the gray whale hunts. Before NMFS could publish any quota for the Makah Tribe, it had to amend the WCA regulations, which only provided for aboriginal subsistence whaling by the Alaska Eskimo Whaling Commission. NMFS conducted a NEPA analysis on its proposed rule to amend the regulations and on March 26, 1996, issued a finding that the proposed regulations would not have a significant impact on the environment.

In 1996, the United States' request on behalf of the Makah Tribe to the IWC to revise the Schedule's catch limit for ENP gray whales met with resistance, and the United States withdrew the request. In response to concerns raised by some conservation organizations, in June 1997, NMFS initiated a NEPA process to analyze the environmental impacts of a decision to publish an aboriginal subsistence whaling quota under the WCA for the Makah's use of up to five ENP gray whales annually. The draft EA was released for comment in August 1997. A few months later, NMFS entered into a second cooperative management agreement with the Makah Tribe. It was similar to the first, except that the second agreement included time and area restrictions aimed at reducing the likelihood of taking a gray whale from the local area (Pacific Coast Feeding Aggregation survey area). NMFS and the Makah entered into the agreement on October 13, 1997, and NMFS issued the final EA and a FONSI four days later.

Conservation groups challenged NMFS' FONSI in court, and the Ninth Circuit set aside the EA and FONSI in *Metcalf v. Daley* (2000), because NMFS did not produce them until after entering into the cooperative agreement with the Tribe. With the court's invalidation of the EA and FONSI, NMFS terminated the second cooperative agreement with the Makah Tribe and began a second NEPA process. On July 12, 2001, NMFS issued a second EA and FONSI regarding a similar Makah whaling proposal. Conservation groups challenged that EA and FONSI in court, and the Ninth Circuit ruled that the agency should have prepared an EIS rather than an EA in *Anderson v. Evans* (2004).

On March 6, 2003, NMFS initiated an EIS to assess the environmental impacts of publishing the 2003 to 2007 quota for the Makah's use under the WCA (68 FR 10703). Due to pending litigation, NMFS did not complete the EIS. In initiating the present process to prepare an EIS, NMFS gave notice it was terminating the previous EIS initiated in 2003 (70 FR 4991, August 25, 2005). The present EIS assesses the environmental impacts of publishing the 2008 to 2012 quota for the Makah's use under the WCA.

1.5 Scoping and the Relevant Issues

1.5.1 Scoping Process

Scoping is an open process agencies must conduct under NEPA to determine the range and significance of the issues to be analyzed in depth in an EIS (40 CFR 1501.7). As part of the scoping process, agencies invite the participation of affected federal, state, and local agencies, Indian tribes, the proponent of the action, and other interested persons, all of whom help to identify relevant issues to address in the EIS, while helping the agency eliminate insignificant

issues from detailed study. Scoping can also help determine the level of analysis and types of data needed. The scoping process for this EIS involved a number of activities that included both internal and public scoping. These activities are described in the following paragraphs.

1.5.1.1 Internal Scoping

NMFS received the Makah Tribe's request for a limited waiver of the MMPA take moratorium on February 14, 2005, and initiated internal scoping shortly thereafter, in the spring of 2005. During internal scoping, NMFS identified a preliminary list of resources to address in the EIS, along with five preliminary alternatives (including the No-action alternative) to serve as starting points for discussion. NMFS conducted this effort to help the public provide meaningful comments on resource issues and alternatives to the proposed action during the public scoping period. NMFS reevaluated the preliminary resources and alternatives following receipt and review of public comment.

1.5.1.2 Public Scoping

1.5.1.2.1 Public Comment Periods and Meetings

NMFS initiated public scoping on August 25, 2005, by publishing a Notice of Intent (NOI) to conduct public scoping meetings and prepare an EIS in the FR (70 FR 49911). The NOI announced a 60-day comment period (August 25 to October 24, 2005) to gather public input on the scope of the EIS, resources to analyze, and alternatives to consider. The NOI also included the dates, times, and locations of three public scoping meetings in Washington State, provided background information related to the proposed action, and included the list of resources and preliminary alternatives identified during internal scoping. NMFS noted that the scope of the NEPA review was limited specifically to the MMPA formal rulemaking process (i.e., waiving the take moratorium and issuing regulations and any necessary permits). NMFS published a second NOI with the same background information on October 4, 2005 (70 FR 57860), to set a fourth scoping meeting in Silver Spring, Maryland, in response to public requests for an additional public meeting in the Washington D. C. area.

In addition to the two NOIs, NMFS notified the public that scoping began by issuing a press release to local media on August 25, 2005, and placing three public notices in key northwest Washington newspapers, including the *Peninsula Daily News* (September 19, 2005), *Seattle Post-Intelligencer* (September 21, 2005), and *Seattle Times* (September 21, 2005). The agency also mailed an informational letter to interested parties (from a mailing list of 824 federal, state, county and local agencies, elected officials, Native American organizations, nongovernmental

organizations, businesses, media outlets, libraries, and individuals) to provide information about the dates, times, and locations of the public scoping meetings, as well as details about the meeting format. The two NOIs, the NOAA Fisheries press release, and the informational letter were posted on the NMFS Northwest Region website (http://www.nwr.noaa.gov) before the meetings and were provided at the public meetings. NMFS also wrote additional information and provided other background material to the public through its website and at the public meetings. These information sheets consisted of the following: '*Gray Whale Fact Sheet*,' '*Chronology of Major Events Related to the Makah Tribal Whale Hunt*,' and '*Overview of the Makah Indian Tribe's Waiver Request*.' Preaddressed comment forms and compact discs containing the Makah's waiver request were available at the meetings, and the public had an opportunity to share materials with one another. All scoping meetings were in October 2005 (Table 1-2).

TABLE 1-2. SCHEDULE AND LOCATION OF PUBLIC SCOPING MEETINGS

DATE	TIME	PLACE	CITY
October 5, 2005	6:30 to 9:30 p.m.	Makah Tribal Council Community Hall	Neah Bay, WA
October 6, 2005	6:30 to 9:30 p.m.	Vern Burton Memorial Community Center	Port Angeles, WA
October 11, 2005	6:30 to 10:00 p.m.	South Lake Union Park	Seattle, WA
October 18, 2005	10:00 a.m. to 1:00 p.m.	NOAA Auditorium	Silver Spring, MD

The public scoping meetings followed a workshop format to provide an opportunity for interaction between NMFS staff and the public in small group discussions. Each meeting began with an introduction by a facilitator, followed by two PowerPoint presentations given by NMFS employees (one presentation on the NEPA review process related to the Makah's request for a waiver of the MMPA take moratorium and one presentation on gray whale biology and population status). NMFS staff and contractors then facilitated small group discussions where the meeting attendees were invited to comment on the proposed action, focusing on resources to analyze and alternatives to consider in the EIS. Although comments from the small group discussions were captured in writing, they were not recorded verbatim. Facilitators reconvened all meeting attendees at the end of each session to present some of the major themes from the small group discussions. Attendees were encouraged to provide more detailed statements through written comments by using mail, email, fax, or comment forms.

NMFS reviewed both verbal and written comments received during public scoping and drafted a scoping report to document the scoping process and summarize public comments. Several comments related to the IWC and WCA aboriginal subsistence whaling processes

(e.g., precedential effects and subsistence). In response to these comments, the agency reconsidered the previous decision to conduct NEPA review only on the MMPA formal rulemaking process. NMFS ultimately decided that because it was considering the authorization of the Makah proposed whale hunting under both the WCA and the MMPA, a single EIS should be conducted to review these related actions. A third NOI was published in the Federal Register on February 27, 2006 (71 FR 9781), notifying the public of NMFS' decision to expand the scope of the EIS to include WCA publication of a quota and reopening another 30-day comment period (February 27 through March 29, 2006). Another letter to interested parties notified them of the second comment period (NMFS updated the mailing list to 1,066 entries following the public meetings). Both the NOI and the letter were posted on the NMFS Northwest Region's website (http://www.nwr.noaa.gov/Marine-Mammals/Whales-Dolphins-Porpoise/Gray-Whales/Makah-Whale-Hunt.cfm).

1.5.1.2.2 Other Public Scoping

On September 15, 2005, 24 letters went to Indian tribes and organizations in the Northwest informing them of NMFS' intent to prepare an EIS and inviting them to participate in the process. No requests were received for formal participation.

Five letters were also sent to federal agencies on September 14, 2005, inviting them to participate in the NEPA process as cooperating agencies, including NOAA's National Marine Sanctuaries Program, Olympic Coast National Marine Sanctuary staff, the United States Fish and Wildlife Service (FWS), the Coast Guard, the Environmental Protection Agency (EPA), and the Bureau of Indian Affairs. Of those invited, the Bureau of Indian Affairs accepted NMFS' invitation to be a formal cooperating agency in a letter dated October 27, 2005. The Bureau of Indian Affairs has participated in the preparation of this EIS.

1.5.2 Concerns Identified During Scoping

The following concerns were identified during both internal and public scoping. Detailed discussions of many of these concerns occur throughout this document.

1.5.2.1 Water Quality

- Potential effects to marine ecosystem from worst-case scenario vessel fuel/contaminant spill or protesting equipment
- Potential effects to quality of local drinking water from exposure to whale products
- Potential effects to marine ecosystem from exposure to whale products

1.5.2.2 Marine Habitat and Species

- Potential effects on marine habitat (such as kelp beds, surfgrass, intertidal area, or other habitat features)
- Potential effects of removing whales from the ecosystem

1.5.2.3 ENP Gray Whales

- Potential effects on the ENP gray whale population of removing individual whales in the project area by hunting
- Potential effects on gray whale presence in the local area (Pacific Coast Feeding Aggregation survey area) as a result of removing individual whales from the project area or from disturbing or frightening the whales in connection with hunting activities
- Potential effect on individual gray whales from specific hunting methods

1.5.2.4 Other Wildlife Species

- Potential effects on wildlife of noise
- Potential effects on wildlife of visual disturbance
- Potential effects on wildlife from fuel/contaminant spills
- Potential direct effects on wildlife from unintentionally striking animals with vessels or weapons
- Potential indirect effects on marine wildlife resulting from changes in prey availability due to the removal or redistribution of gray whales

1.5.2.5 Economics

- Potential economic effects on land-based, tourism-related businesses
- Short-term effects of tourism increase or decrease related to whale hunts
- Long-term effects of whale hunting on county-wide tourism
- Potential economic effects on water-dependent businesses
- Effects on the local (Strait of Juan de Fuca), Pacific Northwest, and Pacific coast whale-watching industry
- Effects on the international shipping and local commercial and recreational fisheries

1.5.2.6 Environmental Justice

- Potential disproportionate socioeconomic (employment and income) effects on minority and low-income populations
- Potential disproportionate sociological effects on minority and low-income populations

1.5.2.7 Social Environment

- Potential effects on attitudes and emotions, including spiritual beliefs

- Potential effects on human relations

1.5.2.8 Cultural Resources

- Potential impacts to archaeological and historical sites or traditional cultural properties in the project area

1.5.2.9 Ceremonial and Subsistence Resources

- Potential impacts to Makah culture from resuming whaling
- Potential impacts to Makah culture from not being allowed to resume whaling

1.5.2.10 Noise

- Disturbance to human visitors in the immediate vicinity of hunting activities
- Disturbance to onshore communities or homes on the Makah Reservation

1.5.2.11 Aesthetics

- Visual effects on on-scene observers of the hunt
- Visual effects on off-site observers of the hunt through the media

1.5.2.12 Transportation

- Potential for the hunt and related activities to interfere with normal marine vessel traffic
- Potential for the hunt and related activities to interfere with normal aircraft traffic
- Potential for the hunt and related activities to interfere with normal highway traffic
- Potential for hunt and related traffic to cause accidents or disrupt essential emergency services transit

1.5.2.13 Public Services

- Potential for hunt-related activities to result in injuries or other emergency incidents that exceed the capacities of tribal and other local public health facilities
- Potential for hunt-related activities to affect and potentially overwhelm tribal, county, and Coast Guard law enforcement personnel and facilities
- Potential for hunt-related activities to detract from enforcement needed in other areas

1.5.2.14 Public Safety

- Potential effects on public and hunter safety related to possible methods of dispatching whales
- Potential effects on public and hunter safety from wounded whales
- Potential effects on public and hunter safety of prevailing weather and sea conditions
- Potential effects on public and hunter safety related to protest activities and conflicts

1.5.2.15 Human Health

- Potential positive health effects on tribal members and others consuming any whale products
- Potential negative effects from ingesting potential contaminants contained in freshly harvested and drift whale products

1.5.2.16 Concerns not Specifically Related to a Resource Area

- Precedential effect on the MMPA if take moratorium is waived (would other tribes or organizations be able to obtain waivers more easily)
- Precedential effect on whaling world-wide if a hunt is authorized
- Effect on the Makah and other tribes associated with upholding or denying treaty rights
- International effect of denying an ethnic minority a subsistence right secured in a treaty

1.6 Relationship to Other Treaties, Laws, Regulations, Policies, and Processes

Various authorities — both international and national (federal, state, and local) treaties, laws, regulations, policies, and processes — may apply to the whale hunting activities proposed by the Makah Tribe. While some of these authorities require specific agency action before any hunt, such as promulgation of regulations and issuance of permits, others require agency review and consultation. Table 1-3 lists those authorities that are most relevant to the Makah Tribe's proposed whale hunting.

TABLE 1-3. INTERNATIONAL, NATIONAL, STATE, AND TRIBAL TREATIES, LAWS, REGULATIONS, POLICIES, AND PROCESSES THAT MAY BE REQUIRED FOR MAKAH WHALING

AUTHORITY	OVERSIGHT BODY	DESCRIPTION OF AUTHORITY, NECESSARY ACTION, OR REVIEW/CONSULTATION
IWC Schedule, Paragraph 13 (Aboriginal Subsistence Whaling Catch Limits)	IWC and United States government	Sets catch limits by whale stock based on requests from contracting governments acting on behalf of aborigines (and informed by scientific advice). United States has submitted requests, and the IWC has set catch limits, on behalf of the Makah.
Treaty of Neah Bay	United States government and NMFS	Establishes fishing, whaling, and sealing rights for the Makah. United States and NMFS must decide how best to meet their federal trust responsibilities.
MMPA	NMFS	Prohibits the take of marine mammals, subject to a waiver of the moratorium and/or compliance with a statutory exemption. Consistent with the 9th Circuit decision in *Anderson v. Evans* (2004) and in response to the Makah tribe's request to whale, NMFS must initially decide whether to waive the moratorium on take for the Makah's proposed whale hunting, proceed through formal rulemaking, including a possible on-the record hearing, and issue regulations and permits.
WCA	NOAA Office of International Affairs and NMFS	Implements United States obligations under the ICRW. NMFS must decide whether to enter into a cooperative agreement with the Makah Tribe for co-management of the gray whale hunts and whether to publish an aboriginal subsistence whaling quota for the Makah's use.
NEPA	Council on Environmental Quality / EPA and NMFS	Requires that an EIS be prepared for every major federal action with the potential to significantly affect the quality of the environment. Consistent with the 9th Circuit decision in Anderson v. Evans NMFS is preparing this EIS and will eventually issue an ROD.
ESA	FWS/NMFS	Requires federal agencies to consult with the FWS or NMFS (depending on species jurisdiction) to ensure that activities authorized, funded, or carried out by federal agencies are not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. NMFS may consult internally and FWS for the 16 ESA-listed species and designated killer whale critical habitat in the project area.
Magnuson-Stevens Act	NMFS	Requires federal agencies to consult with NMFS with respect to any action authorized, funded, or undertaken (or proposed to be the same) when the action may adversely affect any essential fish habitat.

TABLE 1-3. INTERNATIONAL, NATIONAL, STATE, AND TRIBAL TREATIES, LAWS, REGULATIONS, POLICIES, AND PROCESSES THAT MAY BE REQUIRED FOR MAKAH WHALING

AUTHORITY	OVERSIGHT BODY	DESCRIPTION OF AUTHORITY, NECESSARY ACTION, OR REVIEW/CONSULTATION
National Marine Sanctuary Act	NOAA National Ocean Service, National Marine Sanctuaries Program	Requires federal agencies to consult with NOAA when a proposed action internal or external to any sanctuary is likely to destroy, cause the loss of, or injure a sanctuary resource. NMFS may consult with Sanctuary staff.
Coastal Zone Management Act	Washington Department of Ecology (Ecology)	Requires federal agencies to ensure that activities carried out in or outside the state's coastal zone are consistent with the enforceable policies of approved state management plans, to the maximum extent practicable. NMFS may consult with Ecology.
Migratory Bird Treaty Act and Executive Order 13186 (Migratory Birds)	FWS	Prohibits intentional and unintentional take of migratory birds. NMFS may consult with FWS.
Executive Order 12898 (Environmental Justice)	EPA	Provides for fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.
National Historic Preservation Act	Washington State Historic Preservation Officer (SHPO) and Tribal Historic Preservation Officer (THPO)	Requires federal agencies to consider cultural resources as part of all licensing, permitting, and funding decisions when the proposed action may have an effect on properties included in or eligible for the National Register of Historic Places. NMFS has assessed the potential impacts on registered historic sites in the project area and concludes that consultation is not necessary.
Clean Water Act	EPA; Washington Department of Ecology, and Makah Tribal Council	Establishes standards and regulations by which waters of the state must be managed. NMFS will provide this draft EIS to Ecology for its review.
Makah Whaling Permit	Makah Tribal Council and Makah Whaling Commission	Reviews whaling crew qualifications, identifies whaling crew and vessel participation, and provides other hunt restrictions. The Makah Tribal Council would issue the permit to a whaling captain before any hunt, based on recommendations from the Makah Whaling Commission.

1.7 Organization of this EIS

This EIS is organized in the following categories and chapters:

- Executive Summary
- Table of Contents
- List of Acronyms and Abbreviations
- Glossary
- Chapter 1, Purpose and Need
- Chapter 2, Alternatives
- Chapter 3, Affected Environment
- Chapter 4, Environmental Consequences
- Chapter 5, Cumulative Effects
- References
- List of Preparers and Agencies Consulted
- Distribution List
- Appendix

Chapter 2 Alternatives

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2.0 ALTERNATIVES

2.1 Introduction

This chapter describes and compares the alternatives under consideration, including the proposed action. Figure 1-1 in Chapter 1 provides a map of the Makah Indian Tribe's (Makah's or Tribe's) usual and accustomed fishing grounds (U&A) and the proposed action area within the Makah U&A where the Tribe proposes to hunt eastern North Pacific (ENP) gray whales for ceremonial and subsistence purposes. All further references to 'gray whales' or 'whales' in this chapter are to ENP gray whales. Section 2.2 describes the process NMFS followed to formulate the alternatives. Section 2.3 describes the alternatives analyzed in detail in this environmental impact statement (EIS). Section 2.4 includes alternatives NMFS considered but eliminated from detailed analysis, and Section 2.5 compares the way the alternatives NMFS is analyzing in detail address the key concerns raised during scoping (described in Section 1.5.2, Concerns Identified During Scoping), which are summarized below:

- Conservation impacts (to gray whales and the local marine ecosystem)
- Impacts on the Makah Tribe
- Other impacts on the local human environment (such as public safety, aesthetics, public sentiment regarding whales, and tourism/whale-watching)

Table 2-2, which is placed at the end of this chapter, is a resource matrix that compares the resource effects among alternatives.

2.2 Alternative Development Process

The National Marine Fisheries Service (NMFS) received the Makah's request for a waiver of the Marine Mammal Protection Act (MMPA) take moratorium in February of 2005. NMFS reviewed the request and concluded that it contained relevant and appropriate information to warrant proceeding with a full evaluation. The agency held a series of internal meetings to determine appropriate public scoping procedures and to identify a set of preliminary alternatives to serve as a starting point for discussions in public scoping meetings. Section 1.5.1.1, Internal Scoping, contains detailed information on the process. NMFS initially focused the scope of its review on the MMPA formal rulemaking process (Section 1.2.3, Marine Mammal Protection Act, for more detail about the legal framework and formal rulemaking process of the MMPA). Four public scoping meetings were held in the fall of 2005 at which the public was invited to offer and

discuss potential alternatives to be analyzed and discuss resources that may be affected by those alternative actions in the project area. Section 1.5.1.2, Public Scoping, contains more detail.

During fall of 2005, NMFS also received 247 written public comment submittals during the 60 days of public scoping. Several comments addressed the International Whaling Commission (IWC) and Whaling Convention Act (WCA) aboriginal subsistence whaling processes and associated catch limits and quotas, leading NMFS to reconsider its previous decision to analyze only the MMPA formal rulemaking process in this EIS. In January 2006, the Makah Tribe wrote a letter asking NMFS to consider its request to resume whaling under all applicable laws and regulations, including the WCA. In February 2006, NMFS published a notice of its decision to expand the scope of the EIS to include publication of aboriginal subsistence whaling quotas for the Makah under the WCA. This decision allowed NMFS to address all key concerns under its jurisdiction related to Makah whaling in a single EIS. NMFS reopened public comment for 30 days in the spring of 2006 and received 91 written public comments (Section 1.5.1.2, Public Scoping, for more information about the public scoping process). The agency then developed a full range of EIS alternatives for internal review and discussion, based on its review of several sources of information:

- The Makah Tribe's request
- Public comment
- Input from other Federal agencies, (including the Bureau of Indian Affairs as NMFS' cooperating agency)
- NMFS' previous experience conducting environmental reviews of Makah whaling proposals
- The MMPA and its regulations
- The WCA and its regulations
- The Council on Environmental Quality's National Environmental Policy Act (NEPA) regulations (40 Code of Federal Regulations [CFR] 1500-1508)
- Other applicable statutes and regulations
- The Treaty of Neah Bay
- The federal trust responsibility

The Council on Environmental Quality's regulations require that an agency consider and assess the environmental consequences of a No-action Alternative, the proposed action alternative, and other reasonable alternatives (40 CFR 1502.14). Reasonable alternatives, along with the proposed action and the No-action Alternative, must be rigorously explored and objectively evaluated in

the EIS and presented in comparative form to define the issues sharply and provide the decision-maker with a clear basis for choice among the options (40 CFR 1502.14). An agency preparing an EIS must, therefore, make a threshold determination of reasonableness when selecting alternatives from those identified during internal and public scoping. Alternatives that meet the reasonableness threshold are analyzed in detail in the EIS, while alternatives that do not meet this threshold are eliminated from detailed study.

The Council on Environmental Quality's regulations and guidance include general quantitative and qualitative factors to consider when evaluating reasonableness of alternatives. According to the Council on Environmental Quality's '40 Most Asked Questions' publication, the number of reasonable alternatives to analyze in detail depends on the nature of the case, but should cover a full spectrum of alternatives to the proposed action (46 Federal Register [FR] 18026, 18027(1b), March 23, 1981). Qualitatively, reasonable alternatives include those alternatives that are practical or feasible from the technical and economic standpoint and use common sense, rather than being simply desirable from the standpoint of the applicant (46 FR 18027(2a)). Reasonable alternatives may also be outside the legal jurisdiction of the lead agency (that is, may require legislative implementation) (46 FR 18027(2b)).

To develop the full range of action alternatives, NMFS considered the principal components associated with a hunt. These components were identified during scoping:

1. The time when whale hunting would occur
2. The area where whale hunting would occur
3. The annual and five-year limits on the number of whales harvested, struck, and struck and lost
4. Cessation of whale hunting if a predetermined number of identified whales were harvested
5. The method of hunting

NMFS developed a full range of reasonable alternatives by combining and varying these components in ways that would illuminate potential impacts and key concerns. The agency did not develop separate alternatives that would alter the fifth component, the method of hunting. Instead NMFS identified all possible methods of striking and killing whales, based on the Tribe's request, internal scoping, public comments, and an examination of aboriginal subsistence hunting world-wide. It eliminated from consideration those hunting methods considered unreasonable. Those methods, and the basis for concluding they are unreasonable, are described in Section

2.4.5, Employ Different Hunting Methods. The hunting methods not eliminated as unreasonable are included for analysis and incorporated into each of the action alternatives. The method of hunting is, therefore, treated as an element common to all action alternatives. All components are described more fully below under the proposed action and other action alternatives.

To assess the reasonableness of an alternative, NMFS considered the potential of the alternative to meet the project's purpose and need. Factors considered included consistency with applicable law, practicability and feasibility, and the extent to which it would identify and illuminate potential impacts or key concerns (see the summary of key concerns above in Section 2.1, Introduction).

2.3 Alternatives Considered for Detailed Study

This EIS analyzes six alternatives in detail. Outside of the No-action Alternative (described in Section 2.3.1), the five action alternatives (described in Sections 2.3.3 through 2.3.7) would allow the Makah Tribe to conduct limited ceremonial and subsistence hunting of gray whales, but would impose different restrictions on any hunt. These restrictions would differ with respect to the first four principal components discussed above in Section 2.2, Alternative Development Process. Differences in those components among all alternatives are displayed in Table 2-1. All action alternatives would require NMFS to waive the take moratorium, promulgate regulations, issue a permit under the MMPA, and authorize whaling under the WCA by publishing a quota. Other elements in common among action alternatives, including method of the hunt, are described below in Section 2.3.2, Elements Common among Action Alternatives. Alternatives NMFS considered but eliminated from detailed study are described in Section 2.4, Alternatives Considered but Eliminated from Detailed Analysis. Alternatives NMFS determined were out of scope are described in a separate memorandum to the file (NMFS 2007a).

2.3.1 Alternative 1 (No-action)

The No-action Alternative would result in no authorized hunting of gray whales by the Makah Tribe. NMFS would not waive the MMPA take moratorium, promulgate regulations, issue permits, publish any quota for the Makah under the WCA, or enter into any cooperative management agreement with the Makah Tribe for ENP gray whale hunts. The IWC catch limit of 620 whales for the five-year period beginning in 2008 would not change if NMFS were to adopt the No-action Alternative. Under the No-action Alternative, no part of the catch limit would be allocated to the Makah Tribe, so the entire catch limit would be available for harvest by the

Chukotka Natives. Examining the No-action Alternative will provide the public and NMFS with information about the following:

- Cultural and social impacts on the Makah Tribe if tribal members are unable to exercise their treaty right to hunt whales in their U&A
- Conservation impacts on gray whales and the local marine ecosystem if no gray whales are hunted in the action area
- Social effects from no hunting, including public safety, aesthetics, and public sentiment regarding whales
- Tourism/whale-watching effects if no gray whales are hunted in the action area

2.3.2 Elements Common among Action Alternatives (Alternatives 2 - 6)

All of the action alternatives would allow the Makah Tribe to conduct limited ceremonial and subsistence hunting of gray whales. Consistent with the bilateral agreement between the United States and Russia, gray whales harvested by the Makah Tribe would be counted against the IWC catch limit and not available for harvest by the Chukotka Natives. The action alternatives have several elements in common, which are discussed in detail under Alternative 2 (Proposed Action, Section 2.3.3) and which also apply to the remaining alternatives. The descriptions for Alternatives 3 to 6, therefore, describe only those elements that are distinct from Alternative 2. Elements in common among all action alternatives include the following:

- MMPA waiver, regulations, and any necessary permits
- WCA quota publication and execution of a cooperative agreement
- Hunting of gray whales only (no other marine mammal would be harvested)
- No hunting of a whale calf or whale accompanied by a calf
- Gray whale product use and distribution
- Certain public safety measures and enforcement
- Training, certification, and permit process for tribal whalers and whaling captain
- Makah Department of Fisheries Management and NMFS hunt observers
- Tribal enforcement of whaling regulations
- Adaptive management plan with monitoring
- Ongoing gray whale management and monitoring at the national and international levels
- Method of hunt

During public scoping, several commenters asked that this EIS examine alternative methods of hunting (the last item in this list). The method of hunting itself includes the vessels used to scout,

pursue, and tow animals, as well as the weapons used to strike and/or kill animals. Different methods may have different effects on individual whales, on other marine wildlife (for example disturbance from noise associated with firearms), and on public and hunter safety. NMFS concluded this EIS could best identify and illuminate the impacts associated with alternative hunting methods by identifying reasonable options for striking and killing whales and by collectively treating those options as an element common among action alternatives, because each different method of hunting could be accommodated by all of the action alternatives. In the analysis of all action alternatives, therefore, this EIS will examine the impacts of the two options for striking and killing whales – the proposed method and an alternative method.

TABLE 2-1. PRIMARY DIFFERENCES AMONG ALTERNATIVES

WHALE HUNTING COMPONENTS		ALTERNATIVES					
		1 NO-ACTION	2 PROPOSED ACTION	3 HUNT OUTSIDE STRAIT, NO TIMING RESTRICTIONS, NO IDENTIFIED WHALE LIMITS	4 SANCTUARY AND NATIONAL WILDLIFE REFUGE RESOURCE ALTERNATIVE	5 HUNT OUTSIDE STRAIT, NO TIMING RESTRICTIONS, MORE RESTRICTIVE NUMBERS, NO IDENTIFIED WHALE LIMITS	6 HUNT ANYWHERE IN U&A, NO TIMING RESTRICTIONS, NO IDENTIFIED WHALE LIMITS
Hunt timing		Not authorized	December 1 through May 31	January 1 through December 31	Same as Alternative 2	Same as Alternative 3	Same as Alternatives 3, 5
Hunt area		None	U&A west of Bonilla-Tatoosh line1	Same as Alternative 2	Same as Alternative 2,3, except prohibit hunting within 200 yards of rocks and islands at all times	Same as Alternatives 2, 3	Entire U&A2
Maximum limit for harvested, struck, and struck and lost whales	Annual	0	Up to 5 harvested, 7 struck, and 3 struck and lost	Same as Alternative 2	Same as Alternatives 2, 3	Up to 2 harvested, 3 struck, and 1 struck and lost	Same as Alternative 2
	Five-year	0	Up to 20 harvested, 35 struck, and 15 struck and lost	Same as Alternative 2	Same as Alternatives 2, 3	Up to 10 harvested, 15 struck, and 5 struck and lost	Same as Alternatives 2, 3, 4
Additional limits for identified whales		Not Applicable	Yes	No	Same as Alternative 2	Same as Alternative 3	Same as Alternatives 3,5

1 U&A west of Bonilla-Tatoosh line is the Makah Tribe's U&A fishing grounds off the coast of Washington and west of the Bonilla-Tatoosh line, excluding the Strait of Juan de Fuca. See Figure 1-1.

2 The entire Makah Tribe U&A includes the Strait of Juan de Fuca and waters off the coast of Washington, as adjudicated by United States v. Washington (1974 and 1985). See Figure 1-1.

The Makah Tribe proposes to hunt gray whales using a hand-thrown, toggle-point harpoon to strike the whale and a .50 caliber rifle to kill the whale. As another option, this analysis also evaluates using explosive grenades to strike and/or kill whales. Both the Tribe's proposed method and this optional method are described in 2.3.3.2.5, Overview of Proposed Hunting Method. Other methods raised during the scoping process that are not analyzed in detail in this EIS are discussed in Section 2.4, Alternatives Considered but Eliminated from Detailed Analysis (Section 2.4.5, Employ Different Hunting Methods).

2.3.3 Alternative 2 (Proposed Action)

NMFS based its description of the Makah Tribe's proposed action on the Tribe's February 2005 MMPA waiver request and subsequent January 2006 request that NMFS take all actions necessary under applicable laws to allow treaty whale hunting. In its waiver request, the Tribe referred to a whale management plan it adopted in 1998 and revised in 2001 to govern its future proposed whale hunts. The Tribe's waiver request includes a proposal that NMFS issue regulations with provisions similar to those contained in the 2001 Gray Whale Management Plan. The waiver request and the management plan are provided as Appendix A to this EIS, along with the Makah's subsequent letter requesting that NMFS complete all legal processes necessary to authorize any hunts. In its MMPA waiver request, the Tribe proposed to abide by the specific conditions described below.

2.3.3.1 Regulatory Actions Requested of NMFS

The Makah Tribe is seeking to conduct limited hunting of gray whales in the coastal portion of the Makah U&A, (that is, excluding the Strait of Juan de Fuca) (Figure 1-1). Whaling is a right expressly secured in the 1855 Treaty of Neah Bay. Pursuant to the court's decision in *Anderson v. Evans* (2004), to hunt whales, the Makah Tribe is seeking to obtain domestic authorization from NMFS under two statutory authorities — the MMPA and the WCA.

Specifically, NMFS would have to authorize any Makah whaling by (1) waiving the moratorium prohibiting take of marine mammals under Section 101(a)(3)(A) of the MMPA, (2) promulgating regulations implementing the waiver and governing the hunts in accordance with Section 103 of the MMPA, (3) issuing any necessary permits to the Makah under Section 104 of the MMPA, and (4) entering into a cooperative agreement for co-management of the hunt and publishing any

relevant aboriginal subsistence whaling quotas under the provisions of the WCA (see Section 1.2.3, Marine Mammal Protection Act, and Section 1.2.4, Whaling Convention Act, for a discussion of those statutes).

2.3.3.2 Eastern North Pacific Gray Whale Hunt Details

2.3.3.2.1 Species (Element Common among Action Alternatives)

The Makah Tribe is requesting a waiver to hunt gray whales only. No other species are included in their waiver request; thus, intentional take of marine mammals is not analyzed in this EIS (though the potential for incidental take is considered).

2.3.3.2.2 Numbers and Status of Whales Harvested (Five-year and Annual)

The Tribe proposes to limit the number of gray whales that may be harvested to no more than five whales in any calendar year and no more than 20 whales in any five-year period. A harvested whale is one that has been secured to the Makah canoe and/or chase boats and support vessels with floats and towing lines. Harvested whales might be landed on the beach for butchering, or lost at sea (i.e., struck and lost) and presumed dead. The Tribe's request refers to 'take' of whales, a term defined in the IWC Schedule to mean "to flag, buoy, or make fast to a whale catcher" (IWC Schedule 2006, paragraph (1)(c)), but defined in the MMPA to mean "harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill" (16 United States Code [USC] 1362(13)). To clarify the Makah's proposed hunting activities for the purposes of this EIS, NMFS substituted the phrase 'harvest' for 'take.' All whale hunting activities that the Makah propose (i.e., harvests, strikes, struck and lost, and harassed) are takes under the MMPA. The Tribe also proposes to limit the number of harvested whales further if necessary to meet international treaty obligations of the United States under the International Convention for the Regulation of Whaling (ICRW), or to prevent the abundance of the gray whale stock from falling below its optimum sustainable population (OSP) level (Section 3.4.2.1, Marine Mammal Protection Act Management, provides an explanation of OSP).

Additional Limits on Harvesting Whales Identified in Local Survey Areas

Generally, gray whales migrate seasonally along the coast of North America between a summer range as far north as the Chukchi and Beaufort Seas to a winter range as far south as the Baja California Peninsula and Gulf of California in northwestern Mexico. During the spring northward migration, most gray whales migrate as far north as the Bering, Chukchi, and Beaufort Seas to feed intensively during the summer months. Some whales find adequate food sources further south along their migration and remain to feed during the summer feeding period (approximately

June 1 through November 30). The whales that feed in the more southern portion of the summer feeding range are distributed along a continuum from California to southeast Alaska, including off the coast of Washington. NMFS' National Marine Mammal Lab (NMML) maintains a photographic catalog of gray whales observed in local survey areas during the summer feeding period, including the area from northern California to northern Vancouver Island, referred to here as the Pacific Coast Feeding Aggregation (PCFA) survey area, and a smaller survey area within the PCFA survey area from Oregon to southern Vancouver Island (ORSVI). Distinctive markings on the whales' backs and flukes allow individual identification. Using the photographic catalog, scientists can determine whether an identified whale has been sighted previously in either the PCFA or ORSVI survey areas during the summer feeding period. Section 3.4.3.1, General Life History and Biology (of ENP gray whales), describes the biology and ecology of gray whales in greater detail.

The Makah's proposed action contains two conservation measures related to these identified whales. They are (1) restricting the time and area of any hunt to reduce the likelihood that an identified whale would be harvested (discussed in Section 2.3.3.2.3, Location of Hunt, Area Restrictions, and Section 2.3.3.2.4, Timing of Hunt, Seasonal Restrictions) and (2) ceasing the hunt if a predetermined number of identified whales in the PCFA survey area are harvested.

The Makah Tribe's waiver request states that the Makah Department of Fisheries Management observers (Section 2.3.3.2.7, Other Environmental Protection Measures, Makah Department of Fisheries Management and NMFS Observers and Monitoring) would photograph any whale landed and provide the photographs to NMFS to compare with the NMML's photographic catalog. This would allow NMFS and the Tribe to determine if any harvested whale was an identified whale (a whale photographed in the PCFA and ORSVI survey areas in a prior summer feeding period). The Makah propose to use the photographic comparison to limit the number of identified whales that would be harvested. They would stop hunting when a predetermined number of matches are made to NMML's photographic catalog. That number would be established by calculating an allowable bycatch level using a method similar to one NMFS uses under the MMPA. The Makah's waiver request is discussed in detail in Appendix A, including information about the proposed 'allowable bycatch level' methodology. See Section 3.4.2.1, Marine Mammal Protection Act Management, Section 3.4.3.3.1, Summer Range Distribution and Habitat Use, and Section 3.4.3.4.4, Population Dynamics and Trends, and Section 3.4.3.4.5, Potential Biological Removal, for more information about how NMFS manages marine mammals and the gray whale stock.

Strikes (Five-year and Annual)

The Makah Tribe would limit the number of gray whales that may be struck to no more than seven whales in any calendar year and no more than 35 whales in any five-year period. The Makah define 'strike' in their request as "any blow or blows delivered to a whale by a harpoon, rifle, or other weapon which may result in death to a whale, including harpoon blows if the harpoon is embedded in the whale, and rifle shots that hit a whale." NMFS considers this definition equivalent to the WCA regulatory definition of a strike, meaning "hitting a whale with a harpoon, lance, or explosive device." A whale is considered to be struck when a harpoon is or has been embedded in a whale. This definition of 'strike' includes situations where the harpoon disengages from a whale; is retrieved to the water surface clean of skin, blubber, and other whale parts; and there is no other evidence of potentially lethal injury (such as blood in the water). The Tribe also proposes to limit the number of whales struck to further meet ICRW obligations of the United States, or to prevent the ENP gray whale stock abundance from falling below its OSP level.

Struck and Lost (Five-year and Annual)

Whales that are known to be struck, but not ultimately secured to the vessel, are considered to be 'struck and lost' whales. The Tribe proposes to restrict the number of struck and lost whales to no more than three whales in any calendar year and no more than 15 whales in any five-year period. These numbers are included in the numbers for annual and five-year proposed strikes (i.e., three struck and lost whales per year is part of the seven whale strike limit per year, and not additive). This struck and lost limit is a measure voluntarily imposed by the Tribe to avoid excessive numbers of struck and lost animals while hunting.

If the struck and lost quota is met or exceeded, the Tribe proposes to stop hunting to allow the opportunity to reevaluate techniques and address potential problems.

Harassed

The Tribe recognizes that whales not harvested or struck in any hunt may be subject to harassment as defined in the MMPA (see Section 1.2.3.2, Section 101(a) Take Moratorium, for a definition of MMPA take, which includes both Level A and Level B harassment). Based on experience with whale hunts in 1999 and 2000, the Tribe estimates that there could be approximately 10 approaches and four unsuccessful harpoon attempts for every whale struck. The Tribe would classify unsuccessful harpoon attempts as Level A harassment, and it anticipates that no more than 28 gray whales would be subject to such harassment in any calendar year. The Tribe

would classify approaches with no harpoon attempts as Level B harassment, and it anticipates that the number of whales subject to such harassment in any calendar year would not exceed 140.

Age and Reproductive Status

The Tribe proposes to prohibit the striking of a whale calf, or any whale accompanied by a calf. Gray whale calves generally accompany adult female parents during migration and may be observed as pairs of traveling whales.

2.3.3.2.3 Location of Hunt (Area Restrictions)

The area where the Makah Tribe proposes to hunt is confined to its U&A west of the Bonilla-Tatoosh line, excluding the Strait of Juan de Fuca. WAC 220-16-490 defines the Bonilla-Tatoosh Line as a line projected from the most westerly point on Cape Flattery to the lighthouse on Tatoosh Island, then to the buoy adjacent to Duntz Rock, then to Bonilla Point on Vancouver Island. The Makah's U&A, as adjudicated in *United States v. Washington* (1974 and 1985), also excludes grounds that the Makah historically hunted and fished, but that are now beyond the exclusive economic zone (EEZ), which is also the boundary between Canada and the United States. According to the Tribe's waiver request, restricting the hunt to the area of its U&A outside the Strait of Juan de Fuca, in conjunction with the proposed seasonal restrictions (Section 2.3.3.2.4, Timing of Hunt (Seasonal Restrictions), is designed to avoid any intentional harvest of gray whales identified within the PCFA survey area.

2.3.3.2.4 Timing of Hunt (Seasonal Restrictions)

The Makah's waiver request includes timing restrictions that would prohibit hunting from June 1 to November 30 in any calendar year. According to the Tribe's waiver request, this measure is "designed to avoid any intentional harvest of gray whales" that have been identified within the PCFA survey area by hunting outside of times that coincide with the summer feeding period.

2.3.3.2.5 Overview of Proposed Hunting Method (Element Common among Action Alternatives)

The Makah Tribe plans to use both traditional and modern methods for hunting whales to balance the preservation of traditional cultural methods, safety, and the need for increased hunting efficiency. Traditional and modern methods are relative terms because, as discussed in Section 3.9, Cultural Resources, the Tribe has developed technological innovations over time. The Tribe considers traditional methods to be those that would be maintained based on their contribution to the ceremonial value of whaling. The Tribe's request includes the use of modern

equipment when needed for safety, increased technological effectiveness, and/or to meet MMPA permit requirements.

The proposed method includes hunting whales from one or two sea-going canoes, at least 30 feet long, and carved by the Makah. Each canoe would be manned by an eight-person whaling crew (all Makah tribal members) and would include a captain, harpooner, and paddlers. One or more chase boats, 24 feet long and powered by a minimum 200-horsepower engine capable of safely towing an adult gray whale, would accompany the canoes. Each chase boat would be manned by a pilot, diver, rifleman, backup harpooner, and at least one other crew member. Each chase boat would be equipped with a navigation system capable of fixing the vessel's position on the water.

Method of Striking and Killing

The harpooner would use stainless steel harpoons with a toggle point. Each harpoon would be secured to a rope with float(s) attached. The harpooner would use one or more harpoons to make the first strike on the gray whale. If a harpoon struck and affixed the toggle point and floats to the whale with the harpoon line attached, the rifleman in the chase boat would shoot it at close range with a specially developed, high-powered, .50-caliber-round rifle with the intent of killing the whale with a shot to its central nervous system. A diver would attempt to sew the whale's mouth shut to prevent the whale from sinking.

Optional Method of Striking and Killing

Although the Tribe proposed a specific method of striking and killing whales, public comments asked us to consider other methods. Rather than develop full alternatives to analyze other reasonable methods, this EIS considers optional methods of striking and killing whales that would be reasonable regardless of the action alternative. For this reason, although other options for striking and killing are not part of the Tribe's proposal, this EIS will examine an optional method as an element common among action alternatives, including the proposed action.

The optional method would involve striking whales with a hand thrown darting gun that fires an explosive projectile into the whale. The hand thrown darting gun consists of a barrel (to hold an explosive projectile) that is attached to a wooden shaft equipped with a toggle-point harpoon. The harpoon is intended to penetrate the whale and attach a line and float to secure the whale and assist in its recovery (O'Hara et al. 1999; Øen 2000; IWC 2007a). The barrel contains a trigger rod that ignites a propellant or 'pusher' charge. This pusher charge fires the explosive projectile into the whale's body. The explosive projectile has a time delay fuse. The explosive projectile may be either black powder or penthrite and is intended to kill when it explodes inside the whale,

either through shrapnel or blast injury. The cervical and cranial thoracic regions are the critical targets for the darting gun projectile (O'Hara et al. 1999).

If the initial darting gun projectile (primary strike) fails to kill the whale, the whale would be killed with additional explosive grenades delivered using either a smooth-bore, eight-gauge shoulder gun or a darting gun.

Impacts on individual whales from each of the optional hunting methods are described in further detail in Section 3.4.3.6.1, Known and Potential Anthropogenic Impacts, Aboriginal Subsistence Whaling.

Securing and Towing the Whale

Following a successful harvest, the whaling crew would secure the whale with a line to tow it to a beach (mostly likely on the Makah Reservation). Once secured at the beach, tribal members could participate in celebrations and butchering, and tribal and NMFS biologists could conduct photographic analysis and tissue sampling. Most of the whale products from the beached whale would be removed within 24 hours, including tissue samples collected by biologists.

The Tribe proposes to conduct research and development to refine hunting methods further. After consultation with NMFS, the waiver request proposes that the Makah Whaling Commission be able to amend tribal regulations periodically to improve the safety, effectiveness, and humaneness of the gray whale hunt.

2.3.3.2.6 Whale Product Use and Distribution (Element Common among Action Alternatives)

Limited Commercial Use and Distribution

The Makah Tribe would not sell or offer for sale whale products to the extent prohibited in WCA regulations. 50 C.F.R. 230.4(f) prohibits any person from selling or offering for sale whale products taken from an aboriginal subsistence hunt, except for authentic articles of native handicraft. MMPA Section 102(f) prohibits take of whales incidental to commercial whaling. Although Section 101(b) of the MMPA allows Alaska Natives to sell edible whale products in native villages and towns in Alaska or for native consumption, the Makah would not sell or offer for sale any edible whale products. Any sales or offers to sell would be limited to non-edible whale products used to create authentic articles and native handicraft and clothing, including artwork, within the United States.

The Makah Tribe would prohibit tribal members who participate in any whale hunt from receiving monetary compensation, also in accordance with WCA regulations (50 CFR 230.4(e)).

Non-Commercial Use and Distribution

The Makah, within the borders of the United States, would be able to share whale products from any hunt (1) with relatives of participants in the harvest, (2) with others (*i.e.*, both non-relatives and relatives) in the local community, or (3) with persons in locations other than the local community with whom local residents share familial, social, cultural, or economic ties (see Section 1.2.4.1.3, IWC Aboriginal Subsistence Whaling, for provisions of the most current IWC Schedule and for the definition of subsistence use as adopted by consensus at the 2004 annual meeting).

2.3.3.2.7 Other Environmental Protection Measures

Seabirds

Tatoosh Island and White Rock (which are located within the coastal portion of the Makah's U&A) support large seabird breeding colonies (Section 3.5.3.2.2, Non-Listed Birds and Their Associated Habitats). The Tribe proposes to avoid striking whales within 200 yards of Tatoosh Island and White Rock during May to minimize disturbance to feeding and nesting sea birds. The Tribe has further proposed that it would not hunt from June 1 through November 30, which would also help to protect seabird breeding colonies.

Public Safety Measures and Enforcement (Element Common among Action Alternatives)

The Tribe proposes to conduct public safety measures at least as restrictive as those described in its 2001 Gray Whale Management Plan. Those measures include the public safety measures the Makah Tribe previously employed in the 1999 and 2000 hunts, as well as additional measures that the Tribe plans to use for future whale hunts. These are the measures (described in more detail in Section 3.15, Public Safety) proposed by the Tribe:

- The Makah Tribe whalers would use modern methods to take a whale quickly; this would reduce the potential for a wounded whale to injure hunters or people in other vessels.
- All whalers would participate in whaler safety training lessons and drug and alcohol testing (see Training and Certification Process for Tribal Whalers below).
- The whaling captain would also participate in captain training and certification. The captain would be responsible for the safety of his crew.
- Riflemen and/or whalers in charge of firing explosive charges would participate in training for proficient and accurate shooting under simulated hunt conditions.

- The rifleman or whaler in charge of firing explosive charges on board the chase boat would not be able to discharge his weapon until authorized to fire by a safety officer designated by the whaling captain. If a rifle were used, the safety officer would not authorize the discharge of the rifle unless the barrel of the rifle were above and within 30 feet from the target area of the whale, and the rifleman's field of view were clear of all persons, vessels, buildings, vehicles, highways, and other objects or structures that if hit by a rifle shot could injure humans or property.
- The whaling captain would suspend the hunt if visibility were less than 500 yards in any direction.
- The whaling canoe would have additional support boats available to provide first aid to whalers and help secure and tow the whale.
- All whaling equipment would be inspected before whaling.
- The Coast Guard would enforce the provisions of its permanent regulated navigation area (RNA) and moving exclusionary zone (MEZ), which would minimize the chance of bystanders accidentally being harmed during a hunt.

In the Tribe's waiver request, it indicates that it would comply with additional safety measures NMFS includes in an MMPA waiver, regulations, or permit. The plan also indicates that the Makah Department of Fisheries Management would work with the Coast Guard to close off the designated whale hunting area to recreational and commercial vessel traffic during the hunt.

Training and Certification Process for Tribal Whalers (Element Common among Action Alternatives)

If NMFS were to authorize hunting by waiving the MMPA moratorium on take, issuing regulations and any necessary permits, and publishing any quota in the Federal Register, the Makah would require all tribal members who engage in whaling to be under the control of a whaling captain holding another valid whaling permit (also referred to as a license) issued by the Makah Tribal Council (see Section 1.2.4.2, National Whaling Governance under the WCA, for an explanation of responsibilities held by Native American whaling organizations). Whaling permits issued by the council would incorporate and require compliance with all NMFS requirements, as well as tribal regulations. The regulations would also provide a training and certification process for all members who participate in whaling, as required by NMFS' WCA implementing regulations. Whaling team members may also partake in spiritual preparations.

The Makah Tribal Council would not issue a permit to a whaling captain unless it determined that the whaling captain and each whaling team member had been certified by the Makah Whaling Commission to perform his assigned role on the whaling crew.

Makah Department of Fisheries Management and NMFS Observers and Monitoring (Element Common among Action Alternatives)

The Makah Tribe's waiver request includes accommodations for both a Makah Department of Fisheries Management observer and a NMFS observer to accompany the whaling team in the chase boats. The Tribe would provide the designated NMFS observer with at least 24-hour notice of whaling permit issuance to the whaling captain by the Makah Tribal Council, unless the NMFS observer was already present on the Makah Reservation. The Tribe's request also indicates that the NMFS observer could collect specimen material from landed whales. This would include ovaries (as applicable), ear plugs, baleen plates, stomach contents, and other tissue samples. The Makah Department of Fisheries Management observer would be responsible for recording the time, date, location, and physical characteristics of each whale struck and, for each whale harvested, the body length, fluke width, sex, any fetus found in a landed whale, and the time to death for all whales harvested. The Tribe would have to report all monitoring data to NMFS annually.

Enforcement (Element Common among Action Alternatives)

Tribal regulations would include provisions requiring tribal enforcement of the regulations and permit terms and conditions NMFS adopted, if hunting were authorized. These regulations would include criminal sanctions, such as fines and imprisonment, up to the limits imposed by the Indian Civil Rights Act. Violators may also be barred from exercising treaty fishing, hunting, and/or whaling rights for up to three years. Makah Department Natural Resources Enforcement has been designated as the tribal law enforcement agency responsible for administering the requirements of whaling regulations and permits. A whaling captain would be responsible for any violations committed by a member of the whaling team under his control.

In the event of violations of NMFS' regulations governing any authorized hunt, federal enforcement would also be possible. Potential offenses could include violation of the WCA and MMPA and any implementing regulations.

2.3.4 Alternative 3 (Hunt Outside the Strait of Juan de Fuca with No Restrictions on Timing or Limits on Identified Whales)

Alternative 3 has the same area for the hunt as Alternative 2, but would eliminate timing and other restrictions on killing and landing identified whales. Thus, the Makah Tribe could hunt

whales at any time of year and would not stop hunting based on the number of identified whales harvested. All other hunt conditions and restrictions described under Alternative 2 would be the same under Alternative 3.

This alternative provides information to help determine possible conservation benefits to gray whales and/or to the local environment resulting from two aspects of the Tribe's proposal that are intended to limit impacts on identified whales. These two aspects are as follows: (1) the Tribe's proposal to cease hunting if it lands a predetermined number of whales found in the photo identification catalog, and (2) the Tribe's proposal to limit the hunt to months associated with the northward and southward migrations, when fewer identified whales are present in the PCFA and ORSVI survey areas, and more of the whales present are likely to be migrating whales not previously identified in the survey areas.

By removing the additional limits for identified whales, this alternative explores the cultural and social impacts on the Tribe of imposing that additional restriction, as well as the impacts on other social and economic values. Removing the timing restrictions also helped illuminate effects of hunt timing on Makah cultural and social values, public and hunter safety, aesthetics, and other social and economic values.

2.3.5 Alternative 4 (Sanctuary and National Wildlife Refuge Resource Alternative)

Alternative 4 would have the same conditions as Alternative 2, except that it would also prohibit vessels associated with any Makah hunt (including Makah vessels and associated protest, media, and law enforcement vessels) from entering the 200-yard voluntary exclusionary zone that the United States Fish and Wildlife Service has established around all rocks or islands comprising the Washington Islands National Wildlife Refuges.

This alternative explores the conservation benefits to Sanctuary and National Wildlife Refuge resources, specifically seabirds and hauled-out marine mammals, resulting from vessel and air traffic associated with the hunts. Although this alternative would generally prevent vessel entry and striking a whale within the 200-yard exclusionary zone, the Makah hunters and chase boats would have to follow any struck whale (attached to the canoe by harpoon lines) into the 200-yard zone to dispatch it.

2.3.6 Alternative 5 (Hunt Outside the Strait of Juan de Fuca with No Restrictions on Timing, More Restrictive Numbers [Harvested, Struck, and Struck and Lost], and No Limits on Identified Whales)

Alternative 5 would have the same hunt area as Alternative 2, but would differ by eliminating timing restrictions and the restrictions on landing identified whales, as well as imposing additional restrictions on the total number of whales harvested, struck, and struck and lost. The restrictions on numbers of whales would be (1) no more than two harvested whales annually and no more than 10 harvested whales in any five-year period, (2) no more than three annual strikes and no more than 12 strikes in any five-year period, and (3) no more than one struck and lost whale annually and no more than four struck and lost whales in any five-year period. Thus, the Makah Tribe could hunt whales at any time of year and would not stop hunting based on the number of identified whales landed, but would be allowed to harvest, strike, and strike and lose fewer numbers of whales than included in its waiver request and allowed under the current annual and five-year IWC catch limits set in the Schedule for the ENP gray whale stock and allocated by bilateral agreement between the United States and the Russian Federation.

This alternative explores the conservation benefit to gray whales and/or to the local environment inherent in reducing the total numbers of whales harvested compared with limiting the hunt based on photo identification and area and seasonal restrictions. It also addresses the environmental and socioeconomic benefits of limiting the total numbers of whales hunted and the cultural and social impacts of decreased landings and strikes on the Makah Tribe.

2.3.7 Alternative 6 (Hunt Anywhere in the U&A with No Restrictions on Timing or Limits on Identified Whales)

Alternative 6 is the same as Alternative 3, except that the Tribe could hunt throughout its entire U&A, including the Strait of Juan de Fuca. Similar to Alternatives 3 to 5, there would be no harvest limitations specifically for identified whales.

This alternative reviews the cultural and social impact on the Makah Tribe of allowing it to hunt throughout its entire U&A, as the Tribe hunted whales for the past 1,500 years. This alternative also addresses (1) the impact on conservation of gray whales and/or the local environment of allowing hunting in the Strait of Juan de Fuca with no time limits; (2) the impact on aesthetic and other social and economic aspects of hunting in the Strait; (3) the impact to the Tribe of allowing hunting in its entire U&A, including the safety of the hunters if they hunted in the Strait of Juan de Fuca compared to the open ocean; and (4) the public safety impacts of a hunt in the Strait of Juan de Fuca.

2.4 Alternatives Considered but Eliminated from Detailed Analysis

During the scoping process of this EIS, NMFS reviewed several alternatives and/or options within alternatives, but eliminated them from further detailed analysis. The reasons why specific alternatives were eliminated from further study are explained below.

2.4.1 Non-Lethal Hunt

The non-lethal hunt alternative was requested by some members of the public. The commenters did not fully describe the details of this alternative, but it would likely include the Tribe engaging in some ceremonies and training preparatory to a hunt, a pursuit of whales on the water, and a mock attack on a whale, but would not culminate in a whale being killed or transported to shore. Federal treaties and statutes are important in informing and identifying reasonable alternatives. Under the WCA and implementing regulations, whaling (which is synonymous with hunting in the aboriginal subsistence use context) clearly contemplates killing and attempts to kill whales (16 USC 916(j) and 50 CFR 230.2). Likewise, the definition of take under IWC and the MMPA contemplates lethal takes (16 U.S.C. 1362(13); 50 CFR 216.3). Furthermore, the right of fishing and of whaling or sealing was secured by the Makah through the 1855 Treaty of Neah Bay, which was written when fishing and whaling or sealing conveyed the opportunity to take animals lethally from each of these categories.

The Tribe's waiver request seeks authorization to kill whales under those existing legal authorities and its interpretation of the scope of its treaty. The non-lethal hunt alternative contemplates, in effect, the No-action Alternative. As such, the impacts of this alternative are similar enough to those of the No-action Alternative so that its detailed analysis would not provide additional information to inform agency decision-making or the public's consideration. The conservation impacts on gray whales and the local ecosystem would be the same as the No-action Alternative because no gray whales would be removed from the population or from the ecosystem. The impact to the Makah would be the same as the No-action Alternative, because they would not be allowed to hunt whales according to their historical and contemporary cultural understanding or within their understanding of the scope of their treaty right. In this respect, a non-lethal ceremonial hunt would not meet the Makah Tribe's purpose and need. The other social and economic impacts would be the same as the No-action Alternative because a non-lethal hunt would not have significantly different public safety, aesthetic, sentimental, or economic impacts than no hunt. Moreover, if a non-lethal hunt were to be analyzed in detail, the MMPA waiver

process would apply because harassment of a live animal (which would likely occur under a ceremonial hunt) would be considered a take under the MMPA.

2.4.2 Subsistence Use of Drift Whales

On July 16, 1995, a female gray whale was found entangled and drowned in a tribal marine set net salmon fishery in the Strait of Juan de Fuca outside of Neah Bay. NMFS biologists and the tribal fisherman who discovered the whale removed the carcass from the net, and the Tribe butchered the whale for subsistence use before the meat spoiled. All tribal marine set nets were removed. The Makah Tribal Council issued a press release clarifying that it did not authorize any tribal member to net a whale and intended to seek permission to conduct a ceremonial and subsistence harvest (Makah Tribal Council 1995b). The Tribe also indicated that it would continue to work with NMFS to minimize taking of marine mammals in set nets. A NMFS report indicated that there were at least four incidences of gray whale entanglements over the last 15 to 20 years (Angliss and Outlaw 2008). The use of the female gray whale for subsistence represents the first time in recent times the Makah Tribe sought to exercise its treaty rights for tribal consumption (NMFS 1995). Several commenters suggested that the Makah use drift whales (also known as stinker whales), rather than live whales, for subsistence purposes. Drift whales are whales that die naturally or as a result of some human activity other than a directed hunt (for example, entanglement in fishing gear). This alternative is essentially the same as the No-action Alternative. The conservation impacts on gray whales and the local ecosystem would be the same as those under the No-action Alternative, because no gray whales would be removed from the population or from the ecosystem as the result of a hunt. The social and cultural impacts on the Makah would be the same as those under the No-action Alternative, because they would not be allowed to hunt whales according to their historical and contemporary cultural understanding and within their concept of the scope of their treaty right. In this respect, a decision allowing only subsistence use of drift whales would not meet the Makah Tribe's purpose and need.

While this alternative would differ from the No-action Alternative because it would provide the Makah with an occasional and unpredictable supply of whale products, the agency could provide for the Tribe's use of drift whales without invoking the MMPA waiver provision (NOAA and Makah Indian Tribe 1989). The other social and economic impacts would be the same as those under the No-action Alternative, because the subsistence use of drift whales would not have significantly different public safety, sentimental, or economic impacts than a no-hunt alternative.

The use of drift whales might have an impact on aesthetics, but some of that impact (the sight of a dead whale being butchered on the beach) would be the same as in any of the action alternatives.

2.4.3 Hunt Other Marine Mammal Species Traditionally Hunted by the Tribe

This alternative, which was suggested by some members of the public, would substitute a gray whale hunt with a hunt for a different whale species or another marine mammal. Because the United States has not requested on behalf of the Makah that the IWC set aboriginal subsistence whaling catch limits for another large cetacean, and because the IWC has not considered such a request, the WCA precludes NMFS from publishing a quota for other whale species for the use of the Makah Tribe. In addition, some whales, such as the humpback whale and some marine mammal species (such as Steller sea lions), are listed under the Endangered Species Act (ESA).

Also, if non-ESA listed marine mammal species, such as pinnipeds or small cetaceans (e.g., dolphins and porpoises), were entirely or partially substituted for a gray whale, the total biomass harvested and the method used would likely differ (i.e., more individuals caught using different catch methods). As explained in Section 3.9, Cultural Resources, whaling and sealing do not hold equivalent historical or contemporary ceremonial and subsistence harvest values for the Makah Tribe. These differences would include the type of food obtained (blubber, meat, and whale bone), associated spiritual ceremonies, hunting activities (methods, timing, and area), and subsistence uses. In this respect, a decision requiring substitution of other marine mammal species in lieu of gray whales would not meet the Makah Tribe's purpose and need. The Makah's request is to exercise its treaty right to whale. A hunt focused on non-ESA listed pinnipeds and small cetaceans would be a different type of action, and it is too speculative to allow for an EIS analysis.

2.4.4 Change the Hunt Location

NMFS considered other alternatives for either increasing or decreasing the Makah gray whale hunting area. Hunt location options that were considered but eliminated from further study are described in the following sections.

2.4.4.1 Hunt Outside the OCNMS but Within the U&A

This option would allow the Makah to hunt whales only within the Strait of Juan de Fuca and a small portion of the Tribe's U&A seaward of the outer Olympic Coast National Marine Sanctuary (OCNMS) boundary (Figure 1-1). Alternative 6 would include hunting within the Strait of Juan de Fuca; thus, it captures that portion of this alternative option. The area off the coast of Washington that is outside the Strait of Juan de Fuca and the OCNMS but is within the

Makah U&A is too small to provide for a successful hunt and is beyond the 30-mile offshore area where most whales migrate past Washington (see Section 3.4.3.3, Distribution and Habitat Use, for more information). In addition, ocean conditions are more challenging further offshore, making the hunt more difficult and hazardous when considering public safety.

Although the purpose of this alternative is to safeguard the natural resource values that led to designation of the OCNMS as a national marine sanctuary, OCNMS regulations allow for a Makah tribal hunt if otherwise legally permitted (15 CFR 922.152(a)(5)). OCNMS regulations allow for taking marine mammals pursuant to any treaty with an Indian tribe, as long as the taking is consistent with the MMPA, ESA, and Migratory Bird Treaty Act (16 USC 1431 *et seq.*). Alternative 4 is intended to be an alternative that would allow us to consider Sanctuary resources in greater detail. An alternative to hunt outside the Sanctuary was eliminated from detailed consideration because portions of it are already being analyzed (hunt in the Strait of Juan de Fuca), and the portion not already being analyzed (hunt seaward of the OCNMS boundary) is impracticable and not designed to protect identifiable gray whales.

2.4.4.2 Hunt Outside of Areas Frequented by Identified Whales

Identified whales have been observed in the Makah's U&A, an area that is within the PCFA and ORSVI survey areas, year-round. There is no area within the Makah U&A that is not potentially frequented by identified whales.

2.4.4.3 Hunt in Russia with Chukotka Natives

Members of the Makah Tribe currently have the option of hunting with the Chukotka Natives. Only those Makah Tribe members who participate in the hunt in Russia would have the opportunity to share in the ceremonial and subsistence value of the hunt because, by international law (Convention on the International Trade of Endangered Species), no whale products may be transferred out of the country of origin. Under the MMPA, in addition to international law, importing a marine mammal product without receiving authorization under the waiver process would be illegal. This option would not allow the Makah Tribe to conduct a ceremonial hunt in its U&A using traditional Makah practices, nor would most of the tribal members be able to participate in celebrations that occurred when a whale was landed in Russia. This option would not meet the Tribe's stated purpose and need to exercise its cultural values or treaty right. This option would require no action on the part of NMFS; therefore, it is similar to the No-action Alternative. Analysis of this alternative would not provide the agency or the public with

information useful in informing NMFS's decision, since this alternative would require no decision on the agency's part.

2.4.5 Employ Different Hunting Methods

During the scoping process, NMFS identified the following methods of striking and killing whales, based on the Tribe's request, internal scoping, public comments, and an examination of aboriginal subsistence hunting world-wide: 1) a toggle point harpoon to strike the whale and a .50 caliber rifle to kill the whale (as proposed by the Tribe); 2) a darting gun with explosive projectile as the striking and/or killing weapon; 3) a shoulder gun with explosive projectile as the killing weapon; 4) traditional methods only (harpoons to strike whales and lances to kill whales); and 5) a smaller caliber rifle as the killing weapon. The following sections explain NMFS' rationale for not analyzing options 4 and 5 in detail. The other options are analyzed in detail as an element in common among the action alternatives.

2.4.5.1 Hunt Using Only Traditional Methods

This alternative, suggested in public comment, is best characterized as requiring the Makah to hunt using only pre-contact hunting methods. This would mean, for example, using mussel-tipped harpoons instead of toggle-point or steel-tipped harpoons, prohibiting the use of rifles to kill whales, and prohibiting the use of chase boats with outboard motors to follow the hunt and to tow whales. More information about pre-contact Makah hunting techniques can be found in Section 3.10.3.4, Makah Historic Whaling.

This alternative was eliminated from detailed consideration for a variety of reasons. As stated above in Section 2.3.2, Elements Common among Action Alternatives, the information presented in this EIS related to the method of the hunt must support and inform the agency's future decisions about waiving the MMPA moratorium or issuing a permit. The agency may only issue a permit to take a marine mammal upon a determination that the manner of taking is humane (16 USC 1374(b)(2)(B)), which the MMPA defines as "the least possible degree of pain and suffering practicable" (16 USC 1362(4)). A whale may take several hours or days to die using only pre-contact methods. Modern technologies, such as those analyzed in detail in this EIS, result in quicker times to death. Hunting using only pre-contact methods would not result in the least possible degree of pain and suffering practicable.

WCA regulations also require that hunting not be conducted in a wasteful manner, "which means a method of whaling that is not likely to result in the landing of a struck whale or that does not include all reasonable efforts to retrieve the whale" (50 CFR 230.2). The use of powered vessels

and backup hunters (e.g., harpooners and the rifleman) to chase and tow whales represent reasonable efforts to retrieve any stricken whale and are more likely to meet WCA regulatory requirements than hunting using only traditional vessels.

Safety of hunters and the public must also be considered. A wounded whale experiencing a lengthy death could pose a greater risk to the whaling crew and public. This situation can be avoided by using some modern tools.

This alternative also does not meet the Makah's purpose and need. Requiring the Makah to hunt with pre-contact weapons, boats, and other tools is not justified because technologies, including using steel-tipped harpoons and accepting tows from steam-powered commercial tow boats, were used in traditional hunts as they became available.

2.4.5.2 Kill Whales with Smaller Caliber Rifles

Many of the aboriginal subsistence whale hunts conducted worldwide on large whales employ rifles to kill whales; some of these rifles are smaller than the .50 caliber rifle in the Proposed Action and the .577 caliber rifle used in the Makah's 1999 hunt. Three separate reports (Ingling 1999; Beattie 2001; Graves et al. 2004) have now examined humane killing and public safety aspects of the proposed Makah whale hunts, and all three authors concluded that a .50 caliber rifle (or greater) is the appropriate caliber of weapon to use. Specifically, Ingling (1999) concluded that for large game, larger bullets are more effective in producing penetration deep enough to reach a vital organ or disabling site in the animal and, thus, require more power (i.e., heavier guns); in addition, rifles that are at least .50 caliber provide a better margin of error in targeting compared to smaller caliber rifles. Graves et al. (2004) added that "small caliber rifles simply will not do the job" of quickly killing large thick-boned whales; they concluded that the .50 caliber weapon was the best choice. Russian government reports on the number of small-caliber rifle rounds fired per whale in the Chukotka Native gray whale hunt support this conclusion (Section 3.4.3.5.4, Method of Killing and Time to Death). It is also supported by the decision of New Zealand to euthanize stranded whales as the most humane method (IWC 2007a). The Ingling and Graves reports are discussed in further detail in later sections of this EIS (Section 3.15, Public Safety). As described in Section 2.4.5.1, Hunt Using Only Traditional Methods, the MMPA prescribes that taking a marine mammal must involve "the least possible degree of pain and suffering practicable" (16 USC 1362(4)). Smaller caliber rifles would not result in the least possible degree of pain and suffering practicable.

2.4.6 Alternative Compensation to the Makah Tribe

Compensation to the Makah Tribe for not whaling could be monetary, including financial support for a different venture (such as ecotourism associated with whale watching). Other types of compensation might be a loan for a casino resort, new facilities for health care improvements, other options for improving the quality of life on the reservation, or renegotiating the treaty and returning ceded lands. Any of these actions would, however, result in environmental conditions similar to those described under the No-action Alternative. No whale hunting would occur, and the other financial incentives (such as loans for casinos, resorts, improved health care, or ecotourism opportunities) would be provided to the Tribe with its agreement that the Tribe would forego future whaling. The No-action Alternative could occur at any time and would not be restricted to a specific future event. The Tribe was offered financial compensation by a private party in lieu of whaling during the fall of 1998. The Tribe, at that time, would not consider this offer, and the tribe has maintained that position (Makah Tribe, pers. comm., 2006). This alternative was eliminated from further consideration because any of these activities would be speculative, with uncertain negotiations between the Tribe and other government and nongovernmental entities.

2.5 Alternative Comparison by Key Concern

An alternative comparison draws together the conclusions from the information and discussion presented throughout this EIS and provides the result of the analysis in a brief summary. Table 2-2 provides quantitative and qualitative comparisons of the alternatives for each of the key concerns. The following EIS sections compare alternatives by key concerns and environmental consequences.

Alternative 1 is the baseline for comparing the action alternatives. Chapter 3 provides information on the existing condition of each resource, and Chapter 4 provides the environmental effects from implementing the proposed action by resource. Within each resource, effects are compared among alternatives, including the No-action Alternative.

TABLE 2-2. SUMMARY OF EFFECTS OF THE VARIOUS ALTERNATIVES

RESOURCES	**Alternative 1** No-action	**Alternative 2** Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales	**Alternative 3** Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits	**Alternative 4** Sanctuary and National Wildlife Refuge Resource Alternative	**Alternative 5** Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits	**Alternative 6** Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits
WATER QUALITY						
Drinking Water Sources	Current risk levels would continue.	No likely effect	Similar to Alternative 2	Similar to Alternatives 2 and 3	Similar to Alternatives 2-4	Similar to Alternative 2-5
Marine Waters	Current risk levels would continue (includes occasional disposal of drift whale carcasses).	Increased vessel traffic creates increased risk of fuel spills, but spills would be rapidly diluted. Spills could also be mitigated by modifying existing spill response plans. Negligible increased risks from disposal/leakage of whale carcasses.	Greater contamination risks than Alternative 2 due to increased days of hunting and likely increase in number of whales. Spills would be rapidly diluted and risk from whale carcasses would be negligible. Spills could also be mitigated by modifying existing spill response plans.	Similar to Alternative 2	Similar risk of fuels spills to Alternative 2 due to similar number of days of hunting. Lower risk of leakage from whale carcasses due to fewer numbers of potential whales killed.	Similar to Alternative 3
Shellfish Beds	Current risk levels would continue.	Negligible increased contamination risks from leakage of landed whale carcasses.	Greater contamination risks than Alternative 2 due to more whales possibly landed. Risks still negligible.	Similar to Alternative 2	Lower contamination risk than Alternatives 2, 3, 4, and 6 due to fewer whales landed.	Similar to Alternative 3

TABLE 2-2. SUMMARY OF EFFECTS OF THE VARIOUS ALTERNATIVES (CONTINUED)

RESOURCES	**Alternative 1** No-action	**Alternative 2** Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales	**Alternative 3** Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits	**Alternative 4** Sanctuary and National Wildlife Refuge Resource Alternative	**Alternative 5** Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits	**Alternative 6** Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits
MARINE HABITAT AND SPECIES						
Pelagic Species and Communities	Current levels of disturbance would continue.	Increased vessel traffic, carcass hauling, could result in local, short-lived disturbance of fish, zooplankton, and other pelagic species. No appreciable ecological effects.	Potentially greater impacts than Alternative 2 due to increased days of hunting, but disturbances and ecological effects are still expected to be localized and short-lived, with no appreciable effects.	Similar to Alternative 2, although the potential for disturbance would decline near protected rocks and islands.	Similar to Alternatives 2-4 although greater restrictions on numbers of whales would likely reduce any disturbances.	Similar to Alternative 3, but with any disturbances distributed over a broader area.
Benthic Species and Communities	Current levels of disturbance would continue.	Increased vessel traffic, carcass hauling, could result in local, short-lived disturbance of marine plant, macroalgal, shellfish, and other benthic species. No appreciable ecological effects.	Potentially greater impacts than Alternative 2 due to increased days of hunting, but disturbances and ecological effects are still expected to be localized and short-lived, with no appreciable effects.	Similar to Alternative 2, although the potential for disturbance would decline near protected rocks and islands.	Similar to Alternatives 2-4 although greater restrictions on numbers of whales would likely reduce any disturbances.	Similar to Alternative 3, but with any disturbances distributed over a broader area.
ENP GRAY WHALE						
ENP Gray Whale Stock	Current IWC-set harvest levels would continue. ENP gray whale stock is likely to remain at or near carrying capacity.	No discernable impacts because overall harvest would remain at IWC-set harvest levels.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 2.

TABLE 2-2. SUMMARY OF EFFECTS OF THE VARIOUS ALTERNATIVES (CONTINUED)

RESOURCES	**Alternative 1** No-action	**Alternative 2** Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales	**Alternative 3** Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits	**Alternative 4** Sanctuary and National Wildlife Refuge Resource Alternative	**Alternative 5** Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits	**Alternative 6** Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits
ENP GRAY WHALE (continued)						
Gray Whales Using Local Survey Areas - Abundance	No hunting would occur in local survey areas.	Likely 1 (maximum of 4) Makah U&A or PCFA whale killed. One killed per year would likely be replaced in subsequent year and would not exceed PBR. If maximum of four killed, may not be replaced in subsequent year and would exceed PBR by 1.5 whales at current abundance levels. Concerns about exceeding PBR could be addressed by reducing the number of struck and lost whales allowed or adding a restriction on the combined number of (1) whales struck and lost and (2) identified whales killed and landed.	Potentially 7 Makah U&A or PCFA whales killed because all seven strikes are assumed to result in death and year-round hunting could result in all seven whales being Makah U&A whales. Seven killed whales would not likely be replaced in the Makah U&A in subsequent year and would exceed PBR by 4.5 whales per year at current abundance levels.	Similar to Alternative 2.	Potentially 3 Makah U&A or PCFA whales killed because all three strikes are assumed to result in death and year-round hunting could result in all three whales being Makah U&A whales. Three killed whales may not be replaced in subsequent year and would exceed PBR by 0.5 whales at current abundance levels.	Similar to Alternative 3.

TABLE 2-2. SUMMARY OF EFFECTS OF THE VARIOUS ALTERNATIVES (CONTINUED)

RESOURCES	**Alternative 1** No-action	**Alternative 2** Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales	**Alternative 3** Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits	**Alternative 4** Sanctuary and National Wildlife Refuge Resource Alternative	**Alternative 5** Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits	**Alternative 6** Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits
ENP GRAY WHALE (continued)						
Gray Whales Using Local Survey Areas - Distribution and Habitat Use	Distribution and habitat use would continue to be determined solely by prey availability.	Whales may move within or leave Makah U&A to avoid hunt-related activities over the short or long term. Concerns about whales abandoning Makah U&A could be addressed by monitoring and/or limits on whales approached, pursued, or subjected to unsuccessful strikes.	Greater potential than Alternative 2 for whales to avoid Makah U&A over the short or long term because of the increased number of days of hunting and because more hunting is likely during the summer feeding period.	Similar to Alternative 2.	Potentially less than impacts predicted under Alternatives 3 and 6 due to greater hunt restrictions.	Similar to Alternative 3.

RESOURCES	**Alternative 1** No-action	**Alternative 2** Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales	**Alternative 3** Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits	**Alternative 4** Sanctuary and National Wildlife Refuge Resource Alternative	**Alternative 5** Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits	**Alternative 6** Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits
ENP GRAY WHALE (continued)						
Individual Whales	124 whales could be killed in Chukotkan hunt annually on average, experiencing manner and time to death associated with that hunt. Approx. 5 percent would be struck and lost.	On average, four whales annually could be killed in a Makah hunt rather than Chukotkan hunt. Manner and time to death would be similar to Chukotkan hunt (Alternative 1). As many as 43 percent of the 4 could be struck and lost, compared to 5 percent under Alternative 1. Concerns about the proportion of whales struck and lost could be addressed by reducing the number of struck and lost allowed.	Similar to Alternative 2, except that year-round hunting season could reduce time to death because some hunting would likely occur under more favorable weather and ocean conditions, improving the accuracy of Makah riflemen.	Similar to Alternative 2.	Half as many whales could be killed in a Makah hunt rather than Chukotkan hunt. Year-round hunting season could reduce time to death compared to Alternatives 2 and 4 because some hunting would likely occur under more favorable weather and ocean conditions, improving the accuracy of Makah riflemen. As many as 33 percent could be struck and lost, compared to the 5 percent under Alternative 1	Similar to Alternative 3.

RESOURCES	**Alternative 1** No-action	**Alternative 2** Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales	**Alternative 3** Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits	**Alternative 4** Sanctuary and National Wildlife Refuge Resource Alternative	**Alternative 5** Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits	**Alternative 6** Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits
OTHER WILDLIFE						
Marine Mammals	Current levels of disturbance would continue.	Hunt-related activities would increases the number of vessels, aircraft and noise in the project area. Chance of disturbance is low because of size of project area, location of haul-outs relative to hunts, and lack of association with gray whales (except killer whales). Any disturbance would be temporary and localized. Injury from vessel collision is unlikely.	Potentially greater impacts than Alternative 2 due to increased hunting opportunities, but any disturbances are expected to be localized and short-lived.	Similar to Alternative 2, although the potential for disturbance would decline near protected rocks and islands.	Similar to Alternative 2 although greater hunt restrictions would likely reduce any risks to marine mammals.	Similar to Alternative 3 although greater hunt restrictions would likely reduce any risks to other marine mammals. The ability to hunt in the summer and over a broader area might pose a greater risk of adverse effects on some species (e.g., sea otters).

TABLE 2-2. SUMMARY OF EFFECTS OF THE VARIOUS ALTERNATIVES (CONTINUED)

RESOURCES	**Alternative 1** No-action	**Alternative 2** Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales	**Alternative 3** Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits	**Alternative 4** Sanctuary and National Wildlife Refuge Resource Alternative	**Alternative 5** Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits	**Alternative 6** Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits
OTHER WILDLIFE (continued)						
Other Marine Wildlife	Current levels of disturbance would continue.	Hunt-related activities would increase the number of vessels, aircraft and noise in the project area over a period of 7-30 days. Disturbance varies among species and habitat associations and in most cases would be localized and temporary. Most serious impact would be nest abandonment. Tatoosh and White Rock Islands would have buffers. Concerns about nest abandonment could be addressed by including buffers around other rocks and islands (as under Alternative 4).	Similar types of impacts as Alternative 2, but year-round hunting would increase the number of days (40 versus 7-30) and seasons during which activities occur. Disturbance could occur across more of species' life cycles. On the other hand, some hunting would occur in summer and fall when birds are no longer nesting, reducing chance of nest abandonment. Disturbances would be localized and temporary.	Similar to Alternative 2, except the potential for disturbance would be less to other wildlife on or near protected rocks and islands.	Similar types of impacts as Alternative 2, with similar number of days (20 versus 7-30). As with Alternative 3, year-round hunting would increase the seasons during which activities occur, with similar effects, but for fewer days (20 versus 40).	Similar to Alternative 3, except the ability to hunt in the Strait of Juan de Fuca would result in disturbance in that area, reducing the number of days of disturbance in the coastal portion of the Makah U&A.

TABLE 2-2. SUMMARY OF EFFECTS OF THE VARIOUS ALTERNATIVES (CONTINUED)

RESOURCES	**Alternative 1** **No-action**	**Alternative 2** **Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales**	**Alternative 3** **Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits**	**Alternative 4** **Sanctuary and National Wildlife Refuge Resource Alternative**	**Alternative 5** **Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits**	**Alternative 6** **Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits**
ECONOMICS						
Tourism	No opportunity for Tribe to promote hunt-related tourism and no likelihood of hunt-related boycott. Potential for small disproportionate effect on Tribe.	Ability to hunt creates opportunity for Tribe to promote hunt-related tourism. Also potential for hunt-related boycott.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 3.
Household Use of Whale Products	Current limited availability of drift whales and whales incidentally caught in fishing operations (potentially one whale every five years).	Products from up to four whales annually would be available for household consumption, manufacturing, and selling of traditional handicrafts.	Similar to Alternative 2 but year-round hunting would make it more likely the full number of whales could be harvested.	Similar to Alternative 2.	Products from up to 2 whales annually would be available for household use, compared to up to 4 whales under Alternatives 2, 3, 4, and 6.	Similar to Alternative 3.
Whale-watching Industry	Current levels of revenues from, and employment in, whale-watching industry would continue.	Level of gray whale harvest under Alternative 2 would not be expected to change whale-watching interest or opportunities and therefore not likely to affect whale-watching revenues or employment.	Similar to Alternative 2.	Similar to Alternative 2.	Potentially less than Alternative 2 due to hunting restrictions.	Similar to Alternative 2.

RESOURCES	**Alternative 1** No-action	**Alternative 2** Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales	**Alternative 3** Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits	**Alternative 4** Sanctuary and National Wildlife Refuge Resource Alternative	**Alternative 5** Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits	**Alternative 6** Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits
ECONOMICS (continued)						
Shipping and Ocean Sport/Commercial Fishing	Current passage conditions for ships and fishing vessels would continue.	Activating a MEZ during 7-30 days of hunting could temporarily disrupt shipping/fishing traffic, but no substantial economic impacts would be expected.	Potentially greater impacts than Alternative 2 due to additional days of hunting (40 versus 7-30) and greater number of times MEZ is activated. In addition, hunting could occur in summer when more recreational fishing vessels could be affected by MEZ.	Similar to Alternative 2.	Similar number of days of hunting as Alternative 2 (20 versus 7-30), resulting in similar potential for MEZ to be activated. As with Alternative 3, hunting could occur in summer when more recreational fishing vessels could be affected by MEZ.	Similar to Alternative 3.
Management and Law Enforcement	No change from current conditions.	Costs would be incurred for a hunt observer, and for federal, tribal, state, and local law enforcement agents and resources (e.g., helicopters and boats) to monitor the hunt and manage any protest activities.	Compared to Alternative 2, more days of hunting (40 versus 7-30) would increase the potential costs of law enforcement and hunt monitoring.	Similar to Alternative 2.	Similar to Alternative 2, there would be about the same number of days of hunting and similar levels of law enforcement and hunt monitoring.	Similar to Alternative 3.

RESOURCES	**Alternative 1** **No-action**	**Alternative 2** **Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales**	**Alternative 3** **Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits**	**Alternative 4** **Sanctuary and National Wildlife Refuge Resource Alternative**	**Alternative 5** **Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits**	**Alternative 6** **Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits**
ENVIRONMENTAL JUSTICE						
Economics	Current levels of tourism would continue. Current occasional household use of products from drift whales and whales incidentally caught in fishing operations (potentially one whale every five years).	Potential for short term increase in level of visitors to Neah Bay during 7-30 days of hunting. Other visitors might avoid Neah Bay because of hunt. Long-term effects on number of visitors uncertain. Household use of products from up to four whales.	Potentially greater number of visitors in short term than Alternative 2 due to additional days of hunting (40 versus 7-30) and hunting during summer. Some visitors might avoid Neah Bay because of hunt. Long-term effects on number of visitors uncertain. Greater chance the full number of whales could be harvested and available for household use.	Similar to Alternative 2.	Similar number of visitors to Neah Bay as Alternative 2 due to similar number of days of hunting (20 versus 7-30). Household use of products from two whales versus four under Alternative 2.	Similar to Alternative 3.

RESOURCES	**Alternative 1** **No-action**	**Alternative 2** **Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales**	**Alternative 3** **Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits**	**Alternative 4** **Sanctuary and National Wildlife Refuge Resource Alternative**	**Alternative 5** **Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits**	**Alternative 6** **Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits**
ENVIRONMENTAL JUSTICE (continued)						
Ceremonial and Subsistence Resources	Current limited availability of drift whales and whales incidentally caught in fishing operations (potentially one whale every five years). Lack of access to resource has disproportionate impact on Tribe.	Consistent with Makah's stated need for access to ceremonial and subsistence resources.	Similar to Alternative 2.	Similar to Alternative 2.	Harvest limits (two whales rather than four per year) would provide less access to ceremonial and subsistence resources.	Similar to Alternative 2.
Social Environment	Potential for tension between Makah Tribe and others, including federal government.	Potential for tension between Makah Tribe and others. Potential for social bonding among some tribal members and tension among others. Native Americans generally might be reassured by U.S. support for traditional tribal activity.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 2.

TABLE 2-2. SUMMARY OF EFFECTS OF THE VARIOUS ALTERNATIVES (CONTINUED)

RESOURCES	**Alternative 1** No-action	**Alternative 2** Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales	**Alternative 3** Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits	**Alternative 4** Sanctuary and National Wildlife Refuge Resource Alternative	**Alternative 5** Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits	**Alternative 6** Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits
ENVIRONMENTAL JUSTICE (continued)						
Public Safety	No change from current conditions.	Increased potential for hunt-related injury falls disproportionately on tribal members (but risk is voluntarily assumed by Tribe).	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 3.
SOCIAL ENVIRONMENT						
Makah Tribal Members, Other Tribes, and Other Individuals and Organizations	Likely no protests and related social tensions. No change from current level of tension between members opposed to the hunt and those supporting it. The latter may feel continued frustration with U.S. government.	Tension could increase between hunt opponents and supporters, with opponents likely to protest. Supporters are likely to feel reassured by U.S. government support for traditional tribal activity.	Similar to Alternative 2, although additional hunting opportunities could result in more opportunities for protest and greater tension between hunt opponents and supporters.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 3.

TABLE 2-2. SUMMARY OF EFFECTS OF THE VARIOUS ALTERNATIVES (CONTINUED)

RESOURCES	**Alternative 1** No-action	**Alternative 2** Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales	**Alternative 3** Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits	**Alternative 4** Sanctuary and National Wildlife Refuge Resource Alternative	**Alternative 5** Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits	**Alternative 6** Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits
CEREMONIAL AND SUBSISTENCE RESOURCES						
Subsistence Use	Tribe could pursue some subsistence uses of whales (such as using drift whales or whales incidentally caught in fishing operations), but they would have limited cultural value if not practiced in connection with actual whale hunts.	Compared to No-action Alternative, increased subsistence use of whales due to opportunity to hunt (likely 7-30 days of hunting opportunity) and opportunity to process, share and consume up to average of four whales per year (maximum of five).	Similar to Alternative 2, but subsistence use would increase because year-round hunting would allow for more days of hunting (40 versus 7-30) and result in greater opportunity to harvest the full number of whales allowed.	Similar to Alternative 2.	Similar to Alternative 2 in number of days whales could likely be hunted (20 days versus 7-30), but lower limit on numbers (two versus four) creates less opportunity to harvest, process, share and consume whales.	Similar to Alternative 3.

RESOURCES	**Alternative 1** **No-action**	**Alternative 2** **Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales**	**Alternative 3** **Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits**	**Alternative 4** **Sanctuary and National Wildlife Refuge Resource Alternative**	**Alternative 5** **Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits**	**Alternative 6** **Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits**
CEREMONIAL AND SUBSISTENCE RESOURCES (continued)						
Traditional Knowledge and Activities	Tribe could continue to engage in many related activities, and could apply and transmit relevant knowledge, but this would have limited cultural value if divorced from actual whale hunts. Application and transfer of knowledge related to actual hunting would be limited to discussions of past whale hunting,	Tribe could engage in full range of activities and apply the full range of knowledge associated with whale hunting, including searching for, striking, killing, towing, processing, sharing and consuming whales.	A year-round hunting season would provide Makah hunters with a greater opportunity to harvest whales, enabling them to hunt during traditional times without regulations restricting them to a season dominated by inclement weather conditions.	Similar to Alternative 2.	Similar to Alternative 2 in number of days whales could likely be hunted (20 days versus 7-30), but lower limit on numbers (two versus four) creates fewer opportunities to engage in traditional activities and apply and transmit traditional knowledge.	Similar to Alternative 3.
Spiritual Connection to Whaling	Spiritual connection to whaling would continue to be limited to connection to past whale hunting and spiritual connection may eventually wane.	Spiritual connection to whaling would be current and ongoing.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 2.

TABLE 2-2. SUMMARY OF EFFECTS OF THE VARIOUS ALTERNATIVES (CONTINUED)

RESOURCES	**Alternative 1** No-action	**Alternative 2** Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales	**Alternative 3** Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits	**Alternative 4** Sanctuary and National Wildlife Refuge Resource Alternative	**Alternative 5** Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits	**Alternative 6** Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits
CEREMONIAL AND SUBSISTENCE RESOURCES (continued)						
Cultural Identity	Tribal identity could erode in the absence of opportunities to participate in an activity central to Makah cultural identity.	Makah whale-hunting rituals, spiritual training, songs, dances, and ceremonial activities could increase over current conditions, and regularly recur, reinforcing Makah cultural identity. The opportunity to regularly harvest, process, share, and consume whale products could increase tribal members' sense of community. The whale-hunting ceremonies could provide an additional social framework, which could contribute to community social and spiritual stability.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 2.

TABLE 2-2. SUMMARY OF EFFECTS OF THE VARIOUS ALTERNATIVES (CONTINUED)

RESOURCES	**Alternative 1** **No-action**	**Alternative 2** **Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales**	**Alternative 3** **Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits**	**Alternative 4** **Sanctuary and National Wildlife Refuge Resource Alternative**	**Alternative 5** **Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits**	**Alternative 6** **Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits**
NOISE						
Noise Levels at Receiving Properties	No change from current conditions.	Increased noise levels from vessels, aircraft, and weapons at receiving properties in Neah Bay and possibly along State Route 112 east of Neah Bay during a period of 7-30 days. Noise may also be audible to recreational users in hunt vicinity. Limited number of recreational visitors may be affected because hunting would occur in winter and early spring when visitation is low.	Compared to Alternative 2, more days of hunting (40 versus 7-30) would result in increased noise. More recreational visitors would be exposed to noise because hunting would occur during summer.	Similar to Alternative 2.	Similar to Alternative 2, there would be about the same number of hunting days (20 versus 7-30) of increased noise levels at receiving properties. However, similar to Alternatives 3 and 6, hunting could occur year round, affecting more recreational visitors.	Similar to Alternative 3, there would be about the same number of days of hunting (40) and hunting would occur year round. More noise could occur at receiving properties along State Route 112 because hunting would be allowed in the strait. Recreational visitors in the strait would be exposed to more noise than under Alternative 3.

TABLE 2-2. SUMMARY OF EFFECTS OF THE VARIOUS ALTERNATIVES (CONTINUED)

RESOURCES	**Alternative 1** **No-action**	**Alternative 2** **Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales**	**Alternative 3** **Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits**	**Alternative 4** **Sanctuary and National Wildlife Refuge Resource Alternative**	**Alternative 5** **Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits**	**Alternative 6** **Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits**
AESTHETICS						
On-scene Observers	Current lack of opportunity to view an authorized whale hunt would continue.	Harvest of four whales during a period of 7-30 days would be visible to observers at beaches and vantage points along coastal portion of project area. Hunting during winter/spring period when visitation is low would reduce number of unintentional observers.	Compared to Alternative 2, more days of hunting (40 versus 7-30) and hunting during the summer would increase the chance that on-scene observers could see a whale being hunted, brought to shore, or butchered.	Similar to Alternative 2.	Similar to Alternative 2, there would be about the same number of days of hunting (20 versus 7-30), but because hunting would occur during the summer (similar to Alternatives 3 and 6), more on-scene observers might unintentionally observe a whale being hunted, brought to shore, or butchered.	Similar to Alternative 3, there would be about the same number of days of hunting (40) throughout the year. The potential for recreational visitors to view a hunt would extend to the Strait of Juan de Fuca.

RESOURCES	**Alternative 1** **No-action**	**Alternative 2** **Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales**	**Alternative 3** **Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits**	**Alternative 4** **Sanctuary and National Wildlife Refuge Resource Alternative**	**Alternative 5** **Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits**	**Alternative 6** **Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits**
AESTHETICS (continued)						
Media Observers	Current lack of opportunity to view an authorized whale hunt would continue.	Any whale hunts would receive media coverage. However, inclement weather during the hunt period could limit media coverage.	Any whale hunts would receive media coverage. Compared to Alternative 2, more days of hunting (40 versus 7-30) and hunting during the summer could increase the opportunity for media coverage.	Similar to Alternative 2.	Any whale hunts would receive media coverage. Similar to Alternative 2, there would be about the same number of days of hunting (20 versus 7-30). However, similar to Alternatives 3 and 6, hunting could occur during the summer, potentially increasing the opportunity for media coverage.	Similar to Alternative 6.

TABLE 2-2. SUMMARY OF EFFECTS OF THE VARIOUS ALTERNATIVES (CONTINUED)

RESOURCES	**Alternative 1** **No-action**	**Alternative 2** **Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales**	**Alternative 3** **Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits**	**Alternative 4** **Sanctuary and National Wildlife Refuge Resource Alternative**	**Alternative 5** **Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits**	**Alternative 6** **Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits**
TRANSPORTATION						
Highway, Marine, and Air Traffic	No change from current conditions.	Increased hunt-related traffic could increase potential for interference with highway, marine, or air traffic in the project area and could increase the risk of traffic accidents. However, hunts would be limited to the winter and early spring months and would not overlap with peak periods for highway or air traffic.	Compared to Alternative 2, more days of hunting (40 versus 7-30) would increase the potential for interference with highway, marine, or air traffic in the project area, as well as an increased risk of traffic accidents. Hunting during summer would overlap with peak periods for highway and air traffic	Similar to Alternative 2.	Similar to Alternative 2, there would be about the same number of days of hunting and a similar increase in traffic, but because hunting would occur during summer (similar to Alternatives 3 and 6), the increased traffic would overlap with peak periods for highway and air traffic.	Similar to Alternative 3.

TABLE 2-2. SUMMARY OF EFFECTS OF THE VARIOUS ALTERNATIVES (CONTINUED)

RESOURCES	**Alternative 1** **No-action**	**Alternative 2** **Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales**	**Alternative 3** **Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits**	**Alternative 4** **Sanctuary and National Wildlife Refuge Resource Alternative**	**Alternative 5** **Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits**	**Alternative 6** **Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits**
PUBLIC SERVICES						
Law Enforcement and Medical Facilities	No change from current conditions.	Hunt-related protests could increase law enforcement needs, possibly diverting such resources from other missions. Persons suffering hunt-related injuries that exceed the capacities of local health facilities could be transported to other facilities in the region.	Compared to Alternative 2, more days of hunting (40 versus 7-30) would increase the diversion of law enforcement resources from other missions, and increase the number of injuries that require medical attention. Hunting during summer would overlap with peak periods of demand for these public services	Similar to Alternative 2.	Similar to Alternative 2, there would be about the same number of days of hunting and a similar increase in demand for law enforcement and medical services, but because hunting would occur during summer (similar to Alternatives 3 and 6), the increased demand would overlap with peak periods of demand.	Similar to Alternative 3.

TABLE 2-2. SUMMARY OF EFFECTS OF THE VARIOUS ALTERNATIVES (CONTINUED)

RESOURCES	**Alternative 1** **No-action**	**Alternative 2** **Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales**	**Alternative 3** **Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits**	**Alternative 4** **Sanctuary and National Wildlife Refuge Resource Alternative**	**Alternative 5** **Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits**	**Alternative 6** **Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits**
PUBLIC SAFETY						
Injury from Weapons, Boating Accidents, and Land-based Protest Activities	No change from current conditions.	Makah hunters, other participants, protesters, and bystanders would be at risk of injury from weapons, protest activities, or boating accidents during the winter and spring.	Compared to Alternative 2, more days of hunting (40 versus 7-30) could increase risks of injury from protest activity. Injury from weapons and boating accidents might decrease because year-round hunting would allow hunts to occur during more favorable weather and sea conditions.	Similar to Alternative 2.	Similar to Alternative 2, there would be about the same number of days of hunting and a similar risk of injury from protest activities, but because hunting would occur during summer (similar to Alternatives 3 and 6), there could be a decreased risk of injury from weapons and boating accidents because year-round hunting would allow hunts to occur during more favorable weather and sea conditions.	Similar to risk of injury under Alternative 3 for all groups except greater for bystanders on land in that portion of the U&A within the Strait of Juan de Fuca.

TABLE 2-2. SUMMARY OF EFFECTS OF THE VARIOUS ALTERNATIVES (CONTINUED)

RESOURCES	**Alternative 1** No-action	**Alternative 2** Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales	**Alternative 3** Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits	**Alternative 4** Sanctuary and National Wildlife Refuge Resource Alternative	**Alternative 5** Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits	**Alternative 6** Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits
HUMAN HEALTH						
Nutritional Benefits, Environmental Contaminants, and Exposure to Food-Borne Pathogens	No change from current conditions.	Insufficient information about nutritional value and contaminant levels in current Makah diet to allow a comparison of Alternative 2 to the No-action Alternative.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 2.
NATIONAL AND INTERNATIONAL REGULATORY ENVIRONMENT						
Marine Mammals Nationally	It is uncertain, but possible, that a decision not to authorize a Makah whale hunt could discourage future requests for a waiver of the MMPA.	Authorizing a Makah hunt may prompt other Indian tribes to request a similar waiver of the MMPA. The outcome of future requests would depend on the specific facts presented.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 2.

TABLE 2-2. SUMMARY OF EFFECTS OF THE VARIOUS ALTERNATIVES (CONTINUED)

RESOURCES	**Alternative 1** No-action	**Alternative 2** Proposed Action - Hunt Outside Strait Dec. 1 - May 31, Limits on Identified Whales	**Alternative 3** Hunt Outside Strait, No Timing Restrictions, No Identified Whale Limits	**Alternative 4** Sanctuary and National Wildlife Refuge Resource Alternative	**Alternative 5** Hunt Outside Strait, No Timing Restrictions, More Restrictive Numbers, No Identified Whale Limits	**Alternative 6** Hunt Anywhere in U&A, No Timing Restrictions, No Identified Whale Limits
NATIONAL AND INTERNATIONAL REGULATORY ENVIRONMENT (continued)						
Worldwide Whaling	U.S. decision not to authorize a Makah whale hunt is unlikely to influence the position of the United States or other countries regarding IWC issues.	It is possible, but speculative, that authorizing a Makah hunt could increase whaling worldwide by emboldening pro-whaling countries.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 2.	Similar to Alternative 2.
Indigenous People Worldwide	U.S. decision not to authorize a Makah whale hunt is unlikely to influence actions of other governments toward indigenous people.	Similar to No-action Alternative.	Similar to No-action Alternative.	Similar to No-action Alternative.	Similar to No-action Alternative.	Similar to No-action Alternative.

Chapter 3
Affected Environment

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3.0 AFFECTED ENVIRONMENT

This chapter describes the affected environment (environmental conditions in the project area) to provide background information for the assessment of the environmental effects of the alternatives in Chapter 4 (Environmental Consequences) and Chapter 5 (Cumulative Impacts). The affected environment sections describe the pertinent aspects of resources and the current conditions within the project area, which will be used to evaluate the anticipated environmental effects of the alternatives described in Chapter 2 (Alternatives). The first section describes geographically based management in the project area (including federal and international designated areas and tribal management of reservations and usual and accustomed grounds) to provide context for the description of the other sections. The remaining sections present the physical environment first, followed by the biological environment, then the social environment, in the project area. The specific order of the sections is as follows:

- Geographically Based Management in the Project Area (Section 3.1)
- Water Quality (Section 3.2)
- Marine Habitat and Species (Section 3.3)
- Eastern North Pacific Gray Whale (Section 3.4)
- Other Wildlife Species (Section 3.5)
- Economics (Section 3.6)
- Environmental Justice (Section 3.7)
- Social Environment (Section 3.8)
- Cultural Resources (Section 3.9)
- Ceremonial and Subsistence Resources (Section 3.10)
- Noise (Section 3.11)
- Aesthetics (Section 3.12)
- Transportation (Section 3.13)
- Public Services (Section 3.14)
- Public Safety (Section 3.15)
- Human Health (Section 3.16)
- National and International Regulatory Environment (Section 3.17)

The resources considered for environmental review in Chapters 3 to 5 of this environmental impact statement (EIS) are those that the National Marine Fisheries Service (NMFS) has identified as having the potential to be affected by the project alternatives. To determine the correct resources to analyze, NMFS first compiled a complete list of physical, biological, and social resources during internal agency project scoping. NMFS then reduced the list to those that might have any potential to be affected by the project and published notices of intent in the Federal Register requesting public comments on various components of the EIS, including resources to be analyzed. After considering public comments, some resources were identified as not having the potential to be affected by the action alternatives, and are, therefore, not analyzed in this EIS. These resources include utilities, air quality, geology and soils, groundwater, hazardous waste, energy, housing, light and glare, and National Historic Preservation Act cultural properties.

3.1 Geographically Based Management in the Project Area

The project area is confined primarily to the marine waters, islands, and land areas near the Makah Tribe's usual and accustomed fishing grounds (U&A) in the Pacific Ocean and Strait of Juan de Fuca that may be directly or indirectly affected by the proposed whale hunt (Figure 1-1) (Section 1.1.2, Project Location). The project area encompasses several federally designated and managed areas, including the Olympic Coast National Marine Sanctuary (OCNMS or Sanctuary), the Washington Islands National Wildlife Refuges, the United States Coast Guard (Coast Guard) regulated navigation area (RNA), Olympic National Park, and internationally designated areas, including a United Nations World Heritage Site and the Olympic Biosphere Reserve. The project area also includes the Makah and Ozette Reservations. These designated and managed areas have objectives and policies that are directly or indirectly related to the proposed action as described below.

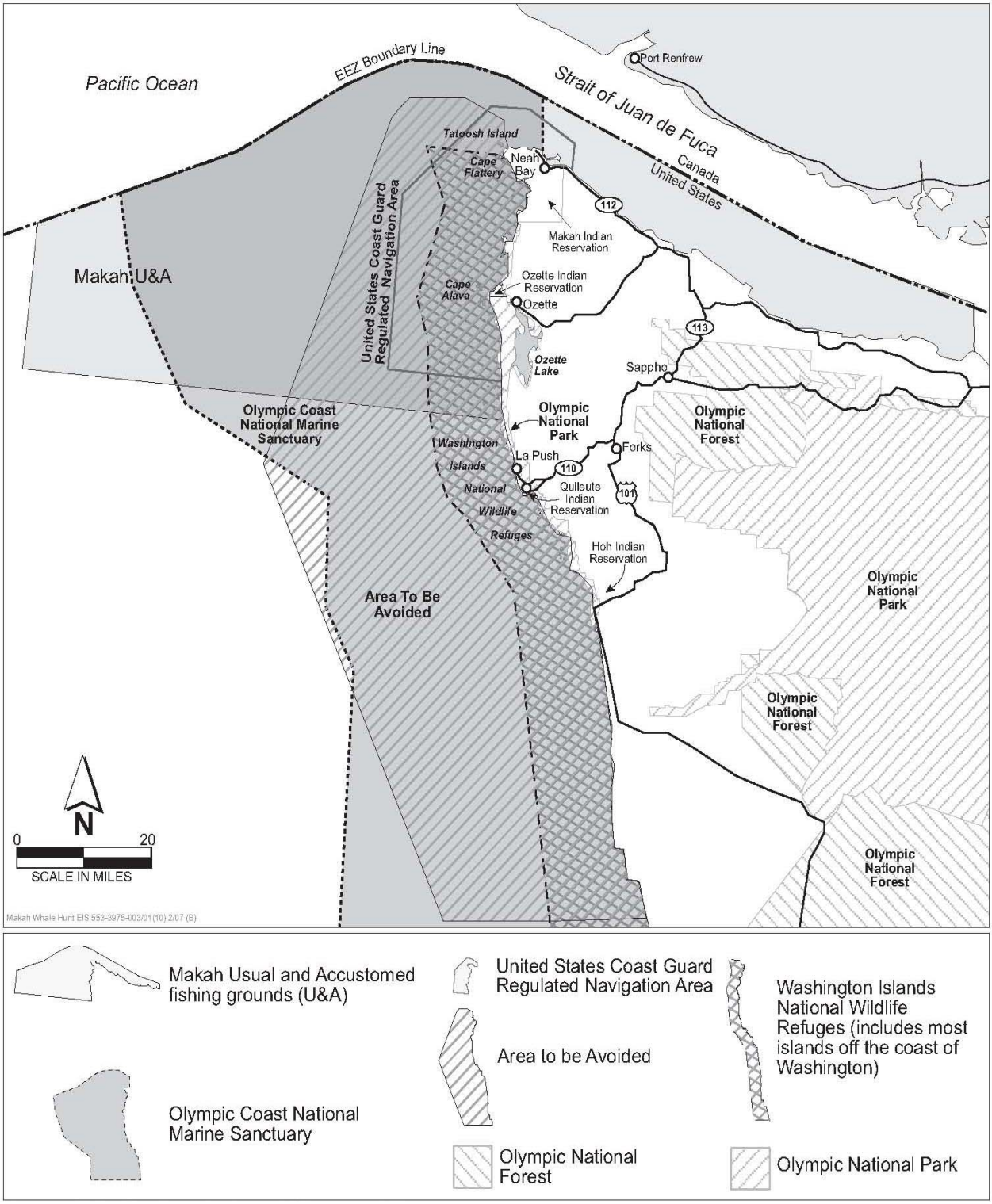


Figure 3-1. Designated and Managed Areas

3.1.1 Designated Areas

3.1.1.1 Olympic Coast National Marine Sanctuary

3.1.1.1.1 Introduction

The OCNMS is one of 13 national marine sanctuaries in United States waters, located off the northwest coast of Washington State and encompassing a 2,500-square-nautical-mile area of coastal and ocean waters and submerged lands along the Olympic Peninsula and the western portion of the Strait of Juan de Fuca. Figure 3-1 identifies the portion of the OCNMS in the project area.

3.1.1.1.2 Designation and Regulatory Overview

The Secretary of Commerce designated the OCNMS in 1994 as an area of special national significance under the authority of the National Marine Sanctuaries Act (16 United States Code [USC] 1431 et seq.) due to its unique and nationally significant collection of flora and fauna, and adjacency to the Olympic National Park. In the OCNMS Designation Document (published in 59 FR 24586, May 11, 1994) and 1993 Final EIS and Management Plan (National Oceanic and Atmospheric Administration [NOAA] 1993), NOAA noted that the Sanctuary is a highly productive, nearly pristine ocean and coastal environment that is important to the continued survival of several ecologically and commercially important species of fish, seabirds, and marine mammals. In the Designation Document and the Final EIS and Management Plan, NOAA enumerated biological and historical resources that give the Sanctuary particular value (NOAA 1993). Some of the biological resources NOAA identified that give the Sanctuary particular value include high biological productivity, diversity of habitats, a wide variety of marine mammals and birds living in or migrating through the area, and the presence of endangered and threatened species and essential habitats.

In particular, NOAA noted that the unusually large and diverse range of habitats comprising the Sanctuary includes the following:

- Offshore islands and rocks (most are within the Flattery Rocks, Quillayute Needles, and Copalis National Wildlife Refuges)
- Large and diverse kelp beds
- Intertidal pools
- Erosional features (such as rocky headlands, seastacks, and arches)
- Interspersed exposed beaches and protected bays
- Submarine canyons and ridges

- The continental shelf (including a broad shallow plateau extending from the mouth of the Juan de Fuca canyon)
- Continental slope environments

The numerous sea stacks and rocky outcrops along the Sanctuary shoreline, coupled with a large tidal range and wave splash zone, support some of the most diverse and complex intertidal zones in the United States (59 FR 24586, May 11, 1994). NOAA also identified several historical resources that give the Sanctuary particular value, including Indian village sites, ancient canoe runs, petroglyphs, Indian artifacts, and numerous shipwrecks (NOAA 1993; 59 FR 24586, 24604, [May 11, 1994]). Extensive archeological work oriented toward late prehistoric culture had been completed along the Washington coastline at the time of designation, including a major archeological dig conducted at Ozette, near Cape Alava, which uncovered an ancient village thought to be 2,000 years old and considered to be one of the most significant excavations in North America (NOAA 1993). NOAA also found that an important feature of the Sanctuary is its proximity to four Native American reservations and the U&As of the Makah and Ozette, Quileute, Hoh, and Quinault Indian Tribes. Tribal members use the Sanctuary area for subsistence and commercial harvesting and for religious ceremonies; the presence of Indian tribes along the coast adds special cultural character and historical significance to the Sanctuary (NOAA 1993).

NOAA's National Ocean Service, Sanctuaries and Reserves Division, National Marine Sanctuaries Program, administers the OCNMS, managed on location by Sanctuary staff in Port Angeles. The mission statement of the OCNMS program is to protect the Olympic Coast's natural and cultural resources through responsible stewardship, to conduct and apply research to preserve the area's ecological integrity and maritime heritage, and to promote understanding through public outreach and education. These multiple-use management objectives are achieved through both cooperative management and regulation. NOAA finds that one of the major benefits of establishing the OCNMS is the integration of important nearshore and oceanic marine resource zones and corresponding human activities, including federal, state, and tribal management of those activities, under one coordinated management regime (NOAA 1993). To this end, Sanctuary staff coordinates management with the Washington State Departments of Ecology (Ecology), Natural Resources, Fish and Wildlife, and Agriculture; the United States and Canadian Coast Guards; the United States Fish and Wildlife Service (FWS); the National Park Service; the four coastal tribes (Makah, Quileute, Hoh, and Quinault Indian Tribes); local businesses, towns, counties, timber and fishing representatives; and research and education institutions. To better understand certain stakeholder interests, the Sanctuary staff listens to a Sanctuary Advisory

Council, comprising representatives of Indian tribes, state and local governments, other federal agencies, industry, conservation organizations, and citizens. The Sanctuary Advisory Council operates under a charter and serves strictly in a voluntary, advice-giving role. The Sanctuary program staff also reviews ocean management in the OCNMS with the four coastal tribes, including the Makah Tribe, the Northwest Indian Fisheries Commission, and the state of Washington, through the Intergovernmental Policy Council (NOAA 2007). The Intergovernmental Policy Council was created by a memorandum of agreement in 2006 (NOAA 2007).

Regulations governing the OCNMS are located at 15 Code of Federal Regulations (CFR) Part 922, Subpart O. The regulations describe Sanctuary boundaries, prohibit certain kinds of activities, and set up a permitting system to allow some activities that are otherwise prohibited. Activities generally prohibited in the OCNMS include offshore oil, gas, and mineral exploration, development, or production; pollution discharge; seabed disturbance; and possessing, moving, removing, or injuring any historical resource. Prohibited activities that are particularly relevant to the proposed action include flight level restrictions and marine mammal take restrictions. Flying motorized aircraft at less than 2,000 feet both above the Sanctuary and within 1 nautical mile of the shoreline or National Wildlife Refuge islands is prohibited under 15 CFR 922.152(6), unless the Sanctuary staff issues a permit (with certain exceptions, e.g., valid law enforcement and national defense activities). This prohibition is consistent with the 2,000-foot flight advisory over the adjacent Olympic National Park and National Wildlife Refuges and is designed to limit the potential effects of noise, particularly as it might affect hauled-out seals and sea lions, sea otters, and nesting birds along the shoreline and offshore rocks and islands of the Sanctuary (NOAA 1993; 59 FR 24586, 24608 [May 11, 1994]).

Regulations also prohibit taking any marine mammal, sea turtle, or seabird in or above the Sanctuary, except as authorized by the Marine Mammal Protection Act (MMPA), the Endangered Species Act (ESA), and the Migratory Bird Treaty Act, or pursuant to any treaty with an Indian tribe to which the United States is a party (15 CFR 922.152(5)). If the taking is conducted pursuant to an Indian treaty, the taking is to be exercised in accordance with the MMPA, ESA, and the Migratory Bird Treaty Act, to the extent that they apply (15 CFR 922.150(5)). For applicability of these federal laws to the Makah Tribe's treaty right of taking fish and of whaling or sealing at usual and accustomed grounds and stations, refer to Chapter 1, Purpose and Need, and Chapter 2, Alternatives, of this EIS.

3.1.1.1.3 Current Issues

OCNMS Management Plan Review. The 1994 OCNMS Management Plan outlines objectives for resource protection, research, and education programs. Section 304(e) of the National Marine Sanctuaries Act requires five-year periodic reviews of management plans; a review of the OCNMS Management Plan will begin in 2007. These reviews include the effectiveness of site-specific management techniques and strategies implemented at the Sanctuary, along with a review of management objective priorities.

Area to be Avoided. In 1995, Sanctuary staff worked with the Coast Guard and the International Maritime Organization to establish an area to be avoided for the primary purpose of preventing a catastrophic oil spill. The area to be avoided is a voluntary ship traffic management program that advises operators of ships greater than 1,600 gross tons, which carry large amounts of bunker fuel and hazardous materials, to maintain a 25-mile buffer from the coastline in its southern portion, narrowing to approximately 8 nautical miles west of Cape Flattery and 1 nautical mile (1.2 miles) north of Neah Bay. This area to be avoided corresponds largely with the nearshore portion of the Makah Tribe's U&A (Figure 3-1). The restrictions do not apply to vessels that are engaged in an otherwise permitted activity that occurs predominantly within the Sanctuary, such as fishing or research. Of 6,938 vessel transits through the Sanctuary in 2004, all but 260 remained outside of the area to be avoided, equating to an estimated compliance rate of 96 percent (Ecology 2005a). More information on vessel traffic can be found in Section 3.13.3.2, Marine Vessel Traffic. See also Section 3.2.3.3, Spill Prevention.

Sanctuary Research. The Sanctuary staff conducts and sponsors ongoing research as a component of its management program. The Sanctuary's current research program includes studies on water quality, groundfish, seafloor mapping, intertidal ecology, marine mammals, and seabirds (NOAA 2001a; NOAA 2006). The marine mammal research at the Sanctuary includes sea otter *(Enhyrda lutris)* population and distribution, radio telemetry, and food habit studies; pinniped aerial surveys for population and distribution information; gray whale *(Eschrichtius robustus)*, killer whale *(Orcinus orca)*, and humpback whale *(Megaptera novaeangliae)* photo-identification; and surveys on the offshore distribution of cetaceans and pinnipeds (NOAA 2001b). The water quality studies have focused on harmful algal blooms and why these blooms may occur on the Washington coast. The seafloor mapping studies have included surveys of deep-water coral and sponge assemblages, as well as the effects of bottom-trawling activities for fish harvesting on these benthic communities.

Tribal Journeys. During summer 2005, the Sanctuary provided logistical and documentary support for Tribal Journeys, a multi-tribe celebration of Northwest Coast Native American and First Nation canoe culture. Tribes from Vancouver Island, mainland British Columbia, and the Puget Sound region traveled by canoe to the village of Taholah, where they were hosted by the Quinault Indian Nation. Canoe crews, their families, and supporters camped at villages of the Makah, Quileute, and Hoh Tribes. The Sanctuary outfitted a research vessel to provide safety and support for the participants and documented the journey on video (NOAA 2003).

Sanctuary Cooperation with the Makah Tribe. The Makah Tribe is a key partner in Sanctuary public relations, education, and outreach. The Makah Cultural and Research Center has fostered a strong relationship with the Sanctuary through development and implementation of a cooperative interpretive program centered on the Makah Reservation. Since 2000, the Sanctuary has provided annual funding to the Makah Cultural and Research Center to hire Makah interpreters and guides for a 17-week summer program (Bowechop 2006). Makah interpreters hosted more than 15,000 Sanctuary visitors who learned about coastal issues, Makah culture, and natural history within the area. Sanctuary staff also supported the creation of the Makah Office of Marine Safety to provide technical assistance in developing and planning pollution prevention strategies and to represent the Tribe's interest in guarding treaty-protected resources from oil spills (NOAA 2006). For more information on spill prevention, see Section 3.2.3.3, Spill Prevention. Since 2006, the Makah Tribe has also been member of the Sanctuary's Intergovernmental Policy Council.

3.1.1.2 Washington Islands National Wildlife Refuges

More than 870 islands, rocks, and reefs extending for more than 100 miles along the coast of Washington State are included in three national wildlife refuges: Quillayute Needles, Flattery Rocks, and Copalis (collectively called the Washington Islands National Wildlife Refuges). The islands range from less than 1 acre to about 36 acres, and most drop abruptly into the sea. The islands are protected from human disturbance and predators and are close to abundant ocean food sources. The islands provide refuge for more than 20 species of birds as they nest and raise their young; the total population of seabirds, waterfowl, and shorebirds may exceed one million birds (Section 3.5.3.2, Existing Conditions, Other Marine Wildlife, for more information on birds nesting on islands off the coast of Washington). In addition, sea lions, harbor seals, sea otters, porpoises, and whales are commonly found around the islands (Section 3.5.3.1, Existing Conditions, Marine Mammals, for more information on marine mammals that occur near these islands). All three refuges were originally established as migratory bird sanctuaries through Executive Orders 703, 704, and 705 issued by President Theodore Roosevelt in 1907, and later

redesignated as refuges in 1940 (Presidential Proclamation, July 30, 1940) and wilderness areas in 1970 (under the Wilderness Act of 1964, 16 USC 1131 et seq.), except for Destruction Island, which was excluded due to the presence of an operational Coast Guard lighthouse on the island. The Flattery Rocks and Quillayute Needles National Wildlife Refuges are within the Makah Tribe's U&A and the OCNMS. The Flattery Rocks and Quillayute Needles National Wildlife Refuges encompass 125 acres and are located along the northwestern portion of Washington State, beginning about 1 mile south of Tatoosh Island and extending approximately 3 miles south of Destruction Island.

The refuges are maintained as a sanctuary for nesting seabirds and marine mammals and are managed by the FWS. The FWS coordinates with NOAA's Olympic Coast National Marine Sanctuary staff to prohibit motorized aircraft less than 2,000 feet above certain portions of the refuges. The FWS also manages the refuges cooperatively with the National Park Service through a memorandum of understanding, because the refuges are within the exterior boundaries of Olympic National Park (National Park Service and FWS 1993). The objective of the Washington Islands National Wildlife Refuges is to enhance protection and interpretation of the wildlife, natural, and scenic resources of the refuges by taking the following measures:

- Minimizing human impacts
- Maintaining the wilderness character of the area
- Helping the public understand and appreciate the value of the refuges
- Conducting research to understand the refuge resources

The FWS has also issued advisories prohibiting public access to the islands and is recommending a voluntary 200-yard exclusion area around each island to avoid the flushing of nesting seabirds by boat and other vessel traffic (FWS 2007).

The FWS prepared a Washington Islands National Wildlife Refuges Comprehensive Conservation Plan/Environmental Assessment (EA) (FWS 2007) to guide its management of the Flattery Rocks National Wildlife Refuges, as well as the Quillayute Needles and Copalis National Wildlife Refuges. Management activities include monitoring the refuge wildlife and protecting and maintaining the natural functioning ecosystem. The plan directs the FWS to coordinate with other agencies and tribes to ensure continuation of the long-term health and viability of native seabird and marine wildlife populations. The Washington Islands National Wildlife Refuges Comprehensive Conservation Plan/EA includes the Treaty of Neah Bay as a law or executive order potentially applicable to its Comprehensive Conservation Plan/EA (FWS 2007)

(specifically the Tribe's fishing, whaling, and sealing rights within its U&A, as well as hunting and gathering rights on open and unclaimed lands). The Washington Islands National Refuge System adheres to laws, regulations, and policies applicable to all National Refuge Systems (50 CFR Subchapter C, Parts 25 to 32). Goals, objectives, and strategies applicable to the Washington Islands National Wildlife Refuge Comprehensive Conservation Plan/EA are listed below:

- Protect migratory birds and other native wildlife and their associated habitats, with special emphasis on seabirds.
- Protect and support the recovery of federally threatened and endangered species and Washington State special status species and their associated habitats.
- Promote and manage the Washington Islands Wilderness Area to maintain its wilderness character and values.
- Promote effective coordination and cooperation with others for conservation of refuge resources with special emphasis on government agencies and tribes with adjoining ownership and/or jurisdiction.
- Continue to enhance long-term monitoring and sustained applied research.
- Increase public interpretation and awareness programs to enhance appreciation, understanding, and enjoyment of refuge resources.

3.1.1.3 Coast Guard Regulated Navigation Area

The United States Coast Guard has established an RNA (Figure 3-1) in the Strait of Juan de Fuca and adjacent coastal waters of northwest Washington (33 CFR 165.1310) under its Ports and Waterways Safety Act authority (33 USC 1221 et seq.), allowing the Coast Guard to enforce vessel activities near any Makah whale hunt and reduce the danger of loss of life and property from any hunt. When finalizing the RNA after the 1999 hunt, the Coast Guard specifically found that "the uncertain reactions of a pursued or wounded whale and the inherent dangers in firing a [.50 caliber] hunting rifle from a pitching and rolling small boat are likely to be present in all future hunts, and present a significant danger to life and property if persons or vessels are not excluded from the immediate vicinity of a hunt" (64 FR 61212, November 10, 1999).

The RNA rests entirely within the Makah U&A (Figure 3-1); its boundaries enclose waters off Neah Bay and the Strait of Juan de Fuca in the north, wrap around Cape Flattery and Tatoosh Island, and then parallel the shore at a 10-nautical-mile (11.5-mile) distance until the southern boundary is formed by connecting to the shore at the southern extent of the U&A. The Coast Guard extended the southern boundary of the RNA to match the southern boundary of the U&A when the final rule was promulgated in 1999 (64 FR 61212, November 10, 1999). When the

interim rule (63 FR 52609, October. 1, 1998) was in force during the 1999 Makah whale hunt, most of the Makah whale hunting and associated protesting activities occurred farther south than the borders of the RNA (though the whale hunting activities and the protesting incidents still occurred within the Makah U&A) (Section 1.4.2, Summary of Recent Makah Whaling – 1998 through 2007, for more information about these whale hunting and protest activities).

Within the RNA during any Makah whale hunt, a moving exclusionary zone (MEZ), for "the column of water from the surface to the seabed within a radius of 500 yards centered on the Makah whale hunt vessel" is activated when one Makah whale hunt vessel (i.e., the canoe or the chase boat with the rifleman) displays an international numeral pennant 5 between sunset and sunset when surface visibility exceeds 1 nautical mile (33 CFR 165.1310(b)). No person or vessel may enter the MEZ when it is activated, except for the authorized Makah whale hunt vessel, an authorized media pool vessel preauthorized by the Coast Guard, or another vessel or person authorized by the Coast Guard (33 CFR 165.1310(c)), such as the observer vessel. The authorized media pool vessel must maneuver to avoid positioning itself between whales and hunt vessels, out of the line of fire, at a prudent distance and location relative to the whale hunt operations, and in a manner that avoids hindering the hunt or path of the whale in any way (33 CFR 165.1310(f)(3)). The media pool vessel operates at its own risk, but must adhere to safety and law enforcement instructions from Coast Guard personnel (33 CFR 1310(f)). The regulation does not affect normal transit or navigation in the RNA. Refer to Section 1.4.2, Summary of Recent Makah Whaling – 1998 through 2007, Section 3.15.2.1, Vessel Safety Regulations and Authorities, and Section 3.15.3.4 Behavior of People Associated with the Hunt, for more information about the operation of the RNA and the MEZ during Makah whale hunting from 1998 to 2000.

3.1.1.4 Olympic National Park

The Olympic National Park comprises 922,651 acres located primarily in the center of the Olympic Peninsula and includes lands along the upper northern coast of Washington State (Figure 3-1). President Theodore Roosevelt originally created the Olympic National Monument in 1909; Congress later redesignated and authorized the monument as a National Park in 1938 (Chapter 812, 52 Stat. 1241). In 1988, Congress designated about 95 percent of the park (876,669 acres) as wilderness through the Washington Park Wilderness Act (16 USC 90 note, Public Law 100-668); it is now one of the largest wilderness areas in the contiguous United States. Combined with the OCNMS, the two designations protect almost 5,000 square miles of intertidal, island, and ocean habitats. The National Park Service is the federal agency that manages the park to preserve and protect, unimpaired, the park's diverse natural and cultural

resources and provide for the enjoyment, education, and inspiration of present and future generations. More than 650 archeological sites documenting 10,000 years of human occupation are protected within the Olympic National Park lands (National Park Service 2008). Ten Peninsula tribes retain their ongoing connection between community and traditional lands, including the Makah Tribe, Hoh Tribe, Jamestown S'Klallam Tribe, Quileute Tribe, Quinault Nation, Skokomish Tribe, Squaxin Tribe, Suquamish Tribe, Elwha Klallam Tribe, and Port Gamble S'Klallam Tribe. The park also protects cultural resources that reveal and document the 200-year history of discovery, exploration, homesteading, and community development in the region (National Park Service 2008).

The National Park Service recently prepared a general management plan/EIS for the park that describes a vision for its future (National Park Service 2008). The plan is intended to guide park decision-making for the next 15 to 20 years. Management emphasis for the National Park Service's preferred alternative is protecting resources and improving visitor experiences. This goal would be accomplished by accommodating diverse visitor use, providing sustainable access on existing roads, improving mass transit opportunities, and concentrating improved educational and recreational opportunities on the developed park edges. The National Park Service plans to provide more park information to visitors so that they can better plan their visits. Under the preferred alternative, visitation and wilderness use would be managed for resource protection and to improve visitor experiences. Comprehensive maintenance, protection, and preservation measures, in accordance with the Secretary of the Interior's Standards, would be used for those structures listed or eligible for listing on the National Register of Historic Places.

3.1.1.5 World Heritage Site

The Olympic National Park was designated as a United Nations Educational, Scientific, and Cultural Organization World Heritage Site in 1981, and it is one of 20 World Heritage Sites in the United States (UNESCO 1981). The Word Heritage Site list was established under the terms of the Convention Concerning the Protection of World Culture and Natural Heritage that was adopted in 1972 at the 17th General Conference of the United Nations Educational, Scientific, and Cultural Organization. World Heritage Site objectives are to encourage the identification, protection, and preservation of cultural and natural heritage sites that are considered to be of outstanding value to humanity. These sites are listed to be protected for future generations to appreciate and enjoy. The Convention states that a World Heritage Committee will establish, keep up to date, and publish a World Heritage List of cultural and natural properties submitted by the states and considered to be of outstanding value UNESCO.

3.1.1.6 Olympic Biosphere Reserve

The Olympic Peninsula, including the Olympic National Park, was designated as a biosphere reserve in 1976 (UNESCO 1976). Biosphere reserves are areas of terrestrial and coastal ecosystems promoting solutions to reconcile the conservation of biodiversity with sustainable use. The reserves are internationally recognized, nominated by national governments, and remain under sovereign jurisdiction of the states where located. Each biosphere reserve is intended to fulfill three basic functions:

- Conservation function that contributes to the conservation of landscapes, ecosystems, species and genetic variation
- Development function that fosters economical and human development that is socio-culturally and ecologically sustainable
- Logistic function that provides support for research, monitoring, education, and information exchange related to local, national, and global issues of conservation and environment

The objective of this designation is to set aside areas with representative ecosystems to achieve the fullest possible biogeographical cover over the world and ensure systematic conservation of biodiversity.

The Olympic Biosphere Reserve is one of 51 designated biosphere reserves in the United States. This reserve is considered one of the best examples of intact and protected temperate rainforests in the Pacific Northwest. Other outstanding characteristics include rivers supporting some of the best habitat for anadromous fish species, the longest undeveloped wilderness coast in the United States, and rich native and endemic animal and plant species (UNESCO 1981).

3.1.1.7 Other Designated Areas

NMFS and the Pacific Fishery Management Council have identified essential fish habitat within the project area under Magnuson-Stevens Act authority. More information about the establishment and identification of essential fish habitat and habitat areas of particular concern is presented in Section 3.3, Marine Habitat and Species. NMFS has also identified critical habitat for certain threatened and endangered species under its ESA authority occurring within the project area. More information on critical habitat of fish species occurring within the project area is in Section 3.3, Marine Habitat and Species. More information on critical habitat for other marine wildlife, including recently designated critical habitat for southern resident killer whales

(71 FR 69057, Nov. 29, 2006), is in Section 3.5.3.1.1, ESA-Listed Marine Mammal Species, and Section 3.5.3.2.1, ESA-Listed Species (Other Marine Wildlife).

3.1.2 Makah Management of Reservation and U&A Areas

The Makah Reservation is located on the northwesternmost tip of the Olympic Peninsula (Figure 3-1) and encompasses 44 square miles of land (30,142 acres) bounded by the Pacific Ocean to the west and the Strait of Juan de Fuca to the north. The approximately 1-square-mile Ozette Reservation, 10 miles south of Neah Bay, is also part of the Makah Reservation, with the Olympic National Park managing the contiguous shoreline between the two areas of the reservation.

The relationship between the United States and Makah Tribe was formalized upon ratification of the Treaty of Neah Bay in 1855. Following the 1975 Indian Self-Determination and Education Assistance Act (Public Law [PL] 93-638), the Tribe entered into self-determination contracts with the Bureau of Indian Affairs (BIA). Later, the Tribe entered into tribal self-governance compacts in accordance with the Tribal Self-Governance Act of 1994 (PL 103-413). The tribal self-governance compact incorporates virtually all BIA programs on the reservation. The Tribe has also entered into a self-governance compact with the Department of Health and Human Services (under the Tribal Self-Governance Amendments of 2000, PL 106-260), addressing the delivery of health services to tribal members. In addition, following a series of court decisions establishing the right of the Makah and other Washington state treaty tribes to half the harvestable surplus of salmon (*United States v Washington* 1974 ['Boldt decision']) and shellfish (*United States v Washington* 1994 ['Rafeedie decision']), the federal government formally recognized that the four Washington coastal tribes (Makah, Quileute, Quinault, and Hoh) have treaty rights to groundfish in their respective U&As (Pacific Fishery Management Council and NMFS 2006). In accord with these decisions and recognition, the Makah Tribe participates in a variety of fisheries management forums such as the North of Falcon process, the Pacific Fisheries Management Council, and the Pacific Salmon Treaty.

The Makah Tribe is governed by an elected tribal council. The Constitution and Bylaws of the Makah Indian Tribe, adopted in 1936, describe the organization and authority of the Makah Tribal Council. The council consists of five members elected for staggered three-year terms. The Makah Tribal Council selects officers from its membership, including, but not limited to chairman, vice-chairman, and treasurer. Currently the secretary is appointed from outside the Makah Tribal Council. The secretary is a tribal employee fulfilling the requirements of the office

on behalf of the Makah Tribal Council. Any tribal member who is 21 years of age or older and has lived on the reservation for one year immediately preceding an election is eligible to vote, and any legal voter is eligible to be elected to serve on the Council.

As stated in the Constitution and Bylaws of the Makah Indian Tribe, the powers of the Tribal Council include the power to perform the following actions:

> To promulgate and enforce ordinances, which shall be subject to review by the Secretary of the Interior, governing the conduct of members of the Makah Indian Tribe, and providing for the maintenance of law and order, and the administration of justice by establishing a reservation Indian court and defining its duties, powers, and limitations . . . . To safeguard and promote the peace, safety, morals and general welfare of the Makah Indian Tribe by regulating the conduct of trade and the use and disposition of property upon the reservation . . . . To adopt resolutions regulating the procedure of the council itself and other tribal agencies and tribal officials of the reservation (Article IV, Sections 1(i), (j), and (n)).

The constitution and bylaws may be amended by a majority vote of the qualified tribal voters. A referendum on any proposed or enacted ordinance or resolution of the Tribal Council may be called if at least one-third of the qualified tribal voters petition for one. The majority vote of such a referendum is conclusive and binding on the Makah Tribal Council.

Laws and regulations are enforced under the provisions of the Makah Law and Order Code. The Makah Law and Order Code establishes a tribal court, defines its jurisdiction, provides for tribal police, details the selection and procedures for judges and juries, and includes a criminal code and procedures for criminal and civil actions. If NMFS authorized a gray whale hunt, the Tribe proposes to adopt laws and regulations to enforce NMFS' regulations governing the hunt.

3.1.2.1 Makah Tribal Departments and Agencies

The Makah Tribal Council oversees the operations and management of some 14 governmental departments and six tribally chartered organizations. The Council identifies priorities and aids Departments in planning through a strategic planning process. A five-year strategic plan was developed in 2005, and both the Council and Departments revisit goals and objectives annually (Makah Tribe 2005b). The 2006 annual update of the five-year strategic plan is referred to as the 2006 Update to the 2005 Comprehensive Economic Development Strategy (Makah Tribe 2006b). The five-year plan (Makah Tribe 2005b; Makah Tribe 2006b) describes the Makah Departments:

Makah Social Services comprises six programs: Domestic Violence Program, Low Income Home Energy Assistance Program, General and Employment Assistance Program, Family

Services Program, Senior Citizens Program, and United States Department of Agriculture Food Distribution Program.

Makah Education provides services to tribal/community members for higher education and the Workforce Investment Act program, i.e., funding, work placements, and clothing vouchers.

Makah Realty protects and promotes the trust assets (realty and physical property) of the Makah Tribe and the tribal membership.

Makah Operations addresses essential and basic health, legal, transportation, community beautification, and employment and training needs of tribal community.

Makah Justice Team provides a forum for resolving disputes that is consistent with applicable governing laws and in keeping with the traditional and cultural values of the Makah Tribe. This includes the tribal court system.

Makah Health Services (Sophie Trettevick Health Center) provides primary medical care and dental services. There are three permanent providers at the clinic, two medical doctors and one nurse practitioner. The clinic is open Monday through Friday, from 8:00 a.m. to 5:00 p.m., with emergency service available via 911, 24 hours a day, 7 days a week. Emergency medical situations are addressed by providing stabilization and transport to the nearest appropriate facility. Airlift Northwest (Seattle) can be called in, based on emergency medical technician and/or provider determination. If Airlift Northwest is not available, the Coast Guard may provide transport. The Coast Guard responds to open-water-related emergencies. Although the health clinic provides day-to-day care service to tribal members, it will treat anyone with life- or limb-threatening injuries. Such injured non-Indians are treated to stabilize their injuries and transport them to an appropriate facility. The facility has a memorandum of agreement with Clallam Bay Fire District 5 to provide mutual assistance in emergency situations.

Makah Forestry establishes and develops policies to guide management of the forested lands of the Makah Indian Reservation and serve as a basis for decision-making by Makah Natural Resources Departments and the Makah Tribal Council.

Makah Environmental Division includes Treaty Reserved Rights Protection, Environmental Planning, Environmental Health, Air Quality, Water Quality/Resources, and Environmental Education.

Makah Public Safety is responsible for tribal law and ordinance enforcement, emergency medical care, and fire department services. Makah Public Safety includes the Police

Department, Corrections, Communications, Adult Probation, Natural Resources Enforcement, Emergency Medical Services (providing emergency medical care 24 hours per day to residents [tribal and non-tribal individuals] and visitors to the reservation), Volunteer Fire Department, and Animal Control. There are eight uniformed police officers. In addition, four natural resources enforcement officers are responsible for enforcing hunting, fishing, and forest products permits/regulations. They are trained law enforcement officers who can supplement the Police Department officers, as needed. The Fire Department consists of two full-time employees and 10 volunteers, with two engines and one aid car. Emergency response is provided by two full-time staff and eight volunteers, with two ambulances (a third ambulance will be obtained in 2007).

Makah Planning (Community Planning and Economic Development) provides integrated, comprehensive, and traditional planning support to the Makah Tribal Council in decision-making concerning economic and community development.

Makah Fisheries Management is responsible for protecting, sustaining, and enhancing the relationship between the Makah Tribe and the many aquatic species that play a vital part in both the Tribe's cultural and economic well being. The Department manages more than 20 different fisheries within the Tribe's U&A. The fisheries target a wide variety of fish species, use diverse gear types, and span seasonal time periods throughout the entire year.

Makah Whaling Commission is housed in the Fisheries Department, although it is directly responsible to the Makah Tribal Council. The Council first adopted the Charter of the Makah Whaling Commission in 1996 with Resolution 10-97, and amended it in 2001 with Resolution 100-01. The Makah Whaling Commission conducts educational programs, in particular to train whaling crews in compliance with the tribal whaling regulations and Whaling Convention Act (WCA) regulations. The Makah Whaling Commission also initiates and conducts research on methods to improve whaling methods. The Makah Whaling Commission is organized around the traditional heads of Makah families, for the purpose of advising and making recommendations to the Makah Tribal Council regarding "rules and regulations to govern the conduct of treaty ceremonial and subsistence whaling," and "the administration and enforcement of such regulations, and [the] conduct[ing of] educational programs and research relating to ceremonial and subsistence whaling" (Makah Whaling Commission Charter 2001). The Makah Tribal Council considers the Whaling Commission's recommendations regarding tribal regulations and tribal permits authorizing the conduct of treaty ceremonial and subsistence whaling.

The Whaling Commission confirms that the whaling captain and crew have met the training guidelines and other applicable requirements for a permit. Upon concurrence of the Makah Whaling Commission, the executive director (or manager) and president sign the permit and present it to the Makah Tribal Council for approval. A whaling permit is valid upon an affirmative vote of the Makah Tribal Council and is finally approved by the tribal chair. The tribal whaling permit is issued to the whaling captain. It identifies the whaling captain, date issued, vessels involved, names of crew members, and area where the hunt is authorized. The permit also identifies conditions that will result in its termination: landing of a gray whale, striking and losing a gray whale, and expiration of the permit after 10 days (without a strike or landing) or due to voluntary termination by the Makah Whaling Commission or Makah Tribal Council.

Administrative Services Department provides administrative financial services to the Tribe, including complying with applicable federal, state, and local policies; ensuring effective financial, personnel, procurement, and property management; promoting the highest standards of integrity, impartiality, and professionalism (in conduct of administrative programs); and promoting effective coordination and improved management practices among tribal programs, the Makah Tribal Council, enterprises, and outside agencies.

Tribal Enterprises. There are several separately chartered enterprises: Makah Business Enterprises, Makah Forestry Enterprise, Makah Cultural and Research Center, Makah Housing Authority, and Port of Neah Bay/Makah Marina. Makah Business Enterprises "operates within the structure of the Tribe." The other entities operate under independent boards (appointed by Makah Tribal Council).

- **Makah Business Enterprises** is responsible for creating and enhancing a for-profit sector for the betterment of the Makah tribal community. The businesses operating under Makah Business Enterprises are intended to generate profits, develop self-sufficiency, and create employment. Five businesses operate under Makah Business Enterprises: Makah Mini-Mart/Fuel Station, Hobuck Beach RV and Cabin Resort, Makah Earth Resources Company, Warmhouse Restaurant, and Bingo.
- **Makah Forestry Enterprise** focuses on sustainable timber harvests while marketing logs and other forest-related products.
- **Makah Cultural and Research Center** is a nonprofit organization dedicated to revitalizing and preserving Makah culture. Its operations include an archive and research library, a museum, an education department, a language program, and a Tribal Historical

Preservation Department that manages cultural properties on the Reservation. Makah Cultural and Research Center receives approximately 14,000 visitors and researchers annually.

- **Makah Housing Authority** builds, rehabilitates, and weatherizes homes; acquires land for neighborhood revitalization development; and develops local capacity to provide these services.
- **Port of Neah Bay/Makah Marina** was chartered in 1996 and assumed management of the Makah Marina and Big Salmon Fishing Resort. The Marina provides year-round moorage for tribal and non-tribal fishing fleets. The Port's mission is to develop, construct, regulate, and operate facilities and infrastructure for the transportation and industrial needs of the Makah Reservation to create profitable opportunities for tribal and individual businesses through project revenues, bonds, grants, and other sources. The Port also provides administration and regulation over reservation waters and leads negotiations for recreational fishing quotas and seasons. The Port manages contracts with the Marine Spill Response Corporation and National Response Corporation and keeps a list of responders for spill responses and protection around the Olympic Peninsula (Makah Tribe 2006b).

3.1.2.2 Makah Tribal Programs and Management Plans

Through the Makah Tribal Council and tribal departments, the Makah Tribe operates numerous governmental programs under a variety of management plans. Those most relevant to this EIS are described below.

3.1.2.2.1 Makah Public Safety Program

In addition to weapons training, police officer training includes advanced narcotics training, forensics, and critical incident management. In 2005, the Makah Tribal Council adopted the National Management Incident System for response to emergencies that may affect the tribal community. Most emergency situations are handled locally, but major incidents may require assistance from state or federal authorities. The National Management Incident System was developed to better coordinate responders from different jurisdictions and disciplines in the event of natural disasters and emergencies, including acts of terrorism. Benefits include a unified approach to incident management; standard command and management structures; and emphasis on preparedness, mutual aid, and resource management. The website is http://www.fema.gov/emergency/nims/index.shtm.

Using the National Management Incident System template, the Makah Tribal Council adopted an integrated comprehensive emergency plan in 2005. The plan provides for coordinated response and unified command structure under the Makah Director of Public Safety (Police Chief). The handling of any emergency, including civil disturbance, falls under the plan. An example of the plan's implementation occurred in December 2005, when there was a water shortage emergency on the reservation due to a combination of unusual drought and storm damage. In response to the emergency, the Police Chief sought a Makah Tribal Council declaration of emergency, which placed the comprehensive emergency plan in effect.

3.1.2.2.2 Makah Fisheries Management Programs

Fisheries in Puget Sound, the Strait of Juan de Fuca, and nearshore coastal waters are co-managed by the Indian treaty tribes and the Washington Department of Fish and Wildlife (WDFW). Ocean fisheries in United States waters are regulated by the Pacific Fishery Management Council with NMFS oversight and approval under the Magnuson-Stevens Act. State and tribal biologists participate in developing the scientific information that guides the decision-making and deliberative processes of the Pacific Fishery Management Council and NMFS. Harvest of salmon is also governed internationally under the 1985 Pacific Salmon Treaty, developed through cooperation by tribes, state governments, United States and Canadian federal governments, and sport and commercial fishing groups. The treaty is implemented by the eight-member bilateral Pacific Salmon Commission, which includes representatives of federal, state, and tribal governments. The Pacific Salmon Commission does not regulate salmon fisheries, but provides regulatory advice and recommendations, and is a forum for the two countries to reach agreement on mutual fisheries issues.

The Makah Tribe regulates and coordinates its own fishery management program within its U&A. The Tribe manages fisheries for salmon, halibut and other bottom fish, rockfish, Pacific whiting, black cod/sablefish, shellfish, and other marine species off the Washington coast, in coastal rivers and bays, and in the Strait of Juan de Fuca.

According to the Makah Fisheries Management 2005 Annual Report (Makah Fisheries Management 2005), the following programs are under Makah Fisheries Management:

Groundfish Management Program. The groundfish management programs below cover Pacific halibut, blackcod (sablefish), Pacific whiting, yellowtail (rock fish), and bottom fish (groundfish):

- **Observer Program.** Since 2003, this program places an observer on fishing vessels to monitor mid-water and bottom trawl fisheries for bycatch of overfished species.
- **Marine Fish Port Sampler.** Also since 2003, this program is co-managed with WDFW (Bryant 2007). The data collected are critical for yearly stock assessments and coast-wide management of groundfish by the Pacific Fishery Management Council.
- **Yelloweye Rock Fish Bycatch Studies.** Studies are conducted on the potential to reduce the incidence of yelloweye rock fish bycatch when fishing for halibut by using three different bait types (started in 2005, under a Pacific States Marine Fisheries Commission grant) (Makah Fisheries Management 2005; Bryant 2007).
- **Shellfish Management.** This includes three dive fisheries targeting sea cucumbers and red and green sea urchins, as well as a Dungeness crab fishery in the Strait of Juan de Fuca that was implemented in 2005 (Bryant 2007).
- **Other Fisheries.** Other fisheries being explored include sardines and previously non-targeted species of flatfish (arrowtooth flounder).

Salmon Management Program. In 2005, Makah fisheries management program staff participated in the pre-season planning process for salmon management with the Pacific Fishery Management Council. In July, the Makah salmon management program staff initiated an evaluation of the all-species portion of the treaty ocean troll fishery. Salmonid fisheries include Chinook, sockeye, coho, pink, chum, and steelhead. The program includes research and monitoring, primarily of the status and progress toward recovery of local salmon stocks. Results of research and monitoring are provided to technical and policy staff for improved management. The program also provides information for use in restoration projects.

Marine Mammal Management Program. The Makah fisheries management staff are responsible for the management of marine mammals, important biological and cultural resources within the Makah U&A. Activities include participation with the International Whaling Commission (IWC) Scientific Committee and three subcommittees: Aboriginal Whaling Management Procedure; Bowhead, Right, and Gray Whale; and Environmental Concerns. The tribal staff marine mammal biologist also participated in the Pacific Scientific Review Group, which provides advice to NMFS and FWS on marine mammal stock assessments and review of sources of mortality. Other activities include conducting photographic-identification research of gray and humpback whales in the U&A, collecting biopsies from gray and humpback whales, and participating in a scientific exchange with the Chukotkan Region of the Russian Federation in 2006 to evaluate the logistics of conducting an intensive 'stinky whale' research program.

Scientific Research and Collaboration Program. Under this program, the Tribe and WDFW conduct a joint research project on Puget Sound herring stocks. The Tribe has completed a series of other research projects with federal, state, and tribal governmental agencies. Additional projects are focused on developing new fisheries (such as Pacific cod and sardine) and groundfish stocks in the Makah U&A and geoduck aquaculture in Makah Bay area.

Hatchery Operations Program. The hatchery operations program raises and rears six salmonid stocks, including two stocks of steelhead, two stocks of Chinook, coho, and sockeye.

Sustainable Resource Management Program. Activities include OCNMS Advisory Committee; Pacific Fishery Management Council; Marine Protected Areas Federal Advisory Committee; essential fish habitat, low impact development; Environmental and Marine Sciences Youth Development Program; United States Environmental Protection Agency (EPA) Data Management Network; Makah Environmental Policy Act development; Coastal Zone Management Plan development; Derelict fishing gear removal; and cooperation with Coast Guard environmental assessment of breakwater development.

Water Quality. This program samples various water systems to collect a range of data including dissolved oxygen, salinity, pH, conductivity, and turbidity.

Freshwater Habitat Enhancement Program. Principal activities of this program include participating with other tribal departments regarding on-reservation planning, development, and resource extraction projects that affect freshwater resources; participating in habitat enhancement with WDFW under the state of Washington Forest Practices Act; identifying, prioritizing, and implementing habitat rehabilitation projects benefiting aquatic habitat on the Makah Reservation and in the U&A; participating in recovery efforts of Lake Ozette Sockeye; and developing watershed planning and protection efforts with adjacent communities to protect aquatic resources on the Makah Reservation and U&A.

3.1.2.2.3 Makah Comprehensive Economic Development Strategies

The Makah Tribe's Comprehensive Economic Development Strategy (Makah Tribe 2005c; Makah Tribe 2006b) identifies the Makah Tribal Council as the approving body for economic development within the reservation. The Makah Tribe obtains most of its tribal income through marina and harbor development, Makah Forest Enterprise, and the Makah Business Enterprises.

Goals identified within the plan include the following:

- Determine the feasibility of and priority ranking for eight projects associated with marine and harbor development (marine expansion, haul-out facility, upgraded marine fuel float, aquaculture, graving dock, log dump expansion, Neah Bay harbor deep-water entry, and cruise ship facility).
- Develop a small business program for ancillary businesses that support, enhance, and fulfill needs associated with a new marina.
- Expand the forested land base for the Tribe.
- Study the feasibility of a marine fish hatchery.
- Provide academic and business training and education.
- Diversify the Makah fishing industry, specifically the whiting fishery.
- Identify new projects consistent with the Makah Tribal Land Use Committee, including a visitor center (that may be associated with an ocean-front cabin resort, motel, and new restaurant), road improvements, and a new development area that would provide a wellness/medical center, senior citizen apartments, clinic staff housing, baseball fields, and new Makah Tribal Council offices.

Other priorities included in the plan are a new clean water source for tribal use, projects that provide for downtown revitalization, Shi Shi Trail expansion, tribal communications network upgrades, a potential wave energy project, a potential wind generation development, and opportunities to provide value-added seafood processing.

3.1.2.2.4 Makah Forest Management Plan

The Makah Forest Management Plan (Makah Tribe 1999) was prepared to identify goals and objectives for maintaining a desired future condition for the Tribe's forest resources. The intent of the forest plan is to guide harvest of mostly second-growth timber while allowing for harvest of only small, scattered pockets of older timber (exceeding 100 years of age) in an attempt to keep the remaining, large, contiguous blocks of older timber intact. Annual harvests of 8.5 million board feet are expected to achieve this goal, while providing for a long-term sustainable timber harvest level. Approximately 25,735 acres (85 percent of the reservation) are managed for timber harvest, and timber sale revenues represent approximately 50 percent of non-grant (monies not received through federal grants administered by the BIA) tribal income.

3.2 Water Quality

3.2.1 Introduction

The following section describes the management and existing condition of water resources in the project area. Topics addressed include drinking water sources, shellfish harvest areas, and existing practices for the prevention of and response to spills of fuel and other contaminants. This section also addresses solid waste disposal as it relates to options for disposal of a whale carcass. Ocean currents and nearshore mixing are discussed in Section 3.3 (Marine Habitat and Species).

3.2.2 Regulatory Overview

The federal Clean Water Act (33 USC 1251 et seq.) establishes standards and regulations for protecting the quality and beneficial uses of the nation's waterways and regulates navigable waters of the United States. Federal agencies responsible for enforcing the Clean Water Act include EPA and the Army Corps of Engineers. On the Makah Reservation, EPA has delegated authority under Sections 303(c) and 401 (both water quality standards and implementation plans and dredge and fill permits), of the Clean Water Act to the Makah Tribe. On the Makah Reservation, Makah Health Code Title III states that "it shall be a violation [of the Health Code] to conduct activities in the watershed which may degrade the physical, chemical, microbiological, viral, or radiological quality of the source of supply." All proposed activities require a written permit from the Tribal Council. EPA has retained some authority over Clean Water Act management on the Makah Reservation and administers programs such as the national pollutant discharge elimination system under Section 402.

Off the Makah Reservation, EPA has delegated authority over state waters (including Sections 401 and 402) to Ecology, which is responsible for the implementation of the Washington State Water Pollution Control Act (Revised Code of Washington [RCW] 90.48). This law is intended to maintain the highest possible standards for all waters of the state consistent with public health and enjoyment; the propagation and protection of wildlife, birds, game, fish and other aquatic life; and prevention and control of pollution within waters of the state of Washington. Ecology has set water quality standards to protect the beneficial uses of surface waters. Ecology has established fresh and marine water quality standards for fecal coliform bacteria (an indicator of fecal contamination); dissolved oxygen; total dissolved gas; temperature; pH; turbidity; aesthetics; and toxic, radioactive, and deleterious materials (WAC 173-210A).

Ecology routinely collects marine water quality data as part of the long-term Marine Waters Monitoring Program, initiated in 1967. Ecology uses these long-term data to assess marine water quality in Washington State, including coastal estuarine areas represented by Willapa Bay and Grays Harbor (Ecology 2002). The agency uses these data to differentiate inter-annual and seasonal variations from those due to human activities at specific locations. Ecology uses the data primarily to maintain the federal Clean Water Act 303(d) list of impaired waterbodies throughout the state and 305(b), the report describing the overall status of the waters of the state.

3.2.3 Existing Conditions

The primary saltwater resources in the project area include the Pacific Ocean from the mouth of the Strait of Juan de Fuca to the exclusive economic zone (EEZ) boundary and the western portion of the Strait of Juan de Fuca that includes the Makah Tribe's U&A (Figure 3-1). The EEZ extends up to 200 miles offshore, and coastal states have the right to explore, exploit, and manage within its limits. Freshwater resources in the project area occur in portions of Water Resource Inventory Areas 20 (Soleduck-Hoh) and 19 (Lyre-Hoko), and portions of the Makah Reservation fall within both. Major rivers include the Wa'atch and Sooes Rivers, the two main tributaries that drain into Makah Bay from the Makah Reservation, as well as the Ozette River, which runs from Ozette Lake to the nearshore area of the Olympic National Park (Figure 3-2). These rivers all occur in Water Resource Inventory Area 20. Numerous additional smaller streams in the project area drain to the Pacific Ocean, the Strait of Juan de Fuca, and Neah Bay. Based on information Ecology provided, these waterbodies have extraordinary water quality, and none of the designated uses (shellfish harvesting, primary contact recreation, wildlife habitat, harvesting, commercial navigation, boating, and aesthetics) is restricted (WAC 173-210A).

Ecology implements marine water quality management activities in Puget Sound and the outer coastal estuaries based, in part, on periodic quantitative water quality monitoring data. The data are also used for interdisciplinary efforts aimed at assessing the health of marine ecosystem components, ranging from eelgrass to salmon, because these organisms live in and are affected by marine water and its quality.

Ecology has not listed the Pacific Ocean, the Strait of Juan de Fuca, Neah Bay, or any of the rivers and streams within the project area as impaired for water or sediment quality parameters. These parameters generally include temperature, dissolved oxygen, pH, nutrients, bacteria, metals, and toxic substances (WAC 173-210A). In addition, Ecology and the Washington Department of Health have monitored for fecal coliform bacteria at beaches along Neah Bay and

Hobuck and Sooes Beaches (Figure 3-2). Very low levels of fecal coliform bacteria were recorded on these beaches, indicating little or no contamination (Ecology 2005a).

3.2.3.1 Drinking Water Sources

Drinking water sources for the Makah Reservation (with three primary settlement areas) are local rivers and the Educket Reservoir (United States Bureau of Reclamation 2006). The difficulties in collecting and distributing water suitable for drinking led to a moratorium on residential and commercial building on the reservation in 2000. The Bureau of Reclamation is considering the following options for increasing the availability of drinking water for current use and planned growth:

- Reclamation of Educket Reservoir
- Development of an additional collection system from three creeks along Cape Flattery
- Construction and operation of a reverse osmosis desalinization plant, which would collect water from the Wa'atch River intertidal zone south of the existing tribal center through an underground collection system near the outlet of the Wa'atch River

3.2.3.2 Shellfish

The Washington Department of Health regularly monitors shellfish areas because shellfish tend to accumulate pollutants and generally reflect long-term (chronic) water quality concerns (Ecology 2002). This information supplements the periodic samples Ecology takes at discrete water quality monitoring stations. The state Surface Water Quality Standards also contain criteria to reduce the chance of people becoming ill from eating shellfish or from swimming or wading in waters of the state. Makah Fisheries and the Makah Port Authority also monitor shellfish for contamination. Managers can close shellfish beds to human harvest for two reasons: the presence of human fecal coliforms (typically from failing septic systems) and toxic algal blooms. Fecal coliforms are used as indicators of contamination. Although generally not harmful themselves, they indicate the possible presence of pathogenic (disease-causing) bacteria, viruses, and protozoans that live in the digestive systems of humans and other animals (EPA 1997). Toxins associated with algal blooms include domoic acid, saxitoxin, and gonyautoxin derivatives. These naturally occurring neurotoxins may be harmful if consumed in significant concentrations, which can occur when people eat crabs or shellfish that have accumulated toxins by feeding on toxic algae.

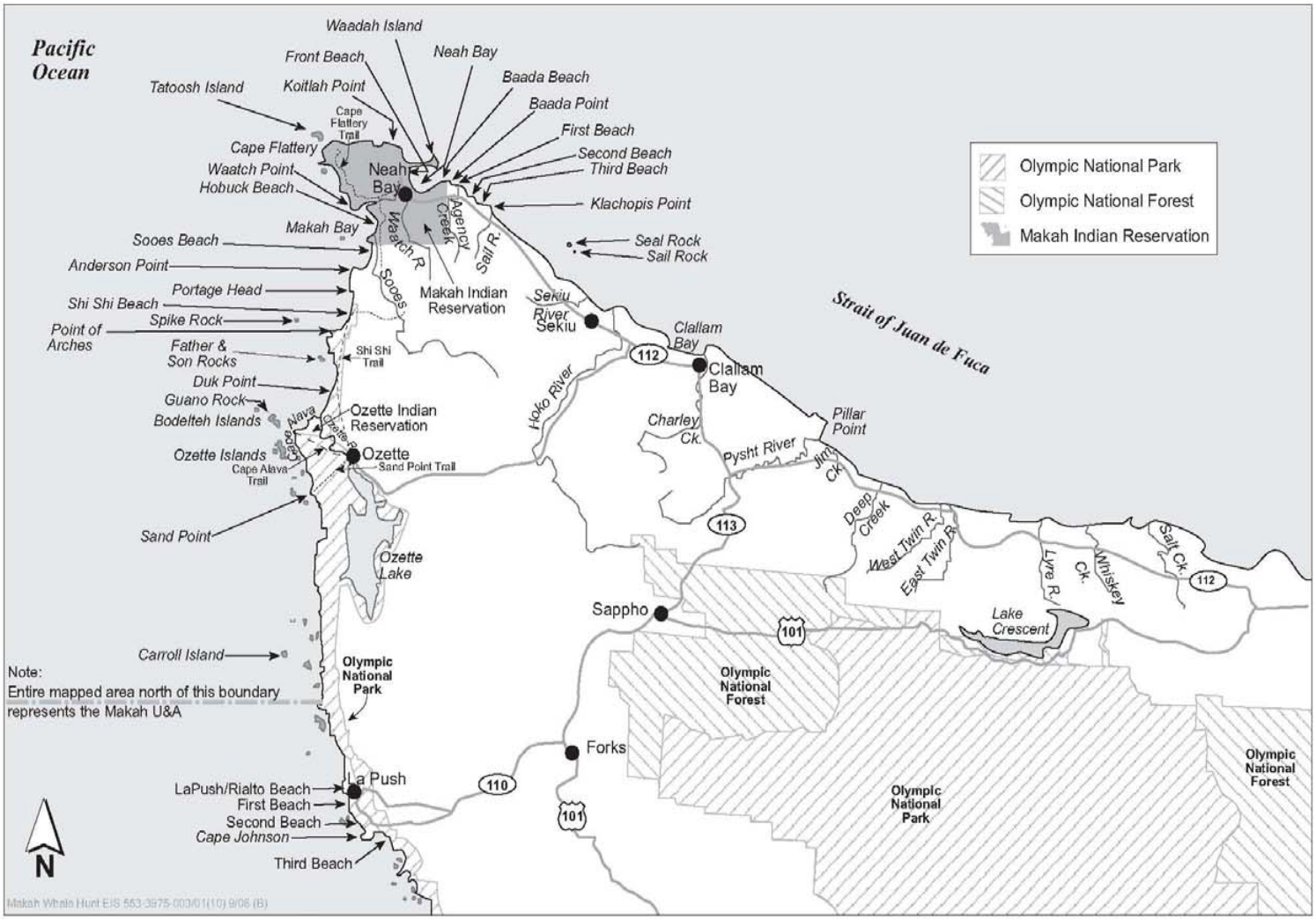


Figure 3-2. Topographic Features of Interest

Neither WDFW nor the Washington Department of Health has identified or mapped any recreational or commercial shellfish beds within the project area along the Pacific Ocean (WDFW 2005a). Subsistence shellfish gathering takes place at Neah Bay, Makah Bay, and other relatively rocky areas on the reservation. Butter clams, steamer clams, and cockles are gathered on the west and east ends of Neah Bay. A horseclam bed occurs on Front Beach, near where the gray whale was landed in 1999. A pilot project by Makah Fisheries Management with geoduck aquaculture is also underway on Front Beach. Additional species, such as mussels, are gathered in intertidal rock areas throughout the reservation. The only commercial activity associated with this gathering is limited local selling.

The Washington Department of Health previously closed shellfish harvesting in the southern portions of Neah Bay due to potential pollution (primarily fecal coliform) associated with a sewer outfall and marina located in this area (Washington Department of Health 2005). By summer 2006, however, most shellfish harvest was open (WDFW 2006a). The Department of Health also recently closed waters along the Pacific Ocean within the project area due to the results of biotoxin tests (Washington Department of Health 2005). In general, the beaches located within the project area are hotspots for algal blooms, at least partially because of the nutrient-rich waters and mixing that occur at the mouth of the Strait of Juan de Fuca (WDFW 2004). Algal blooms are triggered by a complex interaction of environmental conditions, and the duration and timing of closures are difficult to predict.

3.2.3.3 Spill Prevention

The project area includes national and international shipping lanes and is open to recreational boating and commercial and recreational fishing. Wherever marine vessels are present, there is a risk that pollutants from boat emissions and/or spills will enter the water. As discussed above, however, Ecology has not listed any of the waters of the project area as impaired for water or sediment quality parameters; some impairment of marine waters has, however, occurred during major spill events.

Currently several organizations are prepared to respond to emergency spills in Puget Sound, the Strait of Juan de Fuca, and off the Washington coast (Ecology 2003a). These organizations include National Response Corporation Environmental and Marine Spill Response and Clean Sound Cooperative. As part of Ecology's Spill Prevention, Preparedness, and Response Program, it stations a rescue tug in Neah Bay seasonally to assist tankers and cargo ships that are drifting or

need support during bad weather (Ecology 2005b). In general, pollutants (such as hydrocarbons) are associated with gasoline and diesel engines, as well as vessel traffic, and they enter the environment from spills and/or exhaust. Smaller oil spills could occur during fueling and maintenance operations at docks.

The nearshore portion of the Makah U&A corresponds largely with the designated area to be avoided for the OCNMS. This designation is meant to reduce the potential for catastrophic oil spills by encouraging big ships (carrying large amounts of bunker fuel) to avoid the nearshore areas of the coast. While this designated area does not encompass the entire OCNMS, its boundaries protect sanctuary resources most at risk from vessel casualties, while being compatible with existing vessel traffic lanes (Galasso 2000). See Section 3.1.1.1.3, Olympic Coast National Marine Sanctuary, Current Issues, Area to be Avoided, and Section 3.13.2, Transportation, Regulatory Overview.

3.2.3.4 Solid Waste Disposal

There is a landfill at Neah Bay that is used solely by residents and businesses on the Makah Reservation. The facility, which is under the jurisdiction of the Makah Tribal Council, is currently the only landfill in Clallam County that accepts municipal solid waste (Parametrix 2007). In the 1980s, a solid waste management plan for the Makah Reservation recommended closure of the Neah Bay landfill and construction of a transfer station to haul waste to the closest permitted disposal facility (Paul S. Running and Associates 1983). A comprehensive solid waste management plan update prepared for Clallam County indicated that siting a new municipal solid waste landfill in Clallam County is not feasible due to various factors including climate, geography, land use, and the availability of a lower-cost option to export waste (Parametrix 2007). The Makah Tribe has recently obtained funding to design a new transfer station at the site of the Neah Bay landfill and is proceeding with plans to close the landfill (Parametrix 2007).

The two primary generators of animal carcasses in Clallam County are the Humane Society (in Port Angeles) and Battelle Marine Sciences Laboratory (near Sequim). Both organizations use Petland Crematorium in Aberdeen for cremation of animals. Battelle sends hazardous carcasses to Pacific Marine Lab for disposal. The Clallam County Road Department buries roadkill carcasses at remote locations on public lands scattered throughout the county (Parametrix 2007).

3.3 Marine Habitat and Species

3.3.1 Introduction

The marine environment off the coast of Washington is highly energetic, productive, and dynamic, supporting a wide range of invertebrates, fish, and marine wildlife. The ecological importance of the habitat was acknowledged in the OCNMS designation (NOAA 1993). High biological productivity, diversity of habitats, the wide variety of marine mammals and birds living in or migrating through the area, and the presence of endangered and threatened species and essential habitats were identified as some of the biological resources giving the Sanctuary particular value (Section 3.1.1.1, Olympic Coast National Marine Sanctuary, for more detail). The dynamic physical processes and high levels of disturbance experienced along the Washington coast, including the project area, affect ecosystem structure, ecological interactions, and species' recruitment dynamics. Understanding the physical processes in the project area will inform the analysis of potential direct and indirect effects to the ecosystem from activities associated with the proposed hunt.

The description of the marine ecosystem that follows is organized by pelagic environment (open water column) and benthic environment (bottom substrata), identifying physical features and processes and biological resources associated with each environment. ENP gray whales and other marine wildlife in the project area are described in more detail in other sections (Section 3.4, Eastern North Pacific Gray Whale, and Section 3.5, Other Wildlife Species).

3.3.2 Regulatory Overview

The conservation, preservation, and management of marine habitat and biological resources in the project area occur under several statutory and regulatory authorities, the most pertinent of which are detailed below.

Under federally granted Coastal Zone Management Act authority, Ecology administers Washington State's coastal zone management program on the state's shoreline (under the Shoreline Management Act) and waters (under the Aquatic Management Act), except for excluded federal lands (i.e., lands that the federal government owns, leases, holds in trust, or otherwise has sole discretion to determine their use, such as the Olympic National Park coastal strip and the Makah and Ozette Reservations).

Under the National Marine Sanctuaries Act and regulations, marine plants and algae, invertebrates, plankton, and fish are protected and conserved as Sanctuary resources within the

boundaries of the OCNMS. Federal designation and management of the OCNMS and protection of Sanctuary resources by NOAA's National Marine Sanctuaries Program under the National Marine Sanctuaries Act, including protection and management of habitat such as bottom formations and substratum, is described above in Section 3.1.1.1, Olympic Coast National Marine Sanctuary. Federal designation and management of the rocks and islands comprising the Washington Islands National Wildlife Refuges are also described above in Section 3.1.1.2, Washington Islands National Wildlife Refuges.

The Pacific Fishery Management Council and NMFS are the primary federal management authorities for managing and conserving living marine resources, including marine fish and plants, out to 200 miles from shore under the Magnuson-Stevens Act and the North of Falcon planning process. Northwest Indian tribes and WDFW also participate in fisheries management. Under the Magnuson-Stevens Act, NMFS and the Pacific Fishery Management Council also protect habitat identified as essential for commercially important fish species. Essential fish habitat is defined under the Magnuson-Stevens Act as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 USC 1802 Section 3(10)). Regulatory guidelines elaborate that the words 'essential' and 'necessary' mean that essential fish habitat should be sufficient to "support a population adequate to maintain a sustainable fishery and the managed species' contributions to a healthy ecosystem." The Pacific Fishery Management Council describes essential fish habitat in their fishery management plans, minimizes impacts to essential fish habitat resulting from fishing activities, and consults with NMFS about activities that might affect essential fish habitat. The council may use fishing gear restrictions, time and area closures, harvest limits, and other measures to lessen adverse impacts on essential fish habitat. The Magnuson-Stevens Act also encourages NMFS to designate habitat areas of particular concern. These are specific habitat areas, a subset of the much larger area identified as essential fish habitat, that play a particularly important ecological role in the fish life cycle or that are especially sensitive, rare, or vulnerable. Designating habitat areas of particular concern allows the Pacific Fishery Management Council and NMFS to focus their attention on conservation priorities during review of proposals, affords those habitats extra management protection, and gives the fish species within these areas an extra buffer against adverse impacts.

Under the ESA, NMFS and FWS are responsible for the conservation of threatened and endangered species, including fish, wildlife, and plants under their jurisdiction. The agencies are

required to identify and designate critical habitat for threatened and endangered fish and wildlife species under their jurisdictions. 'Critical habitat' is (1) specific areas within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation. Under Section 7 of the ESA, all federal agencies must ensure that any actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species, or destroy or adversely modify its designated critical habitat. These complementary requirements apply only to federal agency actions, and the latter apply only to habitat that has been designated. A critical habitat designation does not set up a preserve or refuge; it applies only when federal funding, permits, or projects are involved.

3.3.3 Existing Conditions

3.3.3.1 Pelagic Environment

The term 'pelagic' is commonly used in reference to the upper water column of the open ocean that is not in association with the ocean bottom or bathymetric features. The oceanographic processes in the action area are generally large in scale, with ocean circulation driven by a major eastern boundary current system, the California Current System. Local conditions are energetic, dynamic, and affected by oceanographic processes operating across a spectrum of temporal and spatial scales. These physical processes and their pronounced effects on the area's biota are described in the following sections.

3.3.3.1.1 Physical Features and Processes

Large-Scale Ocean Currents

The project area on the Washington coast is situated in an eastern boundary current system where the North Pacific Current divides into the northward flowing Alaska Current and the California Current System to the south (Hickey 1998; Gramling 2000). The California Current System is composed of the California Current, the California Undercurrent, the wintertime Davidson Current, and possibly a subsurface Washington Undercurrent. The relative strength of these currents and their influence on the temperature, salinity, flow, and productivity of the project area varies considerably over seasonal and interannual time scales (Hickey 1998; Hickey and Banas 2003; MacCall et al. 2005). The components of the California Current System are described

below, along with discussion of how they contribute to the dynamic physical environment of the project area.

The California Current extends up to 600 miles offshore and ranges from the Pacific Northwest south to Baja California (Hickey 1979; Miller 1996; Hickey 1998; Burtenshaw et al. 2004). The California Current is a major force in shaping local ecosystems by affecting upwelling, downwelling, and biological production along the Pacific coast (Airamé et al. 2003). Despite being one of the most studied oceanographic systems in the Pacific Ocean, the mechanisms underlying the variability of this meandering current are still obscurely understood and inadequately sampled (Miller 1996). Flow of the California Current is strongest in the summer and early fall and weakest in the winter (Hickey 1998; Gramling 2000; Hickey and Banas 2003). The California Current is strongly affected by seasonal wind forcing (Thomas et al. 2003), and shifts in regional climate can have dramatic effects on its flow (e.g., during El Niño events, the flow of the California Current is unusually weak; Hickey 1979; Gramling 2000). For further description of El Niño events, see El Niño Southern Oscillation Cycle below in this section.

The California Undercurrent is a permanent, relatively narrow (6- to 25-mile), deep subsurface feature that flows northward over the continental slope from Baja California to Vancouver Island (Reed and Halpern 1976; Hickey 1998; Neander 2001). The California Undercurrent transports warm, saline, low-oxygen, equatorial water to the northern Pacific, with strongest northward flows in the summer or early fall and minimum flows in the spring (Hickey 1998; Neander 2001; Hickey and Banas 2003). During El Niño years, when flow of the California Current is weakened, the California Undercurrent is unusually enhanced (Hickey 1979; Gramling 2000).

The Davidson Current is an inshore, seasonal, northward flowing feature that develops when the southward flowing California Current is weaker and situated further offshore. The Davidson Current is approximately 60 miles wide, extends seaward of the continental slope, and transports warm, saline, low-oxygen, high-phosphate, equatorial water to the north (Gramling 2000; Hickey and Banas 2003). The Davidson Current develops along the Washington coast in September, is well established in January, and dissipates by May (Purdy 1990; Hickey and Banas 2003). The strongest flow of the current occurs during the winter months (Hickey and Banas 2003). There is speculation that the Davidson Current is a surface expression of the California Undercurrent (Hickey 1979).

There is some indication that a southward undercurrent, the Washington Undercurrent, occurs over the continental slope of Washington and Oregon in the winter (Werner and Hickey 1983; Purdy 1990). This undercurrent is located 1,000 to 1,600 feet deep, deeper than the northward-flowing California Undercurrent (Hickey 1998; Hickey and Banas 2003).

Dynamic Processes and Variability

Seasonal Variability, Upwelling, and Down-welling

Seasonal variations in the oceanography of the project area occur in response to various forcing events, including solar heating and cooling, wind mixing, freshwater runoff, and coastal upwelling (Brueggeman et al. 1992). The seasonal pattern of the physical environment is typified by periods of intense coastal upwelling (April through September) and periods of relaxed winds (October through March) punctuated by strong winter storms (November to March).

Upwelling is a wind-driven, dynamic process that brings nutrient-rich deep water to the surface and transports nutrient-poor surface waters offshore (Mann and Lazier 1991). During spring and summer, northwesterly winds and the earth's rotation combine to push the surface waters offshore. This, in turn, results in the movement of deeper cold water upward into surface waters, introducing nitrate, phosphate, and silicate nutrients essential for phytoplankton production. Periods of wind relaxation lasting two to six days may alternate with upwelling-favorable conditions during the spring, contributing to dynamic and patchily distributed nutrient availability and productivity. The strongest upwelling in the project area occurs during July and August (Brueggeman et al. 1992; Airamé et al. 2003). Prolonged periods of wind relaxation may occur from late summer to early fall. The timing and intensity of regional upwelling varies from year to year (Huyer et al. 1979; Strub and James 1988) and with changes in long-term climatic phenomena (El Niño Southern Oscillation Cycle and Pacific Decadal Oscillation in this section, below) (Huyer and Smith 1985; Barth and Smith 1997).

In October or November, there is a shift in wind direction that results in predominant winds that flow from the east/southeast (Norman et al. 2004), resulting in the onshore transport of surface waters and the conditions typical of fall and winter that favor downwelling (Hickey 1998). During periods of diminished upwelling or downwelling, the survivorship and reproductive success of planktivorous invertebrates and fishes decrease in response to reduced plankton abundance and productivity (Airamé et al. 2003). Between late November and mid-March, low pressure systems from the Gulf of Alaska generate strong winter storms, southerly winds, and

large waves in the Pacific Northwest (Strub and Batchelder 2002; Airamé et al. 2003). These winter storms create intense vertical mixing, usually persist for only a few days, are important sources of localized oceanographic disturbance.

Eddies and Fronts

During the spring, the large counterclockwise Juan de Fuca Eddy (or Tully Eddy; Tully 1942) develops offshore of northern Washington at the mouth of the Strait of Juan de Fuca (Burger 2003; Hickey and Banas 2003). The eddy forms as a result of the interaction between effluent from the Strait of Juan de Fuca, southward wind-driven currents along the continental slope, and the bathymetry of the region (Hickey and Banas 2003). At its maximum, the eddy has a diameter of approximately 30 miles, and it is the dominant circulation pattern off northern Washington until its decline in the fall (Freeland and Denman 1982; Hickey and Banas 2003). The eddy upwells deep, cold, nutrient-rich water into surface waters, resulting in locally enhanced biological productivity (Freeland and Denman 1982; Thomson et al. 1989; Freeland 1992).

Ephemeral eddies and offshore filaments of variable duration (days, weeks, months, years) are also generated by meanders of the California Current, bathymetric features, and coastal upwelling events. Such ephemeral features are most common during summer and fall in the California Current System (Huyer et al. 1998; Barth et al. 2000; Strub and James 1988; Ressler et al. 2005). As with the Juan de Fuca Eddy, ephemeral counterclockwise eddies stimulate enhanced productivity by drawing cooler, nutrient-rich waters to the surface, while clockwise eddies are associated warmer, nutrient-poor, and less productive conditions. Ephemeral eddy-like features are also generated by the Columbia River plume (Columbia River Plume below in this section) (Yankovsky et al. 2001; Berdeal et al. 2002). Subsurface eddies are generally observed within and overlying submarine canyons off the Pacific coast (Hickey and Banas 2003), providing an effective mechanism for locally increased productivity and the suspension of sediment and organic detritus over these features (Hickey 1995).

Oceanic 'fronts' are zones of high water property gradients (e.g., gradients in temperature, salinity, and nutrients). Ephemeral fronts often exist at the interface between upwelled water and ambient coastal water, and the onset and relaxation of upwelling may result in the cross-shelf transport of planktonic organisms associated with these gradients. Persistent fronts tend to occur regularly at certain locations along the coast (e.g., capes and points) and may extend 60 miles

offshore (Short 1992). Ephemeral fronts generated off of Vancouver Island may extend southward off of the Washington coast near the project area (Freeland and Denman 1982).

Columbia River Plume

The Columbia River plume, through its influence on sea surface salinity, has a major effect on the coastal oceanography of the Pacific Northwest, including the project area. In general, salinity increases southward along the Pacific coast (Hickey and Banas 2003). However, the low-salinity plume of freshwater discharge from the Columbia River constantly changes direction, depth, and width in response to variation in discharge and fluctuations in local wind strength and direction (Hickey et al. 1998; Berdeal et al. 2002; Hickey and Banas 2003). In spring and summer, the plume moves southward, well offshore of the Oregon shelf (Hickey and Banas 2003) and has no influence on the coastal oceanography of the project area. During the winter, however, the plume flows northward and can generate local currents with magnitudes on the order of wind-driven currents in the near-surface layer (Hickey et al. 1998). In addition to seasonal variability, the structure and magnitude of the Columbia River plume has significant interannual and long-term variability (Hickey and Banas 2003). For example, in years of high snowmelt in the Pacific Northwest, freshwater generated from the plume can influence coastal oceanography for prolonged periods.

El Niño Southern Oscillation Cycle

El Niño Southern Oscillation events (including both El Niño and La Niña events) produce extreme interannual anomalies in global climate, atmospheric circulation, and oceanographic processes (Jacobs et al. 1994; Schwing et al. 1996). El Niño Southern Oscillation conditions typically last 6 to 18 months, although they can persist for longer periods (Barber and Chavez 1983; Lynn et al. 1998; Durazo et al. 2001; Schwing et al. 2002a; Schwing et al. 2002b). El Niño conditions occur when unusually high atmospheric pressure develops over the western tropical Pacific and Indian Oceans, and low sea level pressures develop in the southeastern Pacific (Trenberth 1997; Conlan and Service 2000). The trade winds consequently weaken in the central and west Pacific, reducing the normal east to west surface water transport. Upwelling along South America decreases, resulting in shoaling of the thermocline, increased sea surface temperatures, and diminished productivity across the mid to eastern Pacific (Donguy et al. 1982). Rainfall patterns also shift eastward across the Pacific, resulting in increased (sometimes extreme) rainfall across the southern United States and Peru (Conlan and Service 2000). La Niña is the opposite

phase of El Niño in the El Niño Southern Oscillation Cycle. La Niña is characterized by strong trade winds that push the warm surface waters back across to the western Pacific (Schwing et al. 2000). Under these conditions there is increased upwelling along the eastern Pacific coastline, the thermocline in the eastern Pacific becomes shallower, and there is increased upwelling and productivity.

Although the direct effects of El Niño Southern Oscillation events are observed in the equatorial latitudes, significant correlations exist between the climate of the Pacific Northwest and El Niño/La Niña events (e.g., Pulwarty and Redmond 1997; Cayan et al. 1999). In the Pacific Northwest, El Niño events are characterized by increases in ocean temperature and elevated sea level (4 to 12 inches), enhanced onshore and northward flow, and reduced coastal upwelling (Crawford et al. 1999; Smith et al. 1999; Freeland 2000; Airamé et al. 2003). Historically, the region was impacted by strong El Niño events in 1940, 1958, 1983, 1992, 1997 to 1998, and 2004 to early 2005 (Hayward 2000; Lyon and Barnston 2005). The 1997 to 1998 El Niño was one of the largest ocean perturbations in the historical record, inducing a 4-degree to 5-degree Fahrenheit (F) warming of sea surface temperatures over the historical average and profoundly affecting the productivity and marine ecology of the region (Castro et al. 2002; Airamé et al. 2003; Childers et al. 2005; Zamon and Welch 2005). This El Niño was immediately followed by an equally strong, cold La Niña event in 1999. For the ENP gray whale, Section 3.4.3.3, Distribution and Habitat Use, discusses the effect of oceanic climatic cycles, including El Niño/La Niña events, on gray whale distribution and habitat use; Section 3.4.3.4.2, Stranding Data, discusses the potential relationship between the 1997 and 1998 El Niño events and the ENP gray whale unusual mortality event.

Pacific Decadal Oscillation

The Pacific Decadal Oscillation is a long-term (approximately every 20 to 30 years) climatic pattern correlated with alternate regimes of sea surface temperature, surface winds, and sea level atmospheric pressure (Mantua 2002; Mantua and Hare 2002). The Pacific Decadal Oscillation is often described as a long-lived, El-Niño-like pattern of Pacific climate variability with both warm and cool phases (Mantua 2002; Mantua and Hare 2002; Airamé et al. 2003; Minobe et al. 2004). There are, however, noteworthy distinctions between the Pacific Decadal Oscillation and El Niño Southern Oscillation-induced events: (1) Pacific Decadal Oscillation regimes can persist for 20 to 30 years, in contrast to the comparatively shorter duration of El Niño Southern Oscillation events

(typically up to 18 months) (Minobe 1997; Minobe 1999; Hare and Mantua 2000; Mantua and Hare 2002); (2) the ecosystem effects of the Pacific Decadal Oscillation are more pronounced in temperate latitudes (Hare and Mantua 2000); and (3) the mechanisms controlling the Pacific Decadal Oscillation are unknown, while those underlying El Niño Southern Oscillation variability have been well resolved (Mantua and Hare 2002). During warm Pacific Decadal Oscillation regimes, the western and central North Pacific Ocean typically exhibit cold sea surface temperature anomalies, while the eastern Pacific (including the project area) exhibits above-average temperatures and reduced productivity. The opposite conditions exist during cool Pacific Decadal Oscillation regimes. The Pacific Decadal Oscillation has been correlated with markedly different regimes of Columbia River discharge (Mantua et al. 1997), ocean productivity, zooplankton species composition, and forage fish and salmonid recruitment in the Pacific Northwest (e.g., Hare et al. 1999; Tanasichuk 1999; Botsford 2001; Mueter et al. 2002; Gustafson et al. 2006). The Pacific Decadal Oscillation regime shifts are abrupt, with observed shifts occurring in 1925, 1947, and 1977 (Hare 1996; Minobe 1997). The most recent shift, from a warm to a cool phase, occurred in 1998 (Airamé et al. 2003; Peterson and Schwing 2003; Childers et al. 2005; Gómez-Gutiérrez et al. 2005). For the ENP gray whale, Section 3.4.3.3, Distribution and Habitat Use, discusses the effect of oceanic climatic cycles, including the Pacific Decadal Oscillation, on gray whale distribution and habitat.

3.3.3.1.2 Biological Resources

Phytoplankton

The biological productivity and composition of the project area is best characterized as diverse, variable, and patchily distributed owing to the dynamic physical processes described above which vary across a spectrum of temporal and spatial scales. Phytoplankton (freely floating photosynthetic organisms) are responsible for the bulk of the primary production in the ocean (the conversion of inorganic carbon to organic matter) and form the basis of the pelagic ecosystem. The distribution and concentration of phytoplankton are affected by ocean currents, vertical mixing, and the rate of photosynthesis. The intensity and quality of light, the availability of nutrients, and seawater temperature all influence rates of photosynthesis (Valiela 1995). The Pacific Northwest coast supports high phytoplankton production, stimulated by the upwelling of nutrient-rich waters and retention of phytoplankton by local oceanographic currents and bathymetric features (Sutor et al. 2005). In general, the Washington coast experiences two seasonal peaks in phytoplankton production; the first occurs from February to April, and the

second occurs in October. There is, however, considerable spatial and temporal variability in the production and distribution of phytoplankton caused by the physical oceanographic processes described above. For example, during an El Niño event, less upwelling occurs along the Pacific Northwest, fewer nutrients are available for phytoplankton growth, and phytoplankton concentration may decrease by as much as 70 percent compared to an average year (Wheeler and Hill 1999; Thomas and Strub 2001).

In addition to controlling the distribution and concentration of phytoplankton, physical oceanographic processes also affect the species and size composition of phytoplankton in the water column. For example, the onset and relaxation of upwelling events result in dramatic shifts in the phytoplankton community within the California Current System. Newly upwelled water along the shelf is composed chiefly of high concentrations of large, chain-forming diatoms. Following upwelling events, the phytoplankton community is predominantly composed of reduced concentrations of small phytoplankton species (less than 5 microns in size) (Sherr et al. 2005) better adapted to survival in low-nutrient conditions. Similarly, during low productivity conditions induced by El Niño events, 80 to 90 percent of the phytoplankton community along Pacific Northwest shelf waters consists of these smaller phytoplankton species (Corwith and Wheeler 2002; Sherr et al. 2005).

Zooplankton

Zooplankton are a taxonomically diverse group of organisms that consume phytoplankton (as well as other zooplankton). Juvenile crabs (megalopae), copepods, amphipods, euphausiids, and chaetognaths tend to dominate the near-surface zooplankton community (Peterson 1997; Reese et al. 2005; Swartzman et al. 2005). The distribution of zooplankton along the coastline can be described as spatially and temporally patchy, reflecting the variable concentration and distribution of phytoplankton prey, as well as the underlying dynamic physical environment (Reese et al. 2005; Ressler et al. 2005). The highest zooplankton concentrations typically are found within 90 miles of the coastline (Swartzman and Hickey 2003; Ressler et al. 2005; Swartzman et al. 2005) in the upper 66 feet of the water column over the inner and mid shelf (Peterson and Miller 1975; Peterson and Miller 1977). Zooplankton densities along the Pacific Northwest are highly seasonal, with summer densities ten times greater than those observed during the winter months (Burger 2003; Reese et al. 2005). Copepods form the largest fraction of the zooplankton biomass. Although smaller copepods are numerically dominant (e.g., *Acartia* spp.), larger copepods

comprise most of the zooplankton biomass (e.g., *Calanus* spp.) (Strickland 1983) and tend to feed on the diatoms that dominate under upwelling conditions. Euphausiids, amphipods, and mysids are also important components of the zooplankton assemblage (Strickland 1983). Ephemeral, seasonal, interannual, and interdecadal physical oceanographic processes (described above) largely control the abundance, distribution, and species composition of zooplankton in the region (e.g., Batchelder et al. 2002; Botsford 2001; Peterson 1999; Peterson and Miller 1977; Peterson and Keister 2003; Tanasichuk 1999).

Fish and Invertebrates

The productivity of the project area is strongly affected by the California Current System and the dynamic physical oceanographic processes inducing variability within the California Current System, as noted in previous discussions. The high productivity of the region produces a diverse plankton community that, in turn, supports a large assemblage of pelagic marine fish and invertebrates dependent upon this spatially and temporally patchy planktonic food supply (e.g., diatoms, dinoflagellates, copepods, euphausiids, and other organisms). Marine fish and invertebrate species associated with the pelagic environment include coastal pelagics, salmonids, and highly migratory species (Table 3-1). Various physical features within the project area such as ocean currents, upwelling, the Columbia River plume, fronts, and eddy features influence the distribution and abundance of pelagic prey species, as well as that of their fish and invertebrate predators (Doyle 1992; Dower and Perry 2001; Nasby-Lucas et al. 2002; Williams and Ralston 2002; Bosley et al. 2004; Emmett et al. 2004; Emmett et al. 2006). The distribution and abundance of pelagic fish and invertebrate species also are profoundly affected by inter-annual and inter-decadal climatic variations such as El Niño/La Niña or Pacific Decadal Oscillation (Hickey 1993). For example, dramatic changes in species assemblages were observed during extreme El Niño/La Niña years (1998 to 2002) off northern Washington State to central Oregon. The pelagic community shifted from one dominated by southern species (mackerels and hake) to one dominated by northern species (squid, smelts, and salmon), with the small pelagic species (sardines, herring, and anchovy) showing no consistent trends in abundance over this time (Brodeur et al. 2005).

Coastal Pelagic Species

The coastal pelagic species in the project area include four finfish species (Pacific sardine, *Sardinops sagax*; Pacific [chub] mackerel, *Scomber japonicus*; northern anchovy, *Engraulis*

mordax mordax; and jack mackerel, *Trachurus symmetricus*) and market squid (*Loligo opalescens*) (NOAA 1993; Pacific Fishery Management Council 2003a; Table 3-1). The distribution of coastal pelagic species typically depends on water temperature, but can vary both annually and seasonally (Pacific Fishery Management Council 2005a). For many of these species, occupancy zones may vary by life-history stage.

TABLE 3-1. ASSOCIATIONS AND TIMES OF OCCURRENCE FOR PELAGIC AND BENTHIC SPECIES POTENTIALLY PRESENT IN THE PROJECT AREA.

FISH	TYPICAL HABITAT	TIME OF OCCURRENCE
Coastal Pelagic Species		
Sardine/anchovy/herring	Pelagic (open water) schooling fish	Winter-summer
Mackerel	Pelagic, schooling fish	Spring-summer
Squid	Pelagic, shelf zone	Spring-summer
Salmon		
Pacific salmon and steelhead	Pelagic, nearshore, upwelling areas	Year-round
Sea-run bull and cutthroat trout	Pelagic, nearshore, upwelling areas	Fall through winter (returning adults); spring (juvenile outmigrants)
Highly Migratory Species		
Tuna	Pelagic, shelf and slope	Year-round
Shark	Pelagic, nearshore, upwelling areas	Year-round
Groundfish		
Rockfish	Demersal (on or near the bottom), nearshore, shelf, and slope rocky areas	Year-round
Thornyhead	Demersal, shelf or slope, soft-bottom areas	Year-round
Flatfish	Demersal, nearshore/shelf, and slope sandy, muddy, or gravelly bottoms	Year-round
Gadid	Pelagic/semipelagic, nearshore, and shelf in large inlets	Year-round
Shark	Pelagic, nearshore and shelf	Year-round
Skate	Demersal, shelf, mud or sand substrate	Year-round
Lingcod and cabezon	Demersal, nearshore, rocky, or steep slopes	Year-round
Sablefish	Demersal, shelf slope, sand, mud, or clay substrate	Year-round
Green sturgeon	Demersal, shelf slope, sand, mud, or clay substrate	Summer
Other Demersal Species		
Halibut	Demersal, shelf, sand, and gravel substrate	Year-round
Crustaceans: myssids, euphaussids, amphipods	Nearshore, sand/mud substrate	Year-round
Crab	Nearshore, sand/mud substrate	Year-round

The Pacific Fishery Management Council and NMFS identified essential fish habitat for coastal pelagic species based on the temperature range where the fish occur and on the geographic area where they are present at any particular life stage. This range varies widely according to ocean temperature. Identifying essential fish habitat for coastal pelagic species is also based on where these species have been observed in the past and where they may occur in the future.

The east-west boundary of essential fish habitat for coastal pelagic species includes all marine and estuary waters from the coasts of California, Oregon, and Washington to the limits of the EEZ and above the thermocline (Pacific Fishery Management Council 2006). A thermocline is the depth where water temperature changes relatively rapidly and separates less dense, warmer waters from denser, colder waters. Surface temperatures above the thermocline exhibit considerable variability, ranging from 50 to 79 degrees F. The northern essential fish habitat boundary is defined as the position of the 50-degree F isotherm, which varies seasonally and annually. The 50-degree F isotherm is a rough estimate of the lowest temperature where finfish are found; thus, it represents their northern boundary. In years with cold winter sea surface temperatures, the 50-degree F isotherm during February is around 43 degrees north latitude in the offshore zone and slightly farther south along the coast. In August, this northern boundary moves up to Canada or Alaska (Pacific Fishery Management Council 2006). Therefore, the northern extent of essential fish habitat for coastal pelagic species likely occurs south of the project area in winter. During spring and summer months, with the northward migration of the 50-degree F isotherm, essential fish habitat likely occurs within the project area.

Salmonid Species

All Pacific salmonid species exhibit varying forms of anadromy (they spend their early life stages in freshwater, migrate to the ocean to grow and mature, and return to freshwater as adults to reproduce). For further information on the life history and behavioral ecology of Pacific salmonid species, see Groot and Margolis (1991) and Emmett et al. (1991). Twenty-six population groups of West Coast salmon and steelhead (*Oncorhynchus* spp.) are currently listed as threatened (21) or endangered (5) under the ESA. Steelhead in Puget Sound were also recently proposed for listing as threatened (71 FR 15666, March 29, 2006). Threatened bull trout populations occur in major coastal rivers of Washington (64 FR 58913, November 1, 1999); although limited data exist regarding the distribution of bull trout in marine waters, they are known to migrate between

these rivers and are expected to occur occasionally in the project area (U.S. Fish and Wildlife Service 2004). Although some of the ESA-listed species noted above might occur in the project area, there is no designated critical habitat within the project area, except for the freshwater habitat areas used by threatened Ozette Lake sockeye salmon. The depressed production of many West Coast salmonid stocks, particularly the ESA-listed stocks, is due to a combination of factors, including freshwater habitat degradation and unfavorable ocean conditions during the 1990s. The population sizes of some of these salmonid species have increased in recent years, presumably in part due to improved ocean survival conditions (Pacific Fishery Management Council 2003b). As noted above, run sizes of salmonid stocks over decadal time scales appear to be strongly affected by the Pacific Decadal Oscillation ocean climate cycle. Salmonid species are also influenced by El Niño events, with the effect depending on the preferred water depth of the given species. Salmon that prefer more shallow habitats, such as coho, are more likely to be affected by El Niño than other salmon species, such as Chinook (Pacific Fishery Management Council 2003b).

The Pacific Fishery Management Council and NMFS identified essential fish habitat for salmon in estuaries and marine areas extending from the shoreline to the 200-mile limit of the EEZ and beyond. In freshwater, salmon essential fish habitat includes all lakes, streams, ponds, rivers, wetlands, and other bodies of water that have been historically accessible to salmon (Pacific Fishery Management Council 2006). The Pacific Fishery Management Council may use gear restrictions, time and area closures, and harvest limits to reduce negative impacts on salmon essential fish habitat. Salmon essential fish habitat occurs throughout the year in the project area.

Highly Migratory Species

Highly migratory species include tuna, billfish, and sharks. These species exhibit a wide-ranging distribution throughout the Pacific Ocean and are not typically associated with the specific substrata or benthic habitats (e.g., kelp forests or rocky substrata). Rather, their distribution often reflects large-scale oceanographic features with preferred levels of physical characteristics (for example, temperature, salinity, and oxygen), or concentrations of preferred prey (Pacific Fishery Management Council 2003a).

For a general description of gray whale feeding on pelagic prey, see Section 3.4.3.1.3, Feeding Ecology and Role in the Marine Ecosystem. For a description of variable and dynamic gray whale habitat use and distribution in the project area related to pelagic prey distribution and climatic and

ocean condition variability, see Section 3.4.3.3.1, Summer Range Distribution and Habitat Use, Southern Portion of the Summer Range.

3.3.3.2 Benthic Environment

3.3.3.2.1 Physical Features and Processes

Substrata

Nearshore Habitats

As with the pelagic environment, nearshore benthic habitats are dynamic environments subject to energetic disturbances from climatic, oceanographic, and terrestrial processes. Nearshore habitat characteristics and species composition are strongly influenced by the dominant forms of marine algae, tidal range, depth, and type of substrate (Proctor et al. 1980). The nearshore habitats in the project area are composed of rocky shores, sandy beaches, and gravel beaches (Department of the Navy 2006). These habitats can be divided into several vertical zones: the splash zone, the upper intertidal zone (submerged for a short time and exposed to the widest range of temperatures), the mid-littoral zone (alternately submerged and exposed for moderate periods of time), the swash zone (submerged for approximately 12 hours per day), the low intertidal zone (exposed for brief periods of time during the lowest tides), and the subtidal zone (substrata below the lowest tides that are always submerged). These vertical zones reflect the intensity of the physical forces affecting nearshore habitats and structuring the ecosystems that inhabit them.

Coastal Benthos

The continental shelf off the project area varies from 15 to 40 miles wide, including habitats of hard and soft substrata. Beyond the depths of kelp beds (more than 100 feet), approximately 3 percent of the sea floor consists of hard-bottom substrata (Department of the Navy 2006). Hard-bottom habitats may be composed of bedrock, boulders, cobble, or gravel.

The Columbia River is a major source for sediment for soft-bottom habitats along the Pacific coastline. The sediment is initially deposited near the mouth of the Columbia River. As winter storms pass through the Pacific Northwest much of this sediment is transported northward along the coast resulting in a 30-foot-thick deposit of silt overlying the Washington continental shelf (Hickey and Banas 2003). Offshore soft-bottom habitats are composed primarily of silt and mud with sandy areas occurring closer to the coastline.

Submarine Canyons

The otherwise smooth bathymetry along the project area is broken by two submarine canyons, the Juan de Fuca and Quinault canyons, running perpendicular to the shore (Strickland and Chasan 1989). These habitats are dynamic, highly productive, and complex ecosystems. Submarine canyons facilitate locally increased upwelling, high nutrient availability, and vigorous productivity (Freeland and Denman 1982; Hickey *in press*). Submarine canyons are also sites of accumulation for organic debris from drift macroalgae, surfgrass, and plankton detritus produced in surface waters. The complex habitat structure of submarine canyons (such as vertical cliffs, ledges, talus, cobble and boulder fields, and soft sediments) also provides cover for numerous fish and invertebrate species.

Dynamic Processes and Variability

Nearshore community structure and species composition in rocky tidal and beach habitats are principally determined by the frequency and magnitude of physical disturbances (Sebens 1987), intense intra- and inter-specific competition and predation (Connell 1978; Paine 1969; Robles and Desharnias 2002), and highly variable recruitment dynamics (Gaines and Roughgarden 1985; Menge and Sutherland 1987; Roughgarden et al. 1988). These nearshore habitats and the organisms that inhabit them are subjected to nearly constant and intense physical agitation and disturbance (Proctor et al. 1980; Airamé et al. 2003) from wind, waves, tides, temperature, desiccation, sediments, and sand scouring. Despite some protection from offshore islands, submarine ridges, projecting headlands, and large offshore kelp beds, the coast of the project area is subject to strong wave action even in calm weather.

Soft substrata habitats of the coastal benthos are structured by depth gradients in temperature, disturbance by storms and wave action, and movement and accumulation of sediments (Maragos 2000). Submarine canyons that indent the Washington coastal shelf, such as the Juan de Fuca and Quinault canyons in the project area, facilitate locally increased upwelling and nutrient availability in nearshore areas (Freeland and Denman 1982; Hickey *in press*). Turbidity currents associated with submarine canyons represent episodic disturbance events that serve as major conduits for sediment transport to the deep sea. These turbidity currents erode canyon walls, transport loose sediments and detrital material, and represent significant disturbance events structuring infaunal communities associated with submarine canyons (Vetter and Dayton 1998; Vetter and Dayton 1999).

3.3.3.2.2 Biological Resources

Marine Algae, Marine Plants, and Associated Biota

Surfgrass (*Phyllospadix* spp., and associated macroalgae) and kelp (bull kelp *Nereocystis* sp., giant kelp *Macrocystis* sp., and other brown algae) communities are associated with the rocky nearshore habitats. Surfgrass (*Phyllospadix* spp.) is an aquatic plant species present in rocky subtidal and intertidal habitats with high wave exposure. Surfgrass occurs from the intertidal zone to 23 feet deep (Ramírez-García et al. 2002), exhibits very high rates of production (Proctor et al. 1980), and hosts a diverse community of invertebrates and fishes. Kelp communities are found 6 to 200 feet deep (Rodriguez et al. 2001) and can persist in areas subject to severe wave action and tidal currents. The overlying canopies, understory, turf, and corraline algae layers of kelp forests provide essential refuge, forage, and nursery habitats for associated algal, invertebrate, and fish communities (Proctor et al. 1980; Rodriguez et al. 2001). Kelp forests also provide an important food resource for inhabitants of soft and rocky benthic habitats, submarine canyons, deep channel basins, sandy and gravel beaches, rocky shores, and coastal lagoons (Airamé et al. 2003). Several marine mammal species, including sea otters and gray whales, forage and find refuge from predators in kelp forests (Cummings and Thompson 1971; Deysher et al. 2002; Nerini 1984). Kelp forests exhibit extremely high rates of primary production, growing up to 4 inches per day. Temperature, light, sedimentation, substrate, relief, wave exposure, nutrients, salinity, and biological factors (i.e., grazing, competition with other species) determine the distribution and abundance of kelp (Graham 1997). The highest densities are found on moderately low relief rocky substrata with moderate to low sand coverage (Deysher et al. 2002), while areas with very low relief and abundant sand are less favorable to persistent stands of kelp (Foster and Schiel 1985; Graham 1997). In addition to the primary habitat that kelp forests provide, they also provide secondary habitat for juvenile fishes, invertebrates, and seabirds in the form of drifting rafts of detached kelp.

Infaunal, Benthic, and Epibenthic Organisms

Rocky benthic subtidal habitats support extensive communities of benthic marine algae and invertebrates, as well as demersal invertebrates (e.g., mysiids and euphausiids) living in close association with the sea floor (see previous description of marine algae ecosystems). Sessile benthic invertebrates in these habitats are subject to less severe physical agitation and disturbance than in rocky intertidal habitats. As with intertidal communities, however, intense intra- and inter-

specific competition and predation, along with highly variable recruitment dynamics, are principal forces in structuring the abundance, composition, and variability of these communities.

Soft-bottom subtidal habitats also support a rich diversity of infaunal invertebrates, including amphipod crustaceans, echinoderms, and polychaete worms, as well as highly motile epibenthic invertebrate species (such as dungeness crab). Benthic infauna are organisms that live in the sediments by attaching to the soft substratum, dwelling in tubes, or burrowing through the sediments. Infaunal communities are often used as baselines for ecological assessments because they tend to exhibit more stable species composition and population dynamics than more mobile epifaunal assemblages such as crabs or bottom fish. This apparent stability is, however, subjected to considerable physical disturbance and variability and should not be interpreted to reflect a static environment. Soft-bottom benthic habitats along the Washington coast, including the project area, are productive biological environments influenced by a variety of complex physical processes (Braun 2005). The major short-term processes that affect infaunal communities include tidal-, wind-, and wave-induced turbulence, currents, sedimentation from the Columbia River plume and local rivers, storms, and variability in food availability associated with upwelling and plankton blooms. The infauna that inhabit this environment are adapted to these high-energy environments with high sediment deposition, erosion, and sediment transport. Large storms with large waves, large freshwater outputs from the Columbia River and other rivers, and semi-diurnal tides act to suspend sediments and organic particulates. The organisms that inhabit these constantly shifting substrata tend to be highly motile rapid burrowers, rapid tube builders, or rapid colonizers with regular recruitment. Seasonal and interannual variability in the species composition and abundance of infaunal communities off the Washington coast is considerable, particularly at inshore locations influenced by sediment movement due to winter storms and river outfalls (Richardson et al. 1977). In summary, benthic soft-bottom habitats are subject to frequent high-intensity disturbances and are inhabited by infaunal communities of opportunistic colonizers exhibiting strong seasonal variability and spatial patchiness (Richardson et al. 1977; Oliver et al. 1980; Hancock 1997).

For a general description of gray whale feeding on benthic prey, see Section 3.4.3.1.3, Feeding Ecology and Role in the Marine Ecosystem. For a description of gray whale benthic feeding in the northern portion of the summer range, see Section 3.4.3.3.1, Summer Range Distribution and Habitat Use, Northern Portion of the Summer Range. For a description about gray whale benthic

feeding occurring in the project area, see Section 3.4.3.3.1, Summer Range Distribution and Habitat Use, Southern Portion of the Summer Range.

Groundfish

Benthic habitats along the continental shelf support a large biomass of demersal (bottom-dwelling) groundfishes (Dark and Wilkins 1994). Adult groundfish species (e.g., rockfish, *Sebastes spp*.; sablefish, *Anoplopoma fimbria*; Pacific hake/whiting, *Merluccius productus;* spotted ratfish, *Hydrolagus colliei*; and spiny dogfish, *Squalus acanthius*) typically are associated with hard substrata of offshore reefs, banks, and submarine canyons. As with pelagic species, physical oceanographic processes such as currents, upwelling, the Columbia River plume, fronts, and eddy features influence the distribution and abundance of groundfish species (Doyle 1992; Dower and Perry 2001; Nasby-Lucas et al. 2002; Williams and Ralston 2002; Bosley et al. 2004; Emmett et al. 2004; Emmett et al. 2006). The groundfish community in the Pacific Northwest also exhibits a strong depth gradient in species composition and diversity (Tolimieri and Levin 2006). Many groundfish species produce pelagic larval and juvenile life stages, which generally float or swim near the sea surface and may be associated with floating debris such as kelp rafts. Pelagic larval and juvenile life stages are widely dispersed by storms, upwelling events and ocean currents and have limited associations with specific nearshore or benthic habitats (NOAA 1993). Older life stages, however, exhibit stronger habitat associations based on specific zones, depths, or substrate characteristics. Other groundfish species may exhibit seasonal migrations, resulting in an annual variation in habitat preferences (NMFS 2005a). The distribution, abundance, and recruitment of groundfish species is also strongly affected by climatic/oceanographic variability such as El Niño events. During periods of El Niño there is an overall northward shift of tropical and temperate species (Cross 1987; Cross and Allen 1993). Rockfish are particularly sensitive to El Niño, demonstrating a decline in overall biomass as a result of recruitment failure and reduced growth of adults as poor overall condition in the region becomes evident (Lenarz et al. 1995; Moser et al. 2000).

With respect to conservation status, nine West Coast groundfish species occurring in the project area are designated as overfished under the Magnuson-Stevens Act (NMFS 2005a) (an overfished species is defined as a population below 25 percent of its natural [unfished] population size). These species are darkblotched rockfish (*Sebastes crameri*), bocaccio (*S. paucispinis*), cowcod (*S. levis*), widow rockfish (*S. entomelas*), canary rockfish (*S. pinniger*), yelloweye rockfish (*S.*

ruberrimus), Pacific Ocean perch (*S. alutus*), lingcod (*Ophiodon elongatus*) and Pacific hake/whiting (NMFS 2005a). Lingcod has been rebuilt to above 40 percent of its unfished level (NMFS 2005a). The Pacific Fishery Management Council and NMFS have established the Yelloweye Rockfish Conservation Area in the project area to limit the incidental catch of this overfished species. The following groundfish species are designated as emphasis species (species in need of ongoing conservation efforts and noted for their importance to commercial and recreational fisheries): sablefish, Dover sole (*Microstomus pacificus*), English sole (*Paraphrys vetulus*), Petrale sole (*Eopsetta jordani*), arrowtooth flounder (*Atheresthes stomias*), chilipepper rockfish (*S. goodei*), yellowtail rockfish (*S. flavidus*), black rockfish (*S. melanops*), longspine thornyhead (*Sebastolobus altivelis*), shortspine thornyhead (*S. alascanus*), and cabezon (*Scorpaenichthys marmoratus*) (NMFS 2005a). NMFS also recently listed North American green sturgeon (*Acipenser medirostris*) spawned in the Sacramento River (California) as threatened under the ESA (71 FR 17757, April 7, 2006). Although there are limited data concerning the marine distribution of this species, it too, may occur in the project area.

Essential fish habitat has been designated by the Pacific Fishery Management Council and NMFS for groundfish in the project area. A comprehensive description of essential fish habitat off the coast of Washington is available in the Final Groundfish Essential Fish Habitat EIS (NMFS 2005a). In addition to designating essential fish habitat for groundfish, NMFS also recently identified habitat areas of particular concern. Habitat areas of particular concern include seagrass, canopy kelp, rocky reef, and estuaries along the Pacific coast, including the project area (NOAA 2006).

3.4 Eastern North Pacific Gray Whale

3.4.1 Introduction

Any Makah whale hunt would target ENP gray whales. The status, population structure, distribution, and habitat use of the gray whale are relevant when analyzing the effects of any hunt on the population and on whales that migrate through or stop to feed in the waters off the Washington coast. It is also important to establish information to analyze and understand how an individual gray whale may be affected by a hunt.

3.4.2 Regulatory Overview

The regulatory information presented for the MMPA and WCA in Chapter 1, Section 1.2, Legal Framework, describes the statutory and regulatory processes that apply to the Makah's proposal.

The regulatory information in this section describes substantive requirements of the MMPA and WCA, and as well as their implementing regulations.

3.4.2.1 Marine Mammal Protection Act Management

NMFS has jurisdiction over cetaceans and most other marine mammals (e.g., walruses and sea otters are under the jurisdiction of the FWS) under the MMPA, the primary federal law governing marine mammal conservation and protection in the United States (Section 1.2.3, Marine Mammal Protection Act, for more details about the Act). Because an understanding of NMFS' management scheme for marine mammal populations is key to understanding the agency's management of ENP gray whales, some basic principles of marine mammal management are described below. More information about NMFS' management of marine mammal stocks in general is available in the annual stock assessment reports submitted to Congress, found online at http://www.nmfs.noaa.gov/pr/sars/.

3.4.2.1.1 Defining Marine Mammal Population Parameters

Optimum Sustainable Population — OSP

NMFS (and the FWS for walrus, polar bears, sea otters, and manatees) receives general management direction from Congress through Section 2 of the MMPA. Congress has specified that the primary objective of marine mammal management under the MMPA is to maintain the health and stability of the marine ecosystem and has directed agencies to manage, whenever consistent with this primary objective, in a manner to obtain an optimum sustainable population (OSP) of marine mammal stocks (16 USC 1361(6)). OSP was adapted from the concept of maximum sustained yield used in fisheries management and large whale harvest management in the IWC arena. OSP, rather than maximum sustained yield, is the model used in domestic marine mammal management to reflect the shift in conservation philosophy introduced by the MMPA to ensure that the value of marine mammals should not be measured by economic criteria alone. Congress noted, for instance, that "marine mammals have proven themselves to be resources of great international significance, esthetic and recreational as well as economic" (16 USC 1361(6)).

The OSP is defined statutorily as "the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem in which they form a constituent element" (16 USC 1362(9)). NMFS has further defined OSP in agency implementing regulations as "a population size which falls within a range from the population level of a given species or stock which is the largest

supportable within the ecosystem [known in biological terms as carrying capacity, abbreviated as K] to the population level that results in maximum net productivity level [MNPL]" (50 CFR 216.3). NMFS manages impacts to marine mammal populations according to congressional directives with the goal of maintaining the number of animals within OSP (between K and MNPL). To understand the operating theory of OSP, it is important to understand the biological implications of K and MNPL, the endpoints of the OSP range.

Carrying Capacity - K

K (the upper limit of OSP) can generally be understood as the population level that can be supported in the ecosystem as determined by the key constituent elements, such as food, habitat, temperature, ice cover, etc. As population density increases, birth rates often decrease, and death rates typically increase. K is the point at which these two rates are equal. It is, thus, the number of individuals an environment can support without significant negative impacts and is the largest size of a density-dependent population at which the population maintains equilibrium (population size neither increases nor decreases). For a particular environment, K will vary by species and can change over time due to a variety of factors, including food availability, disease, competition, predation, environmental conditions, and space. It is possible for a species to exceed its K temporarily.

Maximum Net Productivity Level — MNPL

MNPL (the lower limit of OSP) is a population level related to maximum net productivity, a rate of change defined in NMFS regulations as "the greatest net annual increment in population numbers or biomass resulting from additions to the population due to reproduction and/or growth less losses due to natural mortality" (50 CFR 216.3). In practical terms, MNPL is the population level (i.e., number of animals) that will yield the maximum recruitment into a marine mammal population (i.e., births minus deaths). Sometimes MNPL is expressed as a fraction of K.

3.4.2.1.2 Calculating Marine Mammal Population Parameters

Although the OSP concept is understandable from a theoretical or conceptual perspective, it has been difficult to quantify K and MNPL for some species or stocks of marine mammals (Ragen 1995). Although analytical techniques exist (e.g., dynamic response analysis [Goodman 1988]) that allow an assessment of whether a population is within its OSP without the need to estimate K or MNPL, such methods have not been used successfully in a management context and are not addressed further.

NMFS has been able to determine OSP for some species either by measuring pre-exploitation abundance (e.g., Cook Inlet beluga) or by back-calculating pre-exploitation abundance (e.g., eastern tropical Pacific dolphins) and treating it as K (carrying capacity) for the upper limit of OSP. In a logistic model of population growth, MNPL (the lower limit of OSP) is 50 percent of K, but it is generally accepted that because marine mammals are long-lived with slow rates of reproduction, they have MNPL closer to K (Eberhardt and Siniff 1977). In the absence of direct measurements of MNPL, NMFS has chosen the model-derived value of 60 percent of K (45 FR 72178, October 31, 1980). NMFS has also been able to assess OSP for other species such as harbor seals (Jeffries et al. 2003; Brown et al. 2005) by monitoring abundance of the population as it recovers from exploitation to an equilibrium level. By fitting logistic growth models to the abundance estimates through time, both MNPL and K can be measured for the population (Wade and Perryman 2002; Brown et al. 2005).

3.4.2.1.3 Linking Marine Mammal Population Parameters to Removals

To help the agency determine whether particular take levels would maintain the level of any given stock at OSP or not impede the stock's recovery to OSP, NMFS developed a management tool referred to as the potential biological removal (PBR) approach. In 1992, NMFS submitted a legislative proposal to Congress outlining the PBR approach for determining how many individuals could be removed from a population stock of marine mammals while allowing the stock to recover to, or be maintained within, its OSP (NMFS 1992).[1]

3.4.2.1.4 Defining and Calculating PBR

In 1994, Congress amended the MMPA to incorporate a regime to govern the taking of marine mammals incidental to commercial fishing operations (Section 118); many aspects of this

[1] To reduce confusion, it is worth clarifying that NMFS and the IWC use different methods for calculating allowable removals from marine mammal populations. NMFS operates under the protection and conservation purposes and policies of the MMPA by applying the PBR approach to the MMPA's OSP model, as described above. The IWC operates under the ICRW, which historically had a harvest focus. Therefore, the IWC calculates allowable removals or catch limits by focusing on sustainable yield under the maximum sustainable yield model. As described in Section 1.2.4.1.3, IWC Aboriginal Subsistence Whaling, the IWC acts on the advice of the Scientific Committee to set catch limits for large cetacean stocks based on the maximum sustainable yield model. The Scientific Committee advises the IWC on a minimum stock level for each stock, below which whales are not taken, and on a rate of increase towards the maximum sustainable yield level for each stock (footnote to IWC Schedule, Paragraph 13(a)(2)). The ENP gray whale stock is at or above maximum sustainable yield level, so aboriginal subsistence catches are allowed as long as they do not exceed 90 percent of that maximum sustained yield (Paragraph 13(a)(1)).

provision of the statute were based on the legislative proposal NMFS prepared and submitted to Congress in 1992 (NMFS 1992). The concept of PBR was among the aspects of NMFS' proposal included in the 1994 MMPA amendments. Under 16 USC 1362(20), PBR level is defined as the "maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population."

The MMPA (16 USC 1362(20) also prescribes a formula for calculating PBR, which is the product of three factors:

$$PBR = N_{min} * 0.5R_{max} * F_r$$

- N_{min} is the minimum population estimate of the stock.
- $0.5R_{max}$ is one-half the maximum theoretical or estimated net productivity rate of the stock at a small population size.
- F_r is a recovery factor of between 0.1 and 1.0.

As long as the total number of animals removed from the population due to human sources is no more than the calculated PBR of an affected stock of marine mammals, then such taking (by removal) will not prohibit the stock from recovering to or being maintained within its OSP.

3.4.2.1.5 Implementation of PBR Approach

Before its initial implementation of the PBR approach (Barlow et al. 1995), NMFS selected default values for the parameters of the PBR formula that would meet specific performance criteria and ran simulations to test the efficacy of maintaining OSP or allowing recovery to OSP. In these performance trials, numerous individuals from a hypothetical marine mammal stock were removed from the population at levels up to the calculated PBR each year. One of the following two conditions was satisfied for at least 95 percent of simulation trials: (1) populations at the MNPL (i.e., the low end of the OSP range) would remain at that level or above it after 20 years; and (2) populations below OSP (i.e., depleted populations at 30 percent of K) would recover to OSP within 100 years. In their conclusions, Barlow et al. (1995) noted that the PBR approach, as recommended and tested, would satisfy the objectives of the MMPA and would facilitate the Section 2 mandate to develop marine mammal stocks to the greatest extent feasible. In other words, for marine mammal stocks at OSP, the PBR approach would not cause them to fall below OSP, and for marine mammal stocks below OSP, the PBR approach would not prevent them from achieving OSP. Wade (1998) reported on more extensive simulation trials related to the

implementation of NMFS' PBR approach and confirmed the major conclusions related to the performance of PBR that were included in Barlow et al. (1995).

Wade and Angliss (1997) discussed the review of, and recommendations for, minor revisions to NMFS' initial PBR approach. This report, which summarized the results of a NMFS-convened workshop, indicated that the initial guidelines were adequate in most areas. Workshop participants recommended some minor revisions to the use of abundance estimates in calculating PBR. The most notable recommendation is that PBR levels should be reported as unknown when the supporting abundance estimate for the affected marine mammal stock is at least 8 years old, unless there is compelling evidence that the stock has not declined since the last abundance estimate. NMFS adopted and implemented this recommendation. In 2003, NMFS reviewed its PBR guidelines again and, after public review and comment, made no substantive changes to PBR calculations when the final guidelines were completed in 2005 (70 FR 35397, June 20, 2005).

3.4.2.1.6 Take Permits

Under Section 104(a) (16 USC 1374(a)) NMFS may issue permits for the taking or importation of a marine mammal. The permit must be consistent with applicable regulations and must specify the number of animals authorized to be taken; the location and manner (which NMFS must determine to be humane) in which they may be taken; the period during which the permit is valid; and other terms or conditions the agency deems appropriate (16 USC 1374(b)). If the agency waives the take moratorium, it is to issue regulations deemed necessary and appropriate "to insure such taking will not be to the disadvantage of those species and population stocks and will be consistent with the purposes and policies" of the MMPA (16 USC 1373(a)). The statute identifies certain factors the agency must consider fully in prescribing regulations governing the taking, including the effect of the regulation on existing and future levels of marine mammal species and population stocks; existing international treaty and agreement obligations of the United States; the marine ecosystem and related environmental considerations; the conservation, development, and utilization of fishery resources; and the economic and technological feasibility of implementation (16 USC 1373(b)).

3.4.2.2 Whaling Convention Act

3.4.2.2.1 Whaling License

Under the WCA (16 USC 916d) and NMFS regulations (50 CFR 230.3(b)), no person may engage in whaling without a license. NMFS by regulation has issued a license "to whaling captains identified by the relevant Native American whaling organization" (50 CFR 230.5(a)). NMFS may suspend the license of any captain who fails to comply with NMFS' regulations. NMFS' regulations further specify that any aboriginal subsistence whaling quota shall be allocated to each whaling village or captain by the appropriate Native American whaling organization. At least annually, NMFS is to publish aboriginal subsistence whaling quotas and any restrictions on subsistence whaling in the Federal Register. When NMFS published aboriginal subsistence whaling quotas for the use of the Makah Tribe in the past, it executed agreements with the Makah Tribal Council that described the way NMFS recognized the Tribe as a Native American whaling organization (see, for example, 63 FR 16701, April 6, 1998).

3.4.2.2.2 Equipment, Crew, Supplies, and Training

WCA Section 916d(d) requires an applicant for a whaling license to furnish evidence or an affidavit that the whaling vessel is adequately equipped and competently manned to engage in whaling in accordance with the provisions of the ICRW, the regulations of the IWC and NMFS' regulations. NMFS' regulations regarding aboriginal subsistence whaling prohibit whaling without adequate crew, supplies, or equipment (50 CFR 230.4(d)). In the past, when NMFS published aboriginal subsistence whaling quotas for the use of the Makah Tribe, it executed agreements with the Makah Tribal Council that specified the details regarding the supplies, equipment, crew, and training.

3.4.2.2.3 Wasteful Manner Restrictions

WCA regulations prohibit whaling captains from engaging in whaling in a wasteful manner (50 CFR 230.4(k)). Wasteful manner means "a method of whaling that is not likely to result in the landing of a struck whale or that does not include all reasonable efforts to retrieve the whale" (50 CFR 230.2). Related to reasonable efforts to retrieve any whale, WCA regulations also require whaling captains to use harpoons, lances, or explosive darts that bear a permanent distinctive mark identifying the whaling captain (50 CFR 230.4(j)). The mark allows struck and lost whales that wash ashore, or are found later, to be identified and reported as struck and lost whales. WCA regulations also prohibit whaling for any calf or parent accompanied by a calf (50 CFR 230.4(c)).

3.4.2.2.4 Recording and Reporting

WCA regulations require the Native American whaling organization to monitor the hunt, keep a tally of the number of whales struck and landed, and close the season when the quota is reached (50 CFR 230.7(b)). Whaling captains must provide oral or written reports on whaling activities to the Native American whaling organization, including, but not limited to, striking, attempted striking, or landing of a whale, and (where possible) specimens from a landed whale (50 CFR 230.8(b)). The report is to include information on the number, dates, and locations of each strike, attempted strike, or landing; the length and sex of the whale landed; and an explanation of the circumstances involving any whale struck and not landed. NMFS is also authorized to provide technical assistance to facilitate prompt reporting and collection of specimens from landed whales, including, but not limited to, ovaries, ear plugs, and baleen plates (50 CFR 230.8(b)). Following the 1999 and 2000 hunts, the NMFS observers to the hunt provided their own reports to NMFS (Gosho 1999; Gearin and Gosho 2000). The Makah Tribe and NMFS also published a joint report for the 1999 hunt.

3.4.3 Existing Conditions

3.4.3.1 General Life History and Biology

3.4.3.1.1 Identifying Physical Characteristics

Adult gray whales are 36 to 50 feet long and weigh between 16 and 45 tons; females are larger than males. They have two to five deep longitudinal creases on their throats, and their heads appear narrowly triangular when viewed from above; there is no head ridge (Leatherwood et al. 1988). Ventral blubber can be 3 inches (7 cm) thick (Gulland et al. 2005). Migrating gray whales breathe at regular intervals, generally blowing three to five times at intervals of 30 to 50 seconds, then lifting their flukes and submerging for 3 to 5 minutes (Leatherwood et al. 1988). Gray whales make shallow dives of 50 to 165 feet, but they may dive as deep as 390 feet to feed.

3.4.3.1.2 Global Distribution and Population Structure and Status

Historically, gray whales occurred in both the North Pacific and North Atlantic Oceans (Fraser 1970; Mead and Mitchell 1984), but are currently found only in the North Pacific Ocean (Rice et al. 1984). At one time, the whales may have accessed both the Pacific and Atlantic Oceans by swimming through migratory corridors in the Arctic (Gilmore 1978), but the distribution of the species probably changed due to periodic closures of the Bering Sea during ice ages (Swartz et al. 2006). Glaciation dropped sea levels and exposed underlying continental shelf

regions, including the Bering Isthmus, which effectively blocked access to the Arctic (Berta and Sumich 1999). Gray whales disappeared in the North Atlantic by the end of the seventeenth century (Mead and Mitchell 1984).

Management authorities, including the International Whaling Commission (IWC) and NMFS, have identified two management units for this species based on the best scientific information available: a western North Pacific population and an eastern North Pacific population (Rugh et al. 1999; Swartz et al. 2006). The two populations are recognized as separate under the World Conservation Union (IUCN) International Convention for the Conservation of Nature and Natural Resources (Baillie et al. 2004; Swartz et al. 2006). The western North Pacific gray whale population (also known as the Korean or Korean-Okhotsk population) migrates annually along the east coast of Asia. The eastern North Pacific (ENP) gray whale population (also known as the California-Chukchi population) migrates annually along the west coast of North America, generally between a summer range as far north as the Bering, Chukchi, and Beaufort Seas and a winter range as far south as the Baja Peninsula in northwestern Mexico (Rice et al. 1984; Swartz et al. 2006) (Figure 3-3). Available data indicate that management at this population level is appropriate for three reasons:

1. **Geographic Separation** – the North Pacific populations of gray whales are geographically separated. They occupy different coastal migratory corridors and feeding and breeding areas, with an apparent gap in distribution along the eastern shore of the Kamchatka Peninsula between the Okhotsk and Bering Seas (IWC 1993; Swartz et al. 2006);

2. **Genetic Differentiation** — the North Pacific populations of gray whales are significantly genetically distinct, based on analysis of mitochondrial deoxyribonucleic acid (mtDNA, as inherited through the mother's lineage) (LeDuc et al. 2002; Lang et al. 2004);

3. **Demographic Independence** — the North Pacific populations of gray whales have exhibited different rates of recovery and levels of abundance following overexploitation due to commercial harvest (Rugh et al. 1999; Swartz et al. 2000; Swartz et al. 2006).

The western North Pacific population was listed as critically endangered by the IUCN in 2000 (Hilton-Taylor 2000; Baillie et al. 2004) and remains critically depleted. It is estimated to contain 100 or fewer whales (Wade et al. 2003; Weller et al. 2005). By contrast, the ENP population is thought to have recovered to pre-exploitation numbers, and NMFS removed it from the

endangered species list in 1994 (59 FR 21094, June 16, 1994) after three decades of research supported the conclusion that it had recovered (Buckland and Breiwick 2002). Recently, Alter et al. (2007) used a genetic approach to estimate prewhaling abundance of gray whales and reported DNA variability indicative of an ENP gray whale population of approximately two to four times more numerous than today's average census size (the ENP gray whale population was last estimated to be 20,110 whales (Rugh et al. 2008)). Alter et al. (2007) note that their estimate likely measures both the eastern and western gray whale stocks together, and that an important question is whether carrying capacity has declined over time. If it has, then gray whales may be reduced from historical numbers but may have reached a new, lower carrying capacity today.

Figure 3-3. Approximate Rangewide Distribution of the ENP Gray Whale Population

The lower range of the confidence interval reported in Alter et al. (2007) is consistent with a historic abundance of about 30,000 whales each for the western and eastern North Pacific stocks of gray whales. An abundance of 30,000 gray whales in the Eastern North Pacific stock is within the confidence limits for estimates of carrying capacity reported by Wade (2002). Some scientists (e.g., Palsboll et al. 2008) have questioned the results and conclusions of Alter et al. (2007). NMFS intends to address the findings of Alter et al. (2007) and other researchers as part of the next update of the stock assessment report for the ENP gray whale stock.

For the remainder of this chapter, all references to the gray whale will be to the ENP population only.

3.4.3.1.3 Feeding Ecology and Role in the Marine Ecosystem

Gray whales use various feeding techniques, including (1) suction feeding, also called benthic feeding or bottom feeding, which allows them to feed on crustaceans that live burrowed in (infauna) and just above (epifauna) the sea floor; and (2) engulfing or skimming prey in the water column and on the sea surface. This broad foraging capability allows gray whales to feed on a wide variety of prey throughout their range (Nerini 1984; Darling et al. 1998; Dunham and Duffus 2001; Moore et al. 2003; Moore et al. 2007). This capability may account for the gray whale's more rapid recovery from commercial whaling when compared with other large whale species (Nerini 1984; Moore et al. 2001).

Gray whales regularly consume benthic prey (Nemoto 1970; Nerini 1984), often creating furrows or pits (Johnson and Nelson 1984; Kvitek and Oliver 1986). Gray whales display an adaptation to bottom feeding because their baleen plates are thicker and the hairs are coarser sturdy than those of other whales. This allows them to excavate coarse bottom sediments on a regular basis (Nemoto 1959; Nerini 1984). Nerini (1984) listed prey of more than 19 genera from gray whale stomachs, including a wide variety of benthic and epibenthic invertebrates, such as amphipods, decapods, molluscs, polychaete worms, and sponges. Moore et al. (2007) also recently documented tens to hundreds of gray whales feeding off Kodiak Island, primarily on epibenthic marine crustaceans commonly referred to as hooded shrimp.

Excavation of bottom sediments by feeding gray whales may play a role in maintaining the benthic habitat in some areas, though its relative importance is not clear. Some investigators hypothesize that gray whale benthic feeding may help maintain the substrate (Johnson and Nelson 1984; Oliver and Slattery 1985), or otherwise have an important influence on the benthic community (Nelson and Johnson 1987; Grebmeier et al. 1989). Excavated sites also trap woody

debris, which affects benthic productivity (Oliver and Slattery 1985). Gray whale excavation has been proposed as a major source of disturbance and part of a cycle of exploitation, recolonization, succession, and maturing of the prey community (Nerini 1984; Oliver et al. 1984; Oliver and Slattery 1985). Conversely, some investigators have proposed that the growing gray whale population has reached carrying capacity and that the population's overexploitation of benthic amphipods in the Bering Sea may have led to a decrease in amphipod abundance during a documented period from 1986 to 1988 (Highsmith and Coyle 1992). It has further been suggested that gray whale foraging can lead to permanent localized loss of amphipod or other prey communities, forcing whales to forage elsewhere (Highsmith and Coyle 1992; Weitkamp et al. 1992). In the project area, gray whales may be feeding on both pelagic and benthic prey. It appears that benthic communities in the project area are influenced primarily by large-scale oceanographic and climatic processes (Section 3.3.3.2.1, Physical Features and Processes).

Gray whales excavating the benthos may also make food available for surface-feeding seabirds. As the whales stir up the benthos, particularly in shallow waters, feed rises to the surface. Observations in the Bering Sea suggested this association (e.g., Grebmeier and Harrison 1992), but no similar studies have been conducted in the project area. When gray whales die, decomposing whale carcasses also deliver large pulses of organic material to the seafloor. This material may serve as islands of habitat for unique assemblages of deep-sea macrofauna (Dahlgren et al. 2004; Goffredi et al. 2004).

Although gray whales are consistently characterized as benthic feeders in the literature, they also feed on pelagic prey, including mysid crustaceans, crab larvae, herring eggs and larvae, ghost shrimp, and eupahusiids (Murison et al. 1984; Nerini 1984; Oliver et al. 1984; Weitkamp et al. 1992; Duffus 1996; Darling et al. 1998; Benson et al. 2002; Dunham and Duffus 2002; Bluhm et al. *in revision*). They feed in the water column by making short dives and random movements in kelp beds and within the surf zone of rock and islets (Murison et al. 1984; Nerini 1984; Darling 1998). When they skim feed on the sea surface, they move along the surface, biting down on plankton streams along the tide line (Darling 1998).

Over the years, researchers have observed gray whales aggregating in particular areas to feed where prey densities are high, especially in areas of benthic prey densities in the northern seas (e.g., Berzin 1984; Yablokov and Bogoslovskaya 1984; Clarke and Moore 2002; Moore et al. 2000; Moore et al. 2003; Highsmith et al. 2007). The term 'feeding aggregation' has been used in scientific literature to describe these concentrations of feeding whales (e.g., Berzin

1984; Calambokidis et al. 2002). Areas where whales congregate to feed on a regular basis have been referred to as 'feeding grounds' or 'feeding areas' (e.g., Berzin 1984; Calambokidis et al. 2002; Moore et al. 2003; Calambokidis et al. 2004a), though the whales also feed continuously along their migration route. Some scientists have proposed that whales primarily feed on benthic prey in higher latitudes and switch to pelagic prey in lower latitudes (Nerini 1984), or that prey are in primary, secondary, or tertiary feeding grounds with pelagic prey occurring further south in the range (Kim and Oliver 1989). Others have proposed that whales select pelagic prey first when available because it is easier to obtain than benthic prey (Dunham and Duffus 2001). Dunham and Duffus (2001) hypothesize that pelagic prey disperses in the water column, making a relatively easy filter-feeding target, and that the distribution of pelagic prey is not as patchy or unpredictable as benthic prey. Rather than exhibiting strong regional or prey-type preferences, whales probably exhibit highly plastic and opportunistic foraging behavior using a variety of prey resources, both benthic and pelagic, within a given feeding area (Darling et al. 1998). After 26 years of observations off the southwest coast of Vancouver Island, some researchers noted that whales could be observed feeding in discrete pockets of habitat over short time frames, depending on prey availability. Over longer time frames, however, virtually all of the southwest coast study area was used by feeding gray whales (Darling et al. 1998; Dunham and Duffus 2001). Darling et al. (1998) proposed that gray whales are attuned to natural patterns of abundance and absence occurring within a prey assemblage and that different prey species play equal roles over a season or several years.

Because both feeding aggregations (the whales) and feeding areas (the prey) are dynamic, with both small- and large-scale changes over time and space, the following discussion examines the entire range in which gray whales feed. As described below in Section 3.4.3.3, Distribution and Habitat Use, gray whales change location and habitat to exploit the optimum prey species at any one time, based on abundance, density, size, caloric content, and predation pressure. Such factors may vary by season and year, depending on environmental variability and the population dynamics of prey (Darling et al. 1998; Clarke and Moore 2002; Moore et al. 2007).

3.4.3.1.4 Seasonal Migrations

Seasonally predictable sources of food broadly shaped gray whale life history into two major periods: summers, when whales feed in higher latitudes with abundant food and minimal sea ice, and winters, when whales migrate to lower latitudes to escape sea ice and inclement weather and to calve in warmer waters (Swartz 1986; Swartz et al. 2006). Long-distance migrations of gray whales thus evolved in the spring and the fall/winter, primarily as an evolutionary response to the

seasonal production of prey species in the shallow waters of polar regions (Lipps and Mitchell 1976; Swartz et al. 2006).

Gray whales generally migrate seasonally along the coast of North America between a summer range as far north as the Chukchi and Beaufort Seas and a winter range as far south as the Baja California Peninsula and Gulf of California in northwestern Mexico (Rice et al. 1984; Urbán-Ramírez et al. 2003) (Figure 3-3). The general characteristics, timing, and migratory distance relative to shore for fall/winter southward and spring northward migrations are described more specifically below, while shorter- and longer-term aspects of distribution and habitat use are discussed later in Section 3.4.3.3, Distribution and Habitat Use.

Fall/Winter – Characteristics and Timing of the Southward Migration

The onset of the southward migration is difficult to define (Rugh et al. 2001) and is typically associated with the primary breeding period (Section 3.4.3.1.5, Reproductive Physiology and Calf Birth, Growth, and Development, for more detail about breeding activities). Timing may be influenced by several environmental variables, including the extent of ice coverage, availability of food resources, and photoperiod (Rugh et al. 2001; Clarke and Moore 2002; Swartz et al. 2006). It is also related to how widely the whales are distributed for foraging (Rugh et al. 2001). Most whales migrate out of northern seas sometime around mid-October to November, but some have been seen swimming south near Point Barrow as early as mid-August, and some have been seen along the Chukotkan Peninsula as late as mid-December (Rugh et al. 2001).The southward migration is generally grouped into two phases by age, sex, and reproductive status (Rice and Wolman 1971). The first migrant phase consists of near-term pregnant females, followed by non-pregnant females and mature males. The second migrant phase consists of immature whales of both sexes (Swartz et al. 2000; Swartz et al 2006). Poor weather conditions and widely scattered offshore distribution of gray whales make it difficult to survey whales migrating through the area (Green et al. 1995; Shelden et al. 2000; Rugh et al. 2001), but some studies are available. Shelden et al. (2000) reported observations of gray whales off the coast of Washington and in the Strait of Juan de Fuca near Port Angeles in early to mid-November. Observational studies also support the presence of southbound gray whales off the coast of Washington in December (Pike 1962; Darling 1984; Shelden et al. 2000). Using data from surveys at other locations, along with measured travel speeds of migrating gray whales, Rugh et al. (2001) calculated January 5 as the peak of the southward migration past Tatoosh Island.

The most routine observations of the gray whale migration have been in California (Rugh et al. 2001). Data from shore-based stations have shown a one-week shift in timing of median dates of southbound migrants (from January 8 to January 16) after 1980. This might have been due to an oceanographic regime shift in the northern portion of the summer range. The shift caused extreme ice retreats and may have expanded the distribution of gray whales on the feeding grounds and increased the distance of the southward migration (Miller et al. 1994; Hare and Mantua 2000; Rugh et al. 2001; Moore et al. 2003; Shelden et al. 2004; Moore 2005). Concurrent with these findings, southbound calf sightings have increased near San Diego (southern California) and Carmel (central California) since 1980; the one-week delay in the southward migration has meant that calving has occurred farther north than the Baja lagoons during the southward migration (Shelden et al. 2004). Gray whales generally reach their wintering grounds starting in late December or early January and reach maximum densities in February.

Spring – Characteristics and Timing of the Northward Migration

In mid-February, as the southward migration comes to an end in California and Mexico, the northward migration begins. This overlap suggests that not all of the gray whale population winters near the Baja California Peninsula. Some whales may only go as far south as the coastal waters of California before they turn around again to head north (Herzig and Mate 1984; Swartz 1986; Swartz et al. 2006). The northward migration to summer feeding areas occurs in two generally grouped phases according to age, sex, and reproductive condition (Poole 1984; Swartz 1986; Swartz et al. 2006). The first migrating phase consists of newly pregnant females, followed 2 weeks later by adult males and non-pregnant females, then by immature whales of both sexes another week later (Swartz et al. 2006). In mid and late February, as the first phase of the migration is underway, mothers with newborn calves move from interior lagoons to lagoon inlets and coastal waters previously occupied by the single whales (Swartz et al. 2006). These mother and calf pairs comprise the second migrating phase of whales and are the last to leave wintering areas, departing between late March and May and generally arriving in their summer feeding range from May to June (Swartz et al. 2000; Swartz et al. 2006).

Poole (1984) reported the first phase of northbound migrants off the coast of central California from early February to early April. Gilmore (1960) reported similar dates (mid-February, peaking in March and April, and tapering off in early May) past San Diego. Herzig and Mate (1984) reported the first phase of northbound migrants passing through the waters off Oregon in mid-February through April, peaking in mid-March. A study conducted at Unimak Pass, Alaska,

reported a peak passage of northbound phase-one migrants in the last week of April, indicating an approximate lag of 4 to 5 weeks between Oregon and Alaska (Hessing 1981; Herzig and Mate 1984). The cow-calf migrants in the second migrating phase travel more slowly than the whales in the first migrating phase to accommodate nursing and calves (NMFS 2001a), and they have been reported to follow the first phase by 7 to 9 weeks (Herzig and Mate 1984). The predominantly cow-calf pair migrants in the second phase of the northward migration have been sighted passing through the waters off central California from early April to mid-May (Poole 1984) and passing by Oregon from late April to May, peaking in mid-May (Herzig and Mate 1984). Hessing (1981) observed cow and calf pairs passing Unimak Pass, Alaska, from May through mid-June, peaking on June 4. Taking both migration phases into account, northbound whales of all ages and both sexes are present off the Washington coast from late February through June. There are no direct observations that establish the timing of either phase of the northward gray whale migration through the project area, nor are there any published estimates based on observations from other areas (as Rugh et al. [2001] calculated for the southward migration). Given the available observational data, it is reasonable to estimate that migrants in the first phase of the northward migration would be in the project area from March through early May, and migrants in the second phase would be in the project area from roughly early May until June.

Migratory Distribution Relative to Shore (Location and Width of the Migratory Corridor)

The migratory distribution of gray whales relative to shore (i.e., location, width, and extent of the migratory corridor) varies based on environmental conditions (such as bottom topography, climate, and water depth), migration season and phase, and use of the migratory corridor (such as feeding, breeding, or migrating). Generally, gray whales migrate closer to shore where the continental shelf is narrow, such as near Granite Canyon, California, and distribute farther offshore where the continental shelf is broader, such as near the Channel Islands, California (Shelden 2007). There is also evidence that northbound whales travel closer to shore during spring than do southbound whales in fall and winter (Herzig and Mate 1984; Green et al. 1995).

Off the coast of Oregon, where the continental shelf is relatively narrow, Herzig and Mate (1984) systematically documented the offshore distribution of both northward and southward migrations, including both phases of migrants, from November to May, 1978 to 1981. They determined that more than 50 percent of all whales in the first phase of the southward and northward migration passed between 1 and 2 miles (1.6 km and 3.2 km) from shore, 131 to 197 feet (40 to 60 meters) deep. They also estimated that 90 percent of the second phase of northbound migrants, consisting

predominantly of cow-calf pairs, passed less than 2,625 feet (800 m) from shore. Herzig and Mate (1984) noted that, as the northward migration progressed, pod size decreased and whales moved progressively closer to shore, traveling within 1 mile (1.6 km) from shore.

These nearshore patterns of migration for northbound whales are consistent with observations made off the coast of California from 1980 to 1982 (Poole 1984). Poole (1984) determined that the first phase of northbound migrants moved slightly farther offshore than the second phase; the first phase traveled within a straight-line corridor from one major point of land to another to avoid bights in the coastline, while the second phase (consisting of 90 percent cow-calf pairs) hugged the contours of the coastline. Sixty percent of the first phase of northbound migrants passed between 2 miles and 0.5 mile from shore (between 3.2 km and 800 m), 20 percent between 0.5 mile and 0.1 mile from shore (between 800 m and 200 m), and 13 percent within 0.1 mile (200 m) of shore. Ninety-nine percent of the second phase of northbound migrants passed within 0.1 mile of shore in 1980, and 96 percent passed within that distance in 1981. Poole (1984) and Braham (1984) noted potential biological advantages of nearshore migration, including the availability of productive food sources in shallow nearshore waters (such as eel grass meadows and swarms of mysid shrimp in kelp beds) and protective cover from predators provided by nearshore rocks, bottom topography, and kelp beds.

Off the coast of Washington, Pike (1962) used logbooks from the M/V *Pacific Ocean*, a fur seal research vessel operating during March to May of 1958 to 1960, to observe gray whale northward migrations. Pike (1962) reported that most whales probably passed within 1.2 miles (1.9 km) of the coast during the spring northward migrations, similar to the results of Herzig and Mate (1984) and Poole (1984). Pike (1962) also described northbound whales farther offshore. Logbooks from the Umatilla Lightship, stationed 5.2 miles (8.4 km) from shore south of Cape Flattery at Umatilla Reef, reported many gray whales passing close to the lightship from March to May. Whales engaged in various behaviors such as playing, mating, circling, rolling, or feeding, often remaining in the area for up to 4 hours. Pike (1962) also noted sightings 5.8 miles (9.3 km) off Cape Flattery, and a sighting of two adults and one calf as far as 23 miles (37 km) off Cape Flattery. These sightings farther offshore are consistent with Green et al. (1995), who documented phase-one northbound migrants off the coast of Washington from March 11 through 16, 1990, as far out as 12.4 miles (20 km), and averaging a distance of 7.3 miles (11.8 km).

For the fall/winter southward migration, Herzig and Mate (1984) reported the farthest extent of southbound migrants off the coast of Oregon as 12.4 miles from shore at less than 90 meters deep

(Herzig and Mate 1984). When Mate and Poff (1999) repeated the Oregon coast surveys of Herzig and Mate (1984) in 1999, they noted that whales were distributed farther offshore than described in the prior studies. Whereas Herzig and Mate (1984) had reported that 50 percent of both northbound and southbound migrants passed within 1 and 2 miles from shore, Mate and Poff (1999) estimated that 60 percent of the southbound whales were 5 miles or more offshore and 20 percent of the whales were within 3 miles of shore. These results are consistent with Green et al. (1995), who documented two groups of whales at 14.3 miles (23 km) as the furthest southbound migrants sighted off the coast of Oregon during aerial surveys conducted from January 3 to 12, 1990, and five groups of whales at 26.7 miles (43 km) as the furthest southbound migrants off the coast of Washington.

Green et al. (1995) noted a significant latitudinal variation between Oregon and Washington for offshore distances of both northbound phase-one and southbound migrations, with the variation more pronounced during the southward migration. They reported that southbound migrants averaged 15.7 miles (25.2 km) from shore off Washington and 7.4 miles (11.9 km) from shore off Oregon. Green et al. (1995) hypothesized that the difference between offshore distances for north and southbound whales either supports the occurrence of a single, very broad migratory corridor, or the occurrence of alternate offshore routes. Like Poole (1984) had noted for the California Bight area, Green et al. (1995) concluded that some portions of the ENP gray whale population may take a more direct route between Washington and the central coast of Vancouver, rather than following the longer coastal route past Cape Flattery. Shelden et al. (2000) neither confirmed nor rejected that hypothesis, but noted that distance offshore may not be a function of migration alone, since gray whales have been observed 31.1 miles (50 km) off the Vancouver Island coast and 28 to 56 miles (45 to 90 km) off the Washington coast during summer months when the whales are not migrating.

3.4.3.1.5 Reproductive Physiology and Calf Birth, Growth, and Development

Female gray whales become sexually mature and begin giving birth between five and 11 years of age (mean eight years; Rice and Wolman 1971). The sexual cycle in female gray whales lasts approximately two years and includes copulation, pregnancy, lactation, and a resting period after reproduction (Yablokov and Bugoslovskaya 1984). A calf is, therefore, produced every other year, a cycle that is tied to annual migrations and environmental conditions favorable for the early development of calves (Swartz 1986; Swartz et al. 2006). Both male and female gray whales are promiscuous breeders and copulate repeatedly with more than one mate (Jones and Swartz 1984).

Mating behavior is observed during most seasons (Gilmore 1960; Rice and Wolman 1971; Jones and Swartz 1984; Swartz 1986; Berta and Sumich 1999).

Female gray whales come into oestrus primarily during a three-week period from late November to early December, at the onset of, and during, the southward migration to wintering grounds from summer feeding areas (Rice and Wolman 1971; Shelden et al. 2004). At this time, whales congregate in nearshore areas of the summer feeding range at or near the top of the migratory corridor, possibly to find mates (Swartz et al. 2006). The mean conception date is approximately December 5 (Rice and Wolman 1971). Mating occurs throughout the southward migration in the migratory corridor. Females that have not successfully bred may enter a second oestrus cycle within 40 days (Rice and Wolman 1971), such that a few females may breed as late as the end of January while present on the winter grounds (Jones and Swartz 1984). Oestrus females and mature males in the second breeding cycle have been observed in Baja lagoons at highest densities near lagoon inlets and in adjacent coastal waters (Swartz et al. 2006). The gestation period lasts approximately 13.5 months (or approximately 418 days) (Rice et al. 1984), so newly pregnant females can calve about a year later.

Calves are born in the winter. Some gray whales calve in the shallow, protected Baja lagoons (often referred to in scientific literature as birthing lagoons, calving lagoons, or breeding lagoons), starting around December 26 and ending approximately at the beginning of March (Swartz and Jones 1983; Sánchez-Pacheco 1998), with a median birth date around January 27 (Rice and Wolman 1971). Since the late 1970s and early 1980s, calf sightings have increased near San Diego (southern California) and Carmel (Shelden et al. 2004). Scientists currently believe that perhaps one-quarter to one-half of the calves are born north of Carmel (well north of the Baja lagoons) during the southward migration (Shelden et al. 2004). Shelden et al. (2004) propose that some mothers that reach parturition along the southward migration may winter with their calves in the Southern California Bight, near the Channel Islands, until the calves are large enough to return north.

Calves are approximately 15 feet long and weigh 1,000 pounds at birth (Rice 1986). The sex ratio of calves is 1:1 for the ENP gray whale, but it is closer to 68 percent males and 32 percent for western Pacific gray whales (Rice and Wolman 1971; Jones and Swartz 1984; Weller et al. 2005). The mothers' rich milk is more than 50 percent fat and nourishes the calves for several weeks while they prepare for the long northward migration to summer feeding areas. Calves grow rapidly and stay with their mothers for 6 to 7 months; they are weaned in August and become

independent while in the summer feeding areas (Rice and Wolman 1971; Swartz et al. 2006). Gray whale calves are approximately 28 to 30 feet long before migrating southward (Rice 1986).

3.4.3.1.6 Natural Mortality

Sources of natural mortality for gray whales include predation, disease, entrapment in ice (IWC 2003), and starvation. Killer whales are the primary natural predator of gray whales. There are many anecdotal reports of killer whale interactions with gray whales, but it is difficult to quantify the proportion of the gray whale stock killed or approached by killer whales each year (Rice and Wolman 1971; Fay et al. 1978; Jones and Swartz 1984; Poole 1984; Goley and Straley 1994; George and Suydam 1998). Predation is by transient (mammal-eating) killer whales, and studies suggest that gray whale calves may be particularly vulnerable during their northward (spring) migration (Ternullo and Black 2002). The frequency of tooth scars on gray whale carcasses indicates that killer whale attacks often are not fatal (56 FR 58872, November 22, 1991). Other predators are sharks, including the great white shark (*Carcharodon carcharias*) and tiger shark (*Galaeocerdo cuvier*) off California and Mexico (Jones and Swartz 2002).

3.4.3.2 Historic Status of the Gray Whale Population

3.4.3.2.1 Estimates of Historic Abundance

Estimates of ENP gray whale population size (i.e., abundance) before commercial exploitation vary. Reilly (1981) estimated that there may have been 24,000 gray whales before 1846. Henderson (1984) estimated that the original population was between 15,000 and 20,000 whales. The carrying capacity of the gray whale population was recently estimated to be 23,686 whales (standard error [SE] equals 1,788)(Rugh et al. 2008). The standard error is the measure of certainty (precision) for the estimate of population size, and it is used to construct a confidence interval around the estimate; for further discussion of population estimates and confidence intervals, see Section 3.4.3.4.1, Abundance Data. Scammon (1874) proposed that the population numbered about 30,000 whales from 1853 to 1856. From 1845 to about 1900, American whalers took gray whales from the winter grounds in Baja to the summer feeding areas in the subarctic, removing approximately 11,300 whales from the population between 1845 and 1874 (Scammon 1874; Henderson 1984). Hunts in and near the lagoons greatly reduced the reproductive capacity of the population by killing the females with calves (Swartz et al. 2006). From approximately 1914 to 1946, modern industrial whaling by the United States, Japan, Norway, and the Soviet Union in the North Pacific took an estimated 940 gray whales in all seasons (Reeves 1984).

More recently, Alter et al. (2007) used a genetic approach to estimate prewhaling abundance of gray whales and reported DNA variability indicative of an ENP gray whale population of approximately two to four times more numerous than today's average census size. (The ENP gray whale population was last estimated to be 20,110 whales (Rugh et al. 2008)). Alter et al. (2007) note that their estimate likely measures both the eastern and western gray whale stocks together, and that an important question is whether carrying capacity has declined over time. If it has, then gray whales may be reduced from historical numbers but may have reached a new, lower carrying capacity today. The lower range of the confidence interval reported in Alter et al. (2007) is consistent with a historic abundance of about 30,000 whales each for the western and eastern North Pacific stocks of gray whales. An abundance of 30,000 gray whales in the Eastern North Pacific stock is within the confidence limits for estimates of carrying capacity reported by Wade (2002).

Estimates of gray whale population size after commercial exploitation also vary. Reilly (1981) estimated that the population declined to below 12,000 whales, Henderson (1984) estimated that the population did not exceed 8,000 to 10,000 whales, and Butterworth et al. (2002) estimated a number between 4,000 to 5,000 whales, down to as low as 1,500 to 1,900 whales after commercial whaling stopped in 1937 and 1938. For a discussion of aboriginal subsistence whaling for ENP gray whales, refer to Section 3.4.3.6.1, Aboriginal Subsistence Whaling.

3.4.3.2.2 Protection and Recovery after Commercial Exploitation

Gray whales have been protected by a suite of international agreements and federal laws initiated in 1937. As a result, the gray whale population recovered since its depletion caused by commercial whaling in the early 1900s (Rugh et al. 2005). For a summary of aboriginal subsistence whaling for ENP gray whales conducted during this time, refer to Section 3.4.3.6.1, Aboriginal Subsistence Whaling. A summary of treaties and laws relevant to protection and recovery of gray whales is provided below, and they are explained in more detail in Section 1.2, Legal Framework.

Two federal laws are discussed both here and in Chapter 1. The ESA is explained more fully here because the gray whale population has recovered to population levels that supported delisting (i.e., the ESA no longer applies to the extent of the other laws described in Chapter 1). The listing history and associated abundance estimates provide context relevant to describing recovery of the population after commercial exploitation.

1. 1937 International Agreement for the Regulation of Whaling — The 1937 Agreement protected gray whales from commercial whaling, but included an exception to allow for aboriginal subsistence use. Norway, the United States and others signed it in 1937 (Reeves 1984) and Canada, the Soviet Union, and Japan signed it later (1938, 1946, and 1951, respectively). Consequently, since 1951, all nations with factory ships operating in the North Pacific Ocean have been subject to the provisions protecting gray whales from commercial whaling (Reeves 1984). During the fall southward and spring northward migrations between 1959 and 1969, scientists in the United States took 316 gray whales off the coast of central California under IWC special research permits to establish the status of the population (Rice and Wolman 1971).

2. 1946 International Convention for the Regulation of Whaling — The ICRW continued the 1937 Agreement's prohibition on commercial whaling of gray whales, as well as allowing aboriginal subsistence whaling (Section 1.2.4.1, International Whaling Governance under the ICRW, contains more detail).

3. Whaling Convention Act — The WCA prohibits commercial whaling, except for aboriginal subsistence whaling consistent with the IWC Schedule (i.e., regulations of the IWC that are an integral part of the ICRW) (Section 1.2.4, Whaling Convention Act, for more detail).

4. Endangered Species Act — The gray whale was listed as an endangered species under the statute preceding and replaced by the ESA (35 FR 8495, June 2, 1970). Following a comprehensive evaluation of its status (Breiwick and Braham 1984), NMFS concluded on November 9, 1984 (49 FR 44774), that the population should be listed as threatened, instead of endangered. No further action was taken until 1991 when a subsequent review, made available to the public on June 27, 1991 (56 FR 29471), showed that the best available abundance estimate (in 1987/1988) was 21,296 whales, recalculated to be 22,250 whales in 1987/1988 after Rugh et al. (2005) applied new correction factors. The latest available abundance estimate is 20,110 whales (SE equals 1,766) for the census conducted in 2006/2007 (Rugh et al. 2008). The estimate of increase is 2.59 percent (SE equals 0.28 percent) when using data from 1967/1968 to 1997/1998, 1.86 percent (SE equals 0.32 percent) when using data from 1967/1968 to 2001/2002, and 1.59 percent (SE equals 0.31 percent) when using data from 1967/1968 to 2006/2007 (Rugh et al. 2005; J. Breiwick, pers. comm.. 2008; Rugh et al. 2008). There are indications that this population

is approaching the K of its environment (Reilly 1992; Wade and DeMaster 1996; Wade 2002; Wade and Perryman 2002; Moore 2005; Rugh et al. 2008).

On November 22, 1991, NMFS proposed to remove the gray whale population from the list of endangered and threatened wildlife (56 FR 58869). NMFS published a final notice of determination (58 FR 3121, January 7, 1993) to remove the population from the list because the species had recovered to near its estimated original population size and was neither in danger of extinction throughout all or a significant portion of its range, nor likely to again become endangered within the foreseeable future. On June 16, 1994 (59 FR 21094), the gray whale population was formally removed from the list of endangered and threatened wildlife. As required under Section 4(g) of the ESA, NMFS drafted a plan to monitor the status of the stock for at least five years following the delisting. NMFS' comprehensive status review, completed in August of 1999, recommended that the population continue under a non-threatened classification (Rugh et al. 1999).

In 2001, NMFS received a petition to relist the gray whale under the ESA, but found that the petition did not present substantial scientific or commercial information indicating that relisting was warranted (66 FR 32305, June 14, 2001). NMFS has continued monitoring the population since delisting.

The Pacific stock of gray whales is no longer a threatened or endangered species. Therefore, the requirements of the ESA no longer apply to this population.

5. Marine Mammal Protection Act – The MMPA established a moratorium on the taking of gray whales, along with all marine mammal species, subject to certain exceptions (Section 1.2.3, Marine Mammal Protection Act, for more detail).

3.4.3.3 Distribution and Habitat Use

This section describes the areas that whales occupy and their feeding, breeding, or calving activities over various periods. Distribution and habitat use on a seasonal timescale are described above in Section 3.4.3.1.4, Seasonal Migrations, in the context of the long-distance migrations that are thought to have evolved in response to seasonal mixing and upwelling of oceanic waters affecting the production, dispersion, and concentration of prey (Moore 2005; Swartz et al. 2006). These seasonal migrations have led to a description in the scientific literature of 'summer feeding grounds' and winter 'breeding (or calving) grounds.' These categories are misleading because feeding and mating behavior occur throughout the range during all seasons (Rice and Wolman 1971; Swartz et al. 2006). Gray whales feed opportunistically on a diversity of prey

species throughout their entire range, including along the migratory corridor and in their winter range (Nerini 1984). Similarly, they breed in the fall in their summer range at the onset of the southward migration, breed and calve along the migratory corridor, and breed and calve in the winter on the winter grounds (Shelden et al. 2004; Rugh et al. 2005; Swartz et al. 2006). The summer range is primarily a feeding area, but also serves as a weaning and breeding area. The winter range is primarily a resting or nursing area where there is also breeding, calving, and feeding. The migratory corridor supports a continuum of behaviors (feeding, breeding, and calving) as whales shift between summer and winter ranges.

Gray whale distribution and habitat use exhibit within-season and year-to-year variability within their range (Yablokov and Bogoslovskaya 1984; Gardner and Chávez-Rosales 2000). Additionally, their entire range shifts over longer time frames in response to long-term environmental variability such as oceanic climate cycles (e.g., El Nino-Southern Oscillation, Pacific Decadal Oscillation, and Arctic Oscillation). Gray whale distribution and habitat use are dynamic and inherently linked to the variability of the prey base and changing physical properties of the ocean environment (Section 3.4.3.1.3, Feeding Ecology and Role in the Marine Ecosystem).

3.4.3.3.1 Summer Range Distribution and Habitat Use

Most of the whales in the gray whale population migrate north of the Alaska Peninsula during the spring northward migration, but some gray whales remain south of the Alaska Peninsula to feed throughout the summer and fall. This discussion uses the Alaska Peninsula/Aleutian Island chain as a conceptual north/south line dividing the summer range into the northern and southern portions. The northern portion of the summer range is also referred to in the literature as 'northern seas' (Nerini 1984; Gardner and Chávez-Rosales 2000) and 'primary,' 'principal,' 'traditional,' 'northern,' or 'summer' feeding grounds (e.g., Braham 1984; Nerini 1984; Swartz 1986; Darling et al. 1998; Moore et al. 2000; Dunham and Duffus 2002; Findlay and Vidal 2002), while the southern portion of the summer range is also referred to as the southern feeding grounds 'alternative feeding grounds [or area]' (Moore et al. 2007) and sometimes the 'migratory [or migration] corridor' (e.g., Braham 1984; Nerini 1984). Distribution and habitat use in both the northern and southern portions of the summer range are described below.

Northern Portion of the Summer Range

The extent of gray whale distribution and habitat use in the northern portion of the summer range (Figure 3-3) is not well-documented, and patterns are difficult to discern; much of the data come

from historical whaling records or observational efforts that are not consistent or comparable (Berzin 1984; Clarke and Moore 2002). Sighting data from Soviets and Americans throughout 1958 to 1993 are summarized in Clarke and Moore (2002), but the information is of limited value due to the inconsistent methods by which the data were collected. Generally speaking, whales are distributed as far east as the Canadian Beaufort Sea (Rugh and Fraker 1981), as far west as the Eastern Siberian Sea along the coastal shelf of Siberia and near Wrangel Island (Berzin 1984; Reilly 1984; Miller et al. 1985; IWC 2006a), along the north and south coasts of the Chukotkan Peninsula (Berzin 1984; Miller et al. 1985), at shoals in the northeastern Chukchi Sea near Barrow, Alaska (Moore et al. 2000), and in the northern Bering and southern Chukchi Seas in areas between the Bering Strait and St. Lawrence Island (Moore et al. 2003).

Sea ice cover probably influences distribution to some extent, but the primary factor influencing distribution and habitat selection appears to be availability of prey (Moore 2000; Clarke and Moore 2002). During the summer months in the Alaska Beaufort Sea (i.e., western Beaufort Sea) and southern Chukchi Sea, gray whales selected coastal and shoal habitats (less than 115 feet [35 meters] deep) with less than 20 percent ice cover (Moore et al. 2000). Scientists at the 2006 IWC meeting reported that six satellite-tagged individual whales were also monitored moving north to these regions in open ice leads (i.e., open water paths in the ice) during mid-June, but they moved through areas that had 30 to 40 percent ice cover at times (IWC 2006a). In the fall months, whales have been observed feeding in more than 70 percent ice cover. Moore et al. (2000) concluded that gray whale habitat selection is not strongly related to ice conditions (ratios for numbers of whales at various depths were similar for both light and heavy ice years); instead, gray whale distribution is primarily linked to prey density. During years when strong surface winds result in the cross-shelf transport of upwelled, nutrient-rich waters, benthic prey species are probably more productive and densely aggregated in nearshore coastal and shoal habitats (Moore 2000). During years of moderate to low wind mixing and transport, gray whales select shelf and trough habitats further offshore, where currents are directed by bathymetric features (i.e., seafloor geology) and may provide migration cues to southbound whales (Moore et al. 2000). The overall abundance of the gray whale population also probably influences distribution in the northern portion of the summer range (and elsewhere) because, as the gray whale population increases, the range may expand as individuals forage more widely for limited food resources. Rugh et al. (2001) proposed that the week's delay in southward migration timing after 1980 may have been due to a wider distribution of the population as their search for food covered increasingly greater areas, making

the trip south longer. This effect of a larger population leading to a wider dispersal was also noted by other authors (Yablokov and Bogoslovskaya 1984; Stoker 2001).

Within-season movement of gray whales has been documented over the years, leading researchers to the conclusion that whales in the northern portion of the summer range exhibit constant and extensive local migrations between feeding areas; they do not stay in one area for the entire season (Yablokov and Bogoslovskaya 1984; IWC 2006a). Individual whale movement in the northern portion of the summer range has not been documented to the extent of individual whales in the southern portion of the summer range (photographic-identification [photo-id] is impractical in such a large and remote area), but scientists at the 2006 IWC meeting reported preliminary results from a recent satellite-tagging study. The tagging data show that four individual whales used the southern Chukchi Sea for more than three months, with the distribution of the individual whales overlapping by only 3 percent within this area (IWC 2006a).

Long-term shifts in the summer range have also been described recently and are thought to be related to the operation of two major oceanic climate cycles: the Arctic Oscillation and the Pacific Decadal Oscillation. These two cycles generally occur in the North Pacific every 10 to 30 years, last 30 to 40 years, and have distinct warm and cool phases due to changes in sea surface pressure and sea surface temperature. The operation of both the Arctic Oscillation and Pacific Decadal Oscillation appears to be causing a major ecosystem shift in the Bering Sea, a transitional area that is at a crossroads between the Pacific Ocean and the Arctic Ocean and is, therefore, influenced by both cycles (Bond 2006; Grebmeier et al. 2006).

The Bering Sea (northern Bering and southern Chukchi Sea) was once considered the primary gray whale feeding ground (Braham 1984; Moore et al. 1986; Kim and Oliver 1989; Moore et al. 2000). During the late 1970s to early 1980s, it was characterized by cold climate conditions with extensive seasonal ice cover and high benthic productivity (Grebmeier et al. 2006). Time-series studies from the Chirikov Basin (between St. Lawrence Island and the Bering Strait) show that in 1980, *Ampeliscid* amphipods were the primary prey items of gray whales, sampled at record-high densities from the 1970s to mid 1980s (Stoker 1981; Yabolokov and Bogoslovskaya 1984; Grebmeier et al. 1989; Highsmith and Coyle 1990). The amphipod prey base declined by 30 percent between 1986 and 1988 (Highsmith and Coyle 1992; Sirenko and Koltun 1992). This reported decline in benthic biomass did not have an immediate observable effect on gray whale abundance. A subsequent gray whale mortality event in 1999/2000, coupled with observations of emaciated whales, led scientists to conduct aerial surveys of the Chirikov Basin in 2002 to

compare distribution and relative abundance with the 1980s data (Moore et al. 2003). Sighting rates of gray whales in the Chirikov Basin were 3 to 17 times lower than they had been in the 1980s (Moore et al. 2003; Grebmeier et al. 2006). Benthic productivity of the prey had declined precipitously, and only the southern Chukchi Sea supported dense aggregations of whales (Moore et al. 2007).

The Bering Sea is now characterized by warmer conditions with less sea ice cover and lower benthic productivity (Grebmeier et al. 2006). Gray whales have responded by foraging in other areas (Moore et al. 2003; Moore 2005; Moore et al. 2007). Observers are now seeing larger feeding aggregations in different parts of the northern portion of the summer range, north of the Bering Strait in the south-central Chukchi Sea and just north of St. Lawrence Island in the northern Bering Sea (south of the Chirikov Basin), an area that was previously recorded as devoid of gray whale feeding (Clarke and Moore 2002; Moore et al. 2003). Scientists recently reported at the 2006 IWC Scientific Committee meeting that a large proportion of 17 satellite-tagged whales fed extensively in the Chukchi Sea; six whales retained their tags for more than 100 days, and all six spent most of their time in the Chukchi Sea (IWC 2006a). These data support an increase in foraging in that area. Observers have also documented feeding that has not been seen previously in the southern portion of the summer range, such as near Kodiak Island and in the Gulf of Alaska (near Sitka) (Moore et al. 2003).

Southern Portion of the Summer Range

Not all ENP gray whales make the full migration every year north of the Alaska Peninsula/Aleutian Island chain. Some whales spend all or part of the summer feeding in the southern portion of the summer range. There is no evidence that the whales feeding in this portion of the summer range are genetically or demographically unique, and both NMFS and the IWC continue to treat ENP gray whales as a single stock for management purposes. Nevertheless, in its 2001 EA, NMFS considered the effect that a Makah hunt might have on the group of whales using the southern portion of the summer range, which it termed the 'Pacific Coast Feeding Aggregation' or PCFA. The following discussion describes the studies of whales in the southern portion of the summer range and how information from these studies is relevant to analyzing the effects of a potential gray whale hunt in the Makah Tribe's U&A.

For more than four decades, gray whales have been observed feeding south of the Alaska Peninsula and Aleutian Island chain during the late spring, summer, and fall feeding periods, past the times typically associated with the end of the spring northward migration and before the times

typically associated with the onset of the fall southward migration. Between late spring and fall, gray whales have been observed off coastal Mexico (Patten and Samaras 1977); southern, central, and northern California (Mallonée 1991; Calambokidis et al. 2004a); southern and central Oregon (Herzig and Mate 1984; Sumich 1984); northern Washington and northern Puget Sound; southwest and western Vancouver Island; British Columbia and north British Columbia (Darling 1984); and Sitka and Kodiak Alaska (Calambokidis et al. 2002; Calambokidis et al. 2004a; Moore et al. 2007). During line transect vessel surveys conducted in the Olympic Coast National Marine Sanctuary from mid-June through late July, 1995 through 2002, for instance, Calambokidis et al. (2004b) documented the presence of five gray whales in the migratory corridor off the Washington coast, averaging 3.1 miles (5 km) from shore in 65.6 feet (20 m) of water. Feeding gray whales occurred off California even in the 1920s when population numbers were very low (Clapham et al. 1997; Moore et al. 2007). In the literature, these observations have often been described as summer sightings (Gosho et al. 2001), and the whales have been referred to as summer feeders or summer residents, a term first used by Pike (1962) to describe gray whales that occurred off British Columbia from June through September. Researchers have used the term 'summer' to refer to a longer period than is generally associated with the season, describing sightings off the Washington coast between June 1 and November 30 as summer feeding (e.g., Calambokidis et al. 2002; Calambokidis et al. 2004a).

In the early 1970s scientists discovered they could identify individual whales by dorsal area shape, scars, and coloration patterns that are visible above the surface of the water when the whales arch to dive (Darling 1984). Photographing and identifying individual whales, noting the location and time of sighting, and comparing photographs within and between years has allowed scientists to study abundance, distribution, movements, and survival of whales using the southern portion of the summer range. Over time researchers have established summer survey areas either because the area is one where whales were likely to be found feeding or because the area is one where a management activity occurs (for example, a counting station along the migration route, or an area where a hunt is proposed). The following discussion focuses on survey areas because that is how data are collected, reported and analyzed. Although a researcher's designation of a survey area will not necessarily correspond to areas that are biologically meaningful to individual whales or groups of whales, they are nevertheless useful for analyzing local effects.

From 1972 to 1981, researchers conducted photo-id studies in survey areas off the west coast of Vancouver Island, British Columbia (Hatler and Darling 1974; Darling 1984). Both effort and survey areas varied between years. Survey effort ranged from less than 5 days in 1972 to 54 days

in 1976. Five discrete areas were surveyed. Surveys began in the 24.9-mile [40-kilometer] stretch of coast around Wickaninnish Bay near Tofino on the central west coast of Vancouver Island (surveyed from 1972 to 1981). Later surveys extended north to include three more discrete survey areas (Estevan Point, between Clayoquot Sound and Nootka Sound, surveyed from 1976 to 1981; Cape Scott, surveyed in 1977 and 1979; and Calvert Island, surveyed in 1977 and 1979), then survey efforts expanded south to include the West Coast Trail survey area (surveyed from 1979 to 1981). In 1976 and 1977, the greatest number of whales identified in any one summer was 34 (some individuals were resighted from prior years), corresponding to maximum effort and including one year when four of the five survey areas were surveyed (excluding West Coast Trail, which was added later in 1979). Flights to locate whales missed by the boat-based surveys were carried out weekly in 1976 and sporadically in other years. Sixty-three percent of the identified whales were seen in more than one summer, and thirty-seven percent were identified in only one summer (i.e., they were never resighted). One whale was seen in seven consecutive years and others were seen across spans of time as long as eight summers but were not seen in every summer.

On the basis of these data, Darling (1984) surmised that 35 to 50 whales were present during 1972 to 1981 off the coast of Vancouver Island in any one summer, but they were not all the same whales each year. During 1975 to 1981, Darling (1984) identified 93 total individual whales that were present in this study area for at least one year. Darling (1984) noted that other researchers surveying in areas off of Oregon thought there were approximately 75 total individual whales identified each year of their effort, so he surmised that there were at least 100 gray whales in the British Columbia-Washington-Oregon area in any one summer.

Within-season and between-year movement of identified and resighted whales was also recorded. Some identified whales remained in the same survey area throughout the summer; for example, two whales remained in Wickaninnish Bay survey area for at least 80 days. Other whales traveled considerable distances in search of food; for example, a whale identified in the Wickaninnish Bay survey area reappeared in the Estevan Point survey area 47.9 miles (77 kilometers) away. Between years, identified whales reappeared at least 93.3 miles (150 kilometers) away from where they were in a prior year.

More recently, from 1984 to 1993, researchers from Cascadia Research Collective conducted photo-id studies of eight discrete survey areas in the inland waters of southern, central, and northern Puget Sound and Hood Canal; the Strait of Juan de Fuca; and the outer Washington

coast, including Grays Harbor (Calambokidis et al. 1994). Survey efforts varied between summers and areas, ranging from 16 days in 1990 to 50 days in 1991. Calambokidis et al. (1994) developed a catalog of photo-identified whales; 76 individual photo-identified whales were in the catalog by 1993. Of these 76 photo-identified whales, only 17 whales (22.3 percent) were resighted in more than one year, either in the same area or a different area including British Columbia. Between-year resightings of photo-identified whales were most common in the northern Puget Sound survey area, where five of seven identified whales were resighted in subsequent years. They were least common in the southern and central Puget Sound and Hood Canal survey areas, where 1 of 18 identified whales was resighted in subsequent years. Individually identified whales were resighted an average of 47 days later, and the longest time between first and last sightings in a season was 112 days.

These photo-id efforts collectively demonstrate that some of the gray whales feeding in the southern portion of the summer range remain for extended periods and that some of the whales return to the same general feeding areas in later years, though not necessarily every year (Darling 1984; Calambokidis et al. 1994). The studies also demonstrate that many of the gray whales photo-identified were not resighted in subsequent years, that new individuals were photographed every year, and that some whales inhabited different areas in different years (Darling 1984; Calambokidis et al. 1994). These observations were important because they suggest a lack of strong site fidelity (returning to the same previously occupied breeding or feeding location), which can indicate that a particular group of animals is different from the rest of the population in a biologically meaningful way (i.e., genetic or behavioral differences). Such differences can indicate stock structure and demographic independence, which have management implications. Animals with strong site fidelity may be unlikely to move or select new habitats if their traditional habitat becomes less favorable (Switzer 1993; Quan 2000).

In response to the Makah request to resume their traditional hunt of gray whales, NMFS initiated photo-id studies of gray whales off the coast of Washington in 1996 to better understand distribution (including site fidelity and habitat use) and abundance (Gearin and DeMaster 1997; Gosho et al. 1999; Gosho et al. 2001). The agency was responding to federal conservation and management obligations pursuant to the ESA monitoring plan following the 1994 delisting and was also operating under federal trust obligations, triggered by the Makah Tribe's request to hunt gray whales starting in the 1998 to 2002 five-year IWC catch limit time frame (Gearin and DeMaster 1997). NMFS was investigating whether the proposed level of harvest was sustainable for the area. The agency focused its survey efforts in the Strait of Juan de Fuca (from Tatoosh

Island to Sekiu), the northern Washington coast (Tatoosh Island to Carroll Island), and southern Vancouver Island. NMFS noted that the survey area had limitations and indicated that effort should be extended beyond these three areas south to Grays Harbor (the area surveyed by Calambokidis et al. 1999) and north to west Vancouver Island (the area surveyed by Darling 1984) to increase the probability of sighting gray whales in Washington and British Columbia waters (Gosho et al. 1999).

From 1998 to the present, NMFS funded and collaborated with Cascadia Research Collective and other researchers to photo-id gray whales. This collaboration has allowed researchers to combine resources and results and cover broader survey areas within the southern portion of the summer range, from southern California to Kodiak Island. Effort within survey areas varied, with most intensive coverage in the survey areas along the southern and western coast of Vancouver Island and just north of Vancouver Island (Calambokidis et al. 2002; Calambokidis et al. 2004a). Researchers obtained photographic identifications of between 1,159 and 1,499 whales each year from 1998 to 2003. From those photographs, 600 individual whales were identified (multiple photographs were taken of most whales in each year, and some whales were seen in more than one year, so the number of photos taken exceeds the number of whales uniquely photo-identified). From those 600 whales, 477 individual whales were identified between California and Kodiak during the June 1 through November 30 summer feeding period, outside the time period of the northward migration (Calambokidis et al. 2004a). Calambokidis et al. (2004a) limited most of their analyses to the 408 whales seen in the core survey region from northern California to northern British Columbia (which they also call the 'Pacific Coast Feeding Aggregation' or PCFA survey area – see Figure 3-4 and Figure 3-5). Whales sighted in northern and southern Puget Sound were rarely seen in other feeding areas during the summer feeding period, so they were excluded from the analysis in Calambokidis et al. (2004a).

Of the 408 unique whales seen in the core region, 49 percent were seen between June 1 and November 30 in only one of the six years (excluding those first seen in 2003), which demonstrates that many of the newly seen whales did not return in subsequent years. Twenty-five percent of the whales were seen in every summer after their initial identification, including 49 whales that were seen in all six years. The remaining 26 percent were seen more than once but not in every year. Some of the latter whales were seen in Kodiak and Southeast Alaska in years that they were not seen in the core region (Calambokidis et al. 2004a). Five of the ten whales identified in Southeast Alaska and eight of the 46 whales seen in Kodiak had been seen farther south in the core survey region. For example, Whale 130 was only seen in Southeast Alaska in

1999, but had been seen in every other year somewhere between Oregon and northern Vancouver Island. Likewise, Whale 232 was only seen in Kodiak in 2002, but was seen along Vancouver Island in 2000, 2001, and 2003. Whale 152 was photo-identified in Kodiak in 2002, but previously had been seen along the west coast of Vancouver Island in 1999, as early as 1995 in the Cape Caution, British Columbia, area, and in 1992 in the Clayoquot Sound, British Columbia, survey area (Calambokidis et al. 2003). Another example is Whale 68, which was seen in Southeast Alaska in 1998 and 1999, was not seen in the core region from 1998 to 2003, and was seen in northern Washington during 1996 and 1997. While these are only a few examples of whale movements, they illustrate the extensive inter-year movement of whales, which partially explains the gaps in the observations for some whales and the disappearance of others from the core survey region.

Whales using the core survey area exhibited a wide range of movement across and within years. The 49 whales seen in each of the six years provide a useful example. None of those whales was seen exclusively in a single area, and 49 percent were seen in at least four of the six survey areas from 1998 to 2003. However, whales did regularly visit the same areas across years. Seventy-one percent were seen in at least one of the areas during five or more of the six years. Those areas were primarily along Vancouver Island, which partially reflects the larger amount of survey effort (Calambokidis et al. 2004a). Thus, some whales regularly visit an area, but they use other areas as well. Calambokidis et al. (2004a) showed that whales seen in more years appeared in more regions.

Within-season movement of photo-identified and resighted whales in the summer feeding period was extensive (Calambokidis et al. 2004a). For each survey area examined, there was a pattern of decreasing movement between survey areas within season for each survey area farther to the north or south (Calambokidis et al. 2004a). This pattern demonstrates that whales do focus on specific areas within the summer season, but they will move in search of food, most likely to neighboring areas. There have been examples of large-scale movements within a year. One whale, originally photo-identified in a southeastern Alaska survey area around September 1999, was resighted far south about a month later in a northern California survey area (Calambokidis et al. 2004a). Another whale moved in the opposite direction; researchers originally identified it off southern Vancouver Island during June 2003, it swam at least 1,104 nautical miles in 34 days or less, and it reappeared off Kodiak on August 9, 2003 (Calambokidis et al. 2004a). Within-season and between-year movements of gray whales likely relate to changes in productivity and prey availability. Darling et al. (1998), for example, noted a long-term change in the use of the

Wickaninnish Bay survey area off the central west coast of Vancouver Island, British Columbia. From 1966 to 1977, whales were consistently present from May to September, but use of the habitat during summer was becoming less consistent by 1977. Since 1989, whales have been observed feeding mostly on pelagic prey (e.g., crab larvae and swarming amphipods), although occasional bouts of benthic feeding also occurred throughout this time, such as in April 1996 (Darling et al. 1998).

Similarly, Moore et al. (2007) noted that tens to hundreds of gray whales have been seen consistently along the southeastern coast of Kodiak Island since 1999; 350 to 400 feeding gray whales were counted during a single aerial survey in July of 2000. Moore et al. (2007) proposed that the high counts of whales near Kodiak in 2000 and 2001 may be a result of prior oversight (i.e., the whales may not have been sighted because Kodiak has long been considered part of the migratory corridor and not part of the summer range). The high counts may also be related to feeding opportunities resulting from ecosystem responses to the 1997 to 1998 El Nino in the North Pacific (see El Nino discussion below in the Winter Range Distribution and Habitat Use Section). The repeat occurrences of whales at certain sites, appearance at new sites, and discontinued use of other sites are probably related to gray whale foraging patterns and behavior, prey distribution, abundance, and predictability (Darling et al. 1998).

In deriving estimates of 35 to 50 gray whales for Vancouver Island and 100 whales for the Pacific Northwest, Darling (1984) defined abundance as the number of gray whales he could find in his study sites in any particular year. In its 2001 EA, NMFS based its evaluation of effects on gray whale abundance using (1) a larger survey area than Darling considered and (2) the entire group of whales seen in the area (in more than one year), not just those seen in a single year. Recognizing that whales are highly mobile and move freely in a larger area than the Makah U&A during the summer feeding period, NMFS considered the survey area from northern California to northern British Columbia to be the most appropriate area to use for managing a gray whale harvest to avoid local depletions, and termed the whales using that area during the summer feeding period the 'Pacific Coast Feeding Aggregation' (PCFA). For evaluating effects on abundance, NMFS also considered the entire group of whales seen in the area in more than one year, not just the number of whales seen in a single year (some of which might return and some of which never return).

The Ninth Circuit in *Anderson v. Evans* (2004) found that the scale of NMFS' inquiry in the 2001 EA was not sufficiently fine – that NMFS must consider not just effects to the ENP gray whale

stock as a whole and the PCFA group of whales, but effects to the smaller group of whales frequenting the Makah Tribe's U&A – the "relatively small group of whales [that] comes into the area of the Tribe's hunt each summer,... about sixty percent of [which] are returning whales (although, again, not necessarily whales returning annually)" (*Anderson v. Evans* 2004). In holding that NMFS was required to prepare an EIS, the court focused on impacts to the local area.

> Even if the eastern Pacific gray whales overall or the smaller PCFA group of whales are not significantly impacted by the Makah Tribe's whaling, the summer whale population in the *local* Washington area may be significantly affected. Such local effects are a basis for a finding that there will be a significant impact from the Tribe's hunts. *See* 40 C.F.R. § 1508.27(a). Thus, if there are substantial questions about the impact on the number of whales who frequent the Strait of Juan de Fuca and the northern Washington Coast, an EIS must be prepared (*Anderson v. Evans* 2004).

Subsequent to NMFS' preparation of the 2001 EA, which focused on the PCFA area as an appropriate scale for managing a Makah gray whale hunt, Calambokidis et al. (2004a) proposed that a smaller survey area within the PCFA survey area, from Oregon to Southern Vancouver Island (ORSVI), was most appropriate for managing a Makah gray whale hunt. To reach this conclusion, they focused on whales identified in the survey areas corresponding to the Makah U&A (the northern Washington coast and Strait of Juan de Fuca survey areas). They examined the degree to which whales sighted in these survey areas were also sighted in the ORSVI and PCFA survey areas (Figure 3-5).

They found that of the whales seen in the PCFA survey area during the six years of their study, 30 percent were also seen in the Makah's U&A (northern Washington coast and Strait of Juan de Fuca survey areas). In contrast, of the whales seen in the ORSVI survey area during the six years of their study, more than half were also seen in the Makah's U&A. Based on the relatively high rate of interchange between the ORSVI and the Makah U&A, compared to the rate of interchange between the PCFA and the Makah U&A, they concluded that "it is both logical and reasonable to use ORSVI as the region for abundance estimation in setting quotas for a harvest of whales from the [Makah U&A] region."

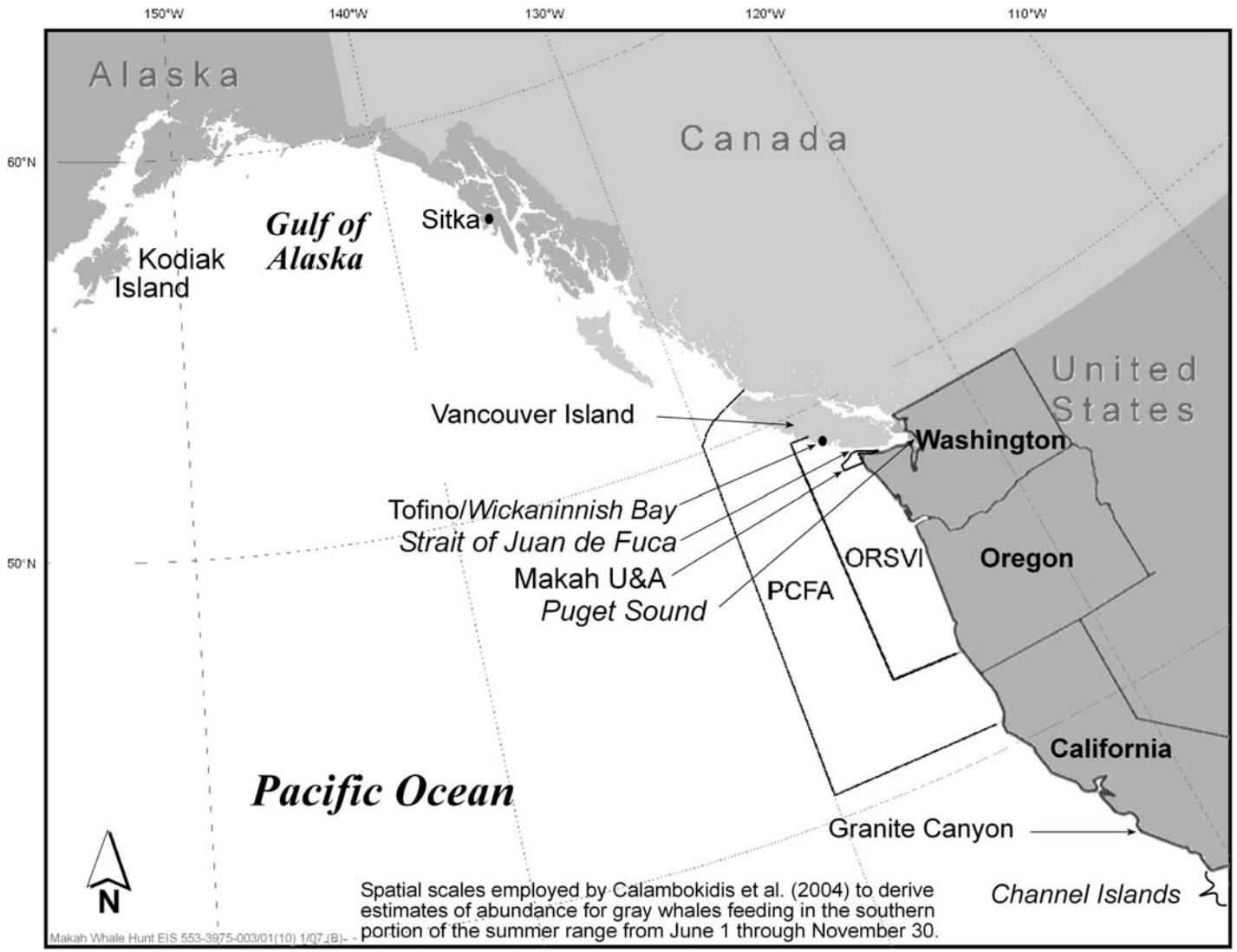


Figure 3-4. Spatial Scales in the Project Area – PCFA and ORSVI Survey Areas

Individual Survey Areas (North to South)	Combined Survey Areas		
	Makah U&A	ORSVI	PCFA
Coastal Waters			
Kodiak Alaska			
Southeast Alaska			
Northern British Columbia			
Western British Columbia			
Southern Vancouver Island			
Strait of Juan de Fuca			
Northern Washington Coast			
Grays Harbor			
Northern Oregon			
Southern Oregon			
Northern California			
Central California			
Inland Waters			
North Puget Sound			
Puget Sound & Hood Canal			

Figure 3-5. Individual Survey Areas Within the Makah U&A, ORSVI, and PCFA Survey Areas

Gray whales seen in any of the survey areas each year include (1) immigrating whales (not previously identified, either because they were new to the area or because they were there in a prior year but were not photographed); (2) returning whales (previously identified); and (3) emigrating whales (previously identified but not sighted during the subsequent summer(s), either because they never returned, because they may return in later summers, or because they were there but not photographed). Calambokidis et al. (2004a) proposed that it was more appropriate to use open population models than closed population models to estimate abundance of gray whales in the PCFA and ORSVI survey areas. Because new whales are entering a given

area each year (gains through immigration and recruitment) and some new whales never return (losses through emigration and death), closed population models are not appropriate.

Calambokidis et al. (2004a) developed estimates of abundance from the open-population models that would be unlikely to yield higher results than true abundance. They assumed that all whales using either the PCFA or ORSVI survey areas in any one or more years were photographically identified (an assumption that most likely results in underestimating the true abundance of whales in these areas, since it is likely not all whales using the area are seen, photographed, and identified). Calambokidis et al. (2004a) estimated abundance in 1998 as the total number of whales seen in 1998. They estimated abundance in 1999 as the total number of new whales seen in 1999 and the predicted number of whales from the 1998 cohort that survived and would return at some time (not permanently emigrate) in subsequent years. Researchers constructed the estimates for the remaining years similarly as the sum of the newly seen whales and returning surviving whales from cohorts of previous years. They also constructed abundance estimates of returning whales by excluding the newly seen whales.

For the PCFA survey area, Calambokidis et al. (2004a) estimated that abundance increased from 129 whales in 1998 (count of all photographically identified whales) to a peak of 225 whales in 2002 (standard error equals 6.6). They estimated abundance increases of returning whales from 102 whales (standard error equals 5.7) in 1999 to a peak of 176 whales (standard error equals 20.5) in 2003. The average annual increase of returning whales was 18.5 whales from 1999 to 2003. For the smaller ORSVI region, estimated abundance increased from 84 whales in 1998 (count of new whales) to a peak of 150 in 2003 (standard error equals 20.5), and abundance estimates of returning whales increased from 61 whales (standard error equals 5.0) in 1999 to a peak of 122 whales (standard error equals 20.5) in 2003. The average annual increase of returning whales was 15.2 from 1999 to 2003. The estimates of immigrants into the area may be too high due to the assumption that all whales appear in each year. This ignores the possibility of a whale immigrating in a previous year and, thus, being missed. The data nevertheless demonstrate sightings of many new whales each year, some of which return in subsequent years.

Calambokidis (2007) and Laake (2007, pers. comm.) provided updated information on gray whale identifications throughout the southern portion of the summer range. During 1 June-30 November for 1998-2005, 464 unique whales were seen in the PCFA (from northern California to northern British Columbia) (Table 3-2). Sixty-seven percent (311 of the 464 whales seen in the PCFA) were seen within the smaller ORSVI region (Oregon to southern Vancouver Island)

(Table 3-3) and approximately 25 percent (115 of the 464 whales seen in the PCFA) were seen within the smaller Makah U&A (northern Washington Coast and Strait of Juan de Fuca) (Table 3-4).

The average number of whales identified in any one year was 160, 87, and 22 in the PCFA, ORSVI and Makah U&A regions respectively. However, those numbers do not represent the total numbers of whales that use each of these areas because not all whales using a region in a year are seen, not all whales return to the same region each year, and not all of the whales return to the PCFA each year.

The annual average number of newly seen whales (excluding 1998 when all are new by definition) was 47.9, 32.4, and 11.4 for PCFA, ORSVI, and Makah U&A, respectively. The annual average number of newly seen whales that were "recruited" (seen in a subsequent year), excluding 1998 and 2005, was 21.7, 15.3, and 4.7 for PCFA, ORSVI, Makah U&A respectively. Thus, there were a substantial number of new whales seen each year and about 45 percent of those were seen again in a subsequent year.

The plots (also known as "discovery curves") of the cumulative number of unique whales for the PCFA, ORSVI and Makah U&A (Figure 3-6) also demonstrate that this is not a closed population of whales. All of these curves continue to climb because there have been new individuals seen each year. The same pattern holds for the plots of whales that are sighted in more than one year (Figure 3-7). These latter plots are only shown for 1998-2004 because whales seen in 2005 have not had a chance to be resighted within the scope of the data. Also, latter years will appear to increase more slowly because there have been fewer opportunities for resighting whales that were first seen in one of the later years (a whale first seen in 2004 has only had one year, 2005, in which to be resighted).

TABLE 3-2. CLASSIFICATION OF WHALES SEEN WITHIN THE PCFA (NORTHERN CALIFORNIA TO NORTHERN BRITISH COLUMBIA).

YEAR	TOTAL SEEN[2]	NEWLY SEEN[3]	NEWLY SEEN & SEEN AGAIN[4]
1998	129	129	103
1999	152	75	17
2000	139	56	32
2001	174	66	25
2002	206	57	28
2003	158	22	17
2004	182	35	11
2005	142	24	-
Total		464	233

TABLE 3-3. CLASSIFICATION OF WHALES SEEN WITHIN THE ORSVI (OREGON TO SOUTHERN VANCOUVER ISLAND).

YEAR	TOTAL SEEN	NEWLY SEEN	NEWLY SEEN & SEEN AGAIN
1998	84	84	63
1999	71	26	12
2000	67	26	16
2001	127	56	17
2002	102	40	21
2003	110	26	18
2004	113	30	8
2005	101	23	-
Total		311	155

[2] "Total Seen" is the number of unique whales seen in each year
[3] "Newly seen" is the number of whales seen that year that had not been seen prior to that year (but within the 1998-2005 period).
[4] "Newly Seen & Seen Again" is the number of whales that were seen in at least one more year within the PCFA (Table 3-2) or ORSVI (Table 3-3) subsequent to the first year they were seen.

TABLE 3-4. CLASSIFICATION OF WHALES SEEN WITHIN THE MAKAH U&A (NORTHERN WASHINGTON COAST & STRAIT OF JUAN DE FUCA).

YEAR	TOTAL SEEN[5]	NEWLY SEEN[6]	NEWLY SEEN & SEEN AGAIN[7]
1998	35	35	12
1999	11	6	4
2000	14	11	7
2001	32	20	5
2002	8	1	1
2003	22	12	4
2004	22	16	7
2005	35	14	-
Total		115	40

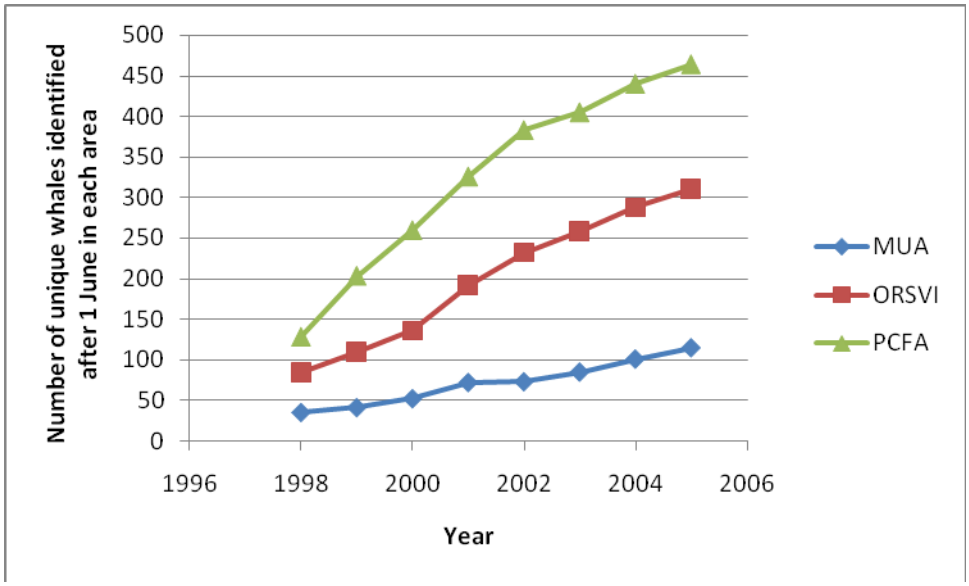


Figure 3-6. Cumulative number (i.e., "Discovery curve") of unique gray whales photo-identified in PCFA, ORSVI, and Makah U&A during 1998-2005.

[5] "Total Seen" is the number of unique whales seen in each year
[6] "Newly seen" is the number of whales seen that year that had not been seen prior to that year (but within the 1998-2005 period).
[7] "Newly Seen & Seen Again" is the number of whales that were seen in at least one more year within the Makah U&A subsequent to the first year they were seen.

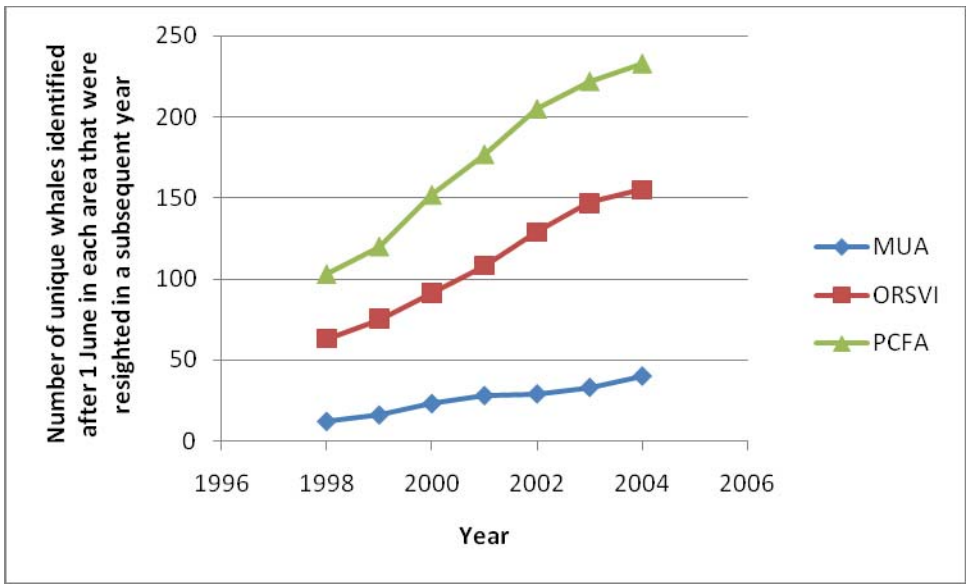


Figure 3-7. Cumulative number (i.e., "Discovery curve") of unique gray whales photo-identified in PCFA, ORSVI, and Makah U&A during 1998-2004 and resighted in a subsequent year.

Even though some whales are sighted annually or interannually returning to the southern portion of the summer range, there is no evidence that returning whales are genetically unique relative to the larger gray whale population (Swartz et al. 2006). If the gray whales in the southern portion of the summer range represented a distinct lineage of mothers, and their offspring exhibited high site fidelity (with adult males exhibiting wider dispersal and less site fidelity), this complex social structure would be reflected in differences in maternally derived genes (i.e., mtDNA) relative to the larger population. Researchers have documented such differences in mtDNA reflecting strong site fidelity for humpback whales in the North Atlantic and North Pacific in their summer feeding grounds (Baker et al. 1990; Larsen et al. 1996). The documented mtDNA differences between humpbacks in different feeding areas indicate that calves learn to use specific feeding areas from their mothers, and they subsequently pass that knowledge through the generations (a concept known as maternally directed fidelity or familial recruitment) (Palsbøll et al. 1995; Larsen et al. 1996; Palsbøll et al. 1997). Long-term resighting histories of individual humpback whales in the North Atlantic further demonstrate very high annual return rates to specific feeding grounds and minimal interchange among such regions (Clapham et al. 1993; Stevick et al. 2006).

In the case of ENP gray whales in the southern portion of their summer range, Ramakrishnan et al. (2001) analyzed the mtDNA of whales sampled in the PCFA survey area and concluded that

they do not differ genetically from the larger population. These data suggest that there is not a genetically distinct group of mothers teaching their offspring to feed in the PCFA survey area. The apparent difference in site fidelity between humpback and gray whales may be due to the geographic structure of the migratory route between the summer and wintering grounds. For humpback whales, the migratory routes to isolated feeding areas are direct and often cross deep ocean basins (Baker et al. 1990; Calambokidis et al. 1996; Clapham and Mead 1999; Calambokidis et al. 2002). In contrast, gray whales follow a coastal migratory route passing all known feeding areas. Thus, even if mothers introduce calves to a feeding area, there is a natural mechanism for all gray whales to adopt and/or revisit productive feeding areas (Calambokidis et al. 2004a). Additionally, Ramakrishnan et al. (2001) observed a statistically significant male bias in the sex ratio of gray whales sampled in the PCFA survey area of 1.8 males to 1 female (with a sample of 45 animals). The male-skewed sex ratio is further evidence that the whales in the southern portion of the summer range during the summer feeding period are not demographically independent from the larger gray whale population because such a sex ratio would not likely sustain a population without external recruitment.

Using open-population models, Calambokidis et al. (2004a) demonstrated that new whales were more likely to be seen in subsequent years if they were seen for longer periods of time during their first year. They proposed that this relationship resulted from the whale's foraging success/failure, which would affect the whale's propensity to return in subsequent years. They also proposed that the annual northbound migration along the Pacific coast provided a natural mechanism for recruitment of gray whales because the whales would stop to forage and, if they were successful, would be more likely to return in subsequent years.

In summary, available data indicate there is no evidence that the gray whales in the southern portion of the summer range are genetically or demographically different from the larger population. Sighting (photo-identification) data show a continuum of gray whale distribution in the southern portion of the summer feeding range during summer and fall feeding periods from at least the southernmost survey area in northern California to Southeast Alaska near Sitka and Kodiak Island (Calambokidis et al. 2003; Calambokidis 2004a; Moore et al. 2007). Although some gray whales return to the same general feeding area in at least some later years, photo-id data have demonstrated large-scale movements of whales and variability in gray whale distribution and habitat use within season and between years. These movements and variability are likely due to shifts in prey availability, the opportunistic and diverse nature of the species' feeding ecology (Section 3.4.3.1.3, Feeding Ecology and Role in the Marine Ecosystem), and the

ability of gray whales to respond rapidly to changes in prey composition and density throughout the range (Darling et al. 1998; Dunham and Duffus 2001; Moore et al. 2003; Moore 2005; Moore et al. 2007). The discovery of feeding areas along the migration route provides a natural mechanism for recruitment of new whales into the PCFA survey area (Calambokidis et al. 2004a).

3.4.3.3.2 Winter Range Distribution and Habitat Use

Gray whales occupy a large area in their winter range, (Reilly 1984). Researchers think the winter range extends along the west coast of the Baja Peninsula, as far north as Point Conception and the Channel Islands in central California (near Santa Barbara) to Cabo San Lucas (Reilly 1984; Jones and Swartz 2002; Urbán-Ramírez et al. 2003), where most investigators have concentrated their observations (Findlay and Vidal 2002). Findlay and Vidal (2002) also reported that some of the population migrates farther south, around the tip of the peninsula in the Gulf of California. A few isolated sightings of gray whales over the years have also occurred in more southern localities along the Pacific coast of mainland Mexico and at the oceanic Revillagigedo Islands (Findlay and Vidal 2002). Researchers reported two sightings around the Chilean-Peruvian coastal waters of South America, showing that gray whales can cross the equator in search of suitable feeding grounds (Yablokov and Bogoslovskaya 1984).

As in the summer range, gray whales in the winter range often aggregate in specific areas of the ocean, particularly near and within coastal lagoons and bays of Baja, including Lagunas Guerrero Negro, Ojo de Liebre (Scammon's Lagoon), San Ignacio, Bahia Magdalena, Bahia Almejas, and Santo Domingo Channel (Urbán-Ramírez et al. 2003). The whales segregate spatially and temporally, such that their distribution, gross movements, and timetable of lagoon occupation differ for each age-sex group (Jones and Swartz 1984; Urbán-Ramírez et al. 2003; Swartz et al. 2006). Females with calves concentrate within the interiors of lagoons or lagoon nurseries, and the whales shift to the lagoon inlets and coastal waters occupied by the single whales without calves (i.e., oestrus females and mature males) when those whales depart for the northward migration (Jones and Swartz 1984; Swartz et al. 2006). Although there is repeated use of some lagoons, whales move among and between lagoons and spend some amount of the winter in waters outside of lagoons (Urbán-Ramírez et al. 2003).

The aggregating behavior of the whales and their within-season movement between different areas on the wintering grounds relate to both reproductive and feeding activities, although some literature reports that whales mostly fast throughout the winter and rely on reserves of body fat to

carry them through the winter period. Most of the feeding in the wintering grounds appears to be pelagic, rather than benthic, although researchers have seen mud plumes indicative of benthic feeding (Nerini 1984). Pelagic prey species include sardines, bait fish, spawning squid, and crustaceans associated with eel grass mats (Nerini 1984). Feeding areas foraging gray whales frequent, as documented by Nerini (1984), include San Ignacio Lagoon, Magdalena Bay, Punta San Juanico, and Laguna de San Quentin in Baja Mexico, and La Jolla and Point Loma, California. In addition, Yablokov and Bogoslovskaya (1984) noted two sightings of gray whales around the Chilean-Peruvian coastal waters of South America.

On a longer-term basis, evidence indicates that distribution and habitat use within the wintering range varies according to environmental conditions. As one example, Bryant et al. (1984) observed that whales apparently deserted the Laguna Guerrero Negro, the northernmost lagoon, during the late 1960s but reestablished during the 1970s, increasing steadily until an observed decline in 1982. They postulated that the whales recolonized the area after commercial shipping and dredging activities stopped in 1967, but they also noted that year-to-year fluctuations in relative abundance had previously been reported and observed that some individual whales enter lagoons in successive years whereas others return after longer intervals. Bryant et al. (1984) ultimately concluded that time would tell whether the number of whales using the lagoon was still increasing over the long term and whether the decrease in 1982 was a short-term fluctuation.

Recent studies have attributed shifts in the winter range to the El Nino-Southern Oscillation, a multi-year climatic cycle occurring irregularly in the tropical Pacific every two to seven years and lasting 6 to 18 months. When El Nino events occur, driven by low atmospheric pressure between Tahiti and Australia, sea surface temperatures warm, and biological productivity drops near Baja. Whales shift farther north in their distribution, such as during the 1998 wintering season. When El Ninos subside (and La Ninas occur), the sea surface temperatures are cooler near Baja (e.g., the 1989 and 1999 calving seasons), the biological productivity is higher, and whales shift south in their distribution (Gardner and Chávez-Rosales 2000; Urbán-Ramírez et al. 1990; Sánchez-Pacheco et al. 2001; Urbán-Ramírez et al. 2003). The observation of this shift led Gardner and Chávez-Rosales (2000) to conclude that environmental conditions may be more important factors in determining breeding locations than site fidelity.

Section 3.4.3.1.4 (Seasonal Migrations) describes the timing and characteristics of the ENP gray whales' southward and northward migrations, and Section 3.4.3.3 (Distribution and Habitat Use) describes the use of the southern portion of the summer range by whales that do not make the entire

northward migration. Of particular interest for this EIS are whales identified during the summer feeding period (June 1 through November 30) in the Makah U&A (northern Washington coast and Strait of Juan de Fuca), ORSVI and PCFA survey areas. The number of these identified whales is a small fraction (less than 1 percent) of the total ENP gray whale population, almost all of which migrates through these survey areas on the northward migration. If these identified whales are randomly mixed in the population during the migration period (December 1 through May 30), less than one percent of the encounters between whales and Makah hunters during that time would be with one of these identified whales. Available information suggests this percentage would be greater than suggested based on random mixing and depends on the sighting location within the Makah U&A.

The photo identifications from 1998 to 2005 demonstrate a strong difference in the expected probability that a whale sighted within the northern Washington coast is part of the PCFA compared with a whale sighted within the Strait of Juan de Fuca survey areas (Table 3-5). A total of 67 unique whales were seen in the Makah U&A before June 1 during 1998 to 2005 (most in May 1999). Those seen off the northern Washington coast were less likely to be seen after June 1 in the Makah U&A or elsewhere in the PCFA survey area than those that were seen before June 1 in the Strait of Juan de Fuca. One whale was identified before June 1 in both areas, as reflected in the total.

Only 17.9 percent (10 of 56) of the whales identified in the northern Washington coast survey area prior to June 1 were seen in the PCFA in one or more years from 1998-2005. In comparison, 91.7 percent (11 of 12) of the whales seen prior to 1 June in the Strait of Juan de Fuca were also seen somewhere in the PCFA after 1 June during 1998-2005. If harvesting occurred in the northern Washington coast area from Dec 1 through May 31, 17.9 percent, 17.9 percent, and 12.5 percent of whales harvested could have been expected to be later seen between June 1 and November 30 in the PCFA, ORSVI, and Makah U&A, respectively (the percentages are the same for PCFA and ORSVI because zero whales were seen outside the ORSVI).

TABLE 3-5. UNIQUELY IDENTIFIED WHALE SIGHTINGS IN THE PCFA

	Seen before 1 June in:		
After 1 June 1998-2005	**Northern Washington Coast**	**Strait of Juan de Fuca**	**Total**
Not seen after 1 June in PCFA	46	1	47
Seen after 1 June in Makah U&A	7	5	11
Seen after 1 June in ORSVI outside Makah U&A	3	3	6
Seen after 1 June in PCFA outside ORSVI	0	3	3
Total	56	12	67

3.4.3.4 Current Status of the Gray Whale Population

3.4.3.4.1 Abundance Data

NMFS' National Marine Mammal Laboratory (NMML) estimates gray whale population size based on systematic shore-based surveys conducted during the whales' southbound migration. Since 1967, NMML has conducted shore-based counts of southbound gray whales near Carmel, at either Yankee Point or Granite Canyon stations (Rugh et al. 1999; Buckland and Breiwick 2002; Rugh et al. 2005, Rugh et al. 2008). NMML selected these observation areas because the continental shelf and the corresponding gray whale migratory corridor are relatively narrow. Few whales migrate beyond the visual range of observers on shore. Aerial surveys showed that 96 percent of southbound gray whales pass within 3 miles of the shore (Sund and O'Connor 1974), and fewer than 2 percent of the whales migrate beyond the sighting range of observers (Shelden and Laake 2002). These methods and data have been reviewed and accepted by the IWC, the internationally recognized authority on large cetacean management.

Single observers conduct the southbound counts by working in three-hour shifts throughout daylight hours, from mid-December to mid or late-February (Rugh et al. 2005; Rugh et al. 2008). The observers work independently, scanning the viewing area using binoculars with reticles (vertical marks in the optics) and magnetic compasses to track whale groups as they migrate past the station. When observers spot gray whales, they hand-record the following data: (1) time of

sighting, (2) horizontal bearing, (3) vertical angle, (4) pod size estimate, (5) calf sightings, (6) environmental conditions, and (7) any unusual behaviors (Rugh et al. 2005; Rugh et al. 2008). The horizontal bearing and vertical angle allow for estimates of distance from shore. On most days during January, when whale counts are at their highest, paired, independent searches are conducted by having a second observer conduct counts nearby (in the same viewing area), but out of sight of the primary observer (i.e., the observers are stationed in separate observation sheds). These independent searches provide a test of the repeatability of the census effort. More detail about survey protocol is in Rugh et al. (1993), Shelden et al. (2004), Rugh et al. (2005), and Rugh et al. (2008).

Data are entered on a computer at the end of each day and field-checked. Following further quality reviews of the database, researchers compare sighting locations and counts of paired observers to establish the probability of missing whales within the viewing area. In the abundance analysis, correction factors are applied to data to account for (1) whales that passed during periods when observers were not present (before and after the census season, at night, or when visibility was poor); (2) whales within the viewing range of observers that were missed (i.e., one observer saw a whale, but the other did not); (3) differential sightability by observer, pod size, distance offshore, and various environmental conditions; (4) errors in pod size estimation; (5) covariance within the corrections due to variable sightability by pod size; and (6) differential travel rates between day and nighttime travel (Hobbs et al. 2004; Rugh et al. 2005, Rugh et al. 2008). Rugh et al. (2005) adjusted the correction factor for nighttime travel from 1.020 (SE equals 0.023) based on radio-tagged whales (Swartz et al. 1987) to 1.0875 (SE equals 0.0363), based on Perryman et al. (1999) where thermal imagery provided quantifiable evidence that whales pass the shore at a higher rate at nighttime.

Table 3-6 lists abundance estimates of the gray whale population based on the NMFS counts of the southbound migration (Rugh et al. 2008). Population estimates are always subject to a certain level of variability, and this is represented by the confidence interval, a range of values that is relatively certain (95 percent) to include the true population size. Even though researchers provide point estimates, the confidence interval is a better representation for the estimates of abundance and their precision. For example, the point estimate of the most recent abundance was 20,110 whales, but NMFS can only be relatively certain that the true abundance in 2006/2007 was probably somewhere between 17,000 and 24,000 whales (using rounded figures for the 95 percent confidence interval).

TABLE 3-6. GRAY WHALE POPULATION ESTIMATES FROM 1967 TO 2002

YEAR	POPULATION ESTIMATE	CONFIDENCE INTERVAL
1967/1968	13,776	11,814 to 16,064
1968/1969	12,869	11,555 to 14,333
1969/1970	13,431	12,026 to 15,000
1970/1971	11,416	10,317 to 12,633
1971/1972	10,406	9,271 to 11,681
1972/1973	16,098	14,545 to 17,817
1973/1974	15,960	14,341 to 17,761
1974/1975	13,812	12,365 to 15,428
1975/1976	15,481	13,765 to 17,411
1976/1977	16,317	14,792 to 17,999
1977/1978	17,996	15,710 to 20,615
1978/1979	13,971	12,571 to 15,527
1979/1980	17,447	15,622 to 19,485
1984/1985	22,862	20,316 to 25,727
1985/1986	21,444	19,360 to 23,752
1987/1988	22,250	21,485 to 26,954
1992/1993	18,844	16,651 to 21,326
1993/1994	24,638	21,911 to 27,704
1995/1996	24,065	21,485 to 26,954
1997/1998	29,758	24,241 to 36,530
2000/2001	19,448	16,097 to 23,496
2001/2002	18,178	15,011 to 22,013
2006/2007	20,110	16,936 to 23,879

Sources: Rugh et al. (2005) and Rugh et al. (2008)

Gray whale population estimates rely on the assumptions that all whales migrate as far south as Carmel when observers are studying the southward migration and that most whales will pass offshore within view of the observers. As discussed below in more detail, it has not been demonstrated that the entire gray whale population migrates past Carmel every year (Laake et al. 1994; Rugh et al. 2005), illustrating the importance of obtaining a long time-series of estimates across years from which to determine the trend in population size (Laake et al. 1994; Rugh et al. 2005). Observers conducted the last southbound count in 2006/2007.

3.4.3.4.2 Stranding Data

A stranding is an event where a marine mammal is dead on a beach or in the shallow water, or a marine mammal is alive on a beach or in shallow water, but is unable to return to its natural habitat without assistance (50 CFR 216.3). In the 1992 MMPA Amendments, Congress designated NMFS as the lead agency to coordinate a Marine Mammal Health and Stranding Response Program. Through the Marine Mammal Stranding Network, NMFS oversees, coordinates, and authorizes volunteers from non-profit organizations, aquaria, universities, and state and local governments to respond to marine mammal strandings throughout the coastal states. The NMFS Marine Mammal Health and Stranding Response Team also coordinates with partners in neighboring countries when strandings cross national lines. Stranding network volunteers collect and report stranding data to NMFS, and the agency maintains a database.

Annual gray whale stranding data from Alaska to Mexico for the years 1995 to 2005 are in Table 3-7 and Figure 3-8. The number of gray whale strandings along the west coast of North America averaged 41 animals from 1995 to 1998. Stranding detection effort during these times was not directed; reports were compiled from opportunistic reports that were later relayed to NMFS' regional stranding coordinators (Gulland et al. 2005). In 1999 and 2000, gray whales stranded dead, or moribund, in unprecedented numbers from Alaska to Baja California Sur, Mexico, with the highest numbers reported in Mexico and Alaska (Norman et al. 2000; Gulland et al. 2005). For comparison, 29 dead gray whales were found on the Alaska coast in 1989 during surveys associated with assessment of impacts caused by the *Exxon Valdez* oil spill (Loughlin 1994). The 1999 and 2000 strandings and the subsequent return to normal conditions from 2002 through 2005 are discussed in detail below.

TABLE 3-7. SUMMARY OF ENP GRAY WHALE STRANDING DATA FROM ALASKA TO MEXICO, 1995 TO 2006

REGION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Alaska	1	0	3	3	73	55	5	0	5[1]	0	5[2]	NA
Canada	2	0	5	2	10	22	0	0	2	2	2	NA
Washington	7	2	3	4	28	23	1	2	3	2	11	8
Oregon	4	3	3	0	3	2	0	3	2	4	5	4
California	12	13	10	30	45	59	5	7	8	17	7	NA
Mexico	13	3	22	17	124	207	10	15	NA	2	12	NA
Total	**39**	**21**	**46**	**56**	**283**	**368**	**21**	**27**	**-**	**27**	**42**	**-**

NA – not available.
[1] One of these five reported strandings was unconfirmed.
[2] One of these five reported strandings was unconfirmed.
Source: Gulland et al. 2005; National Marine Mammal Stranding Response Program 2007

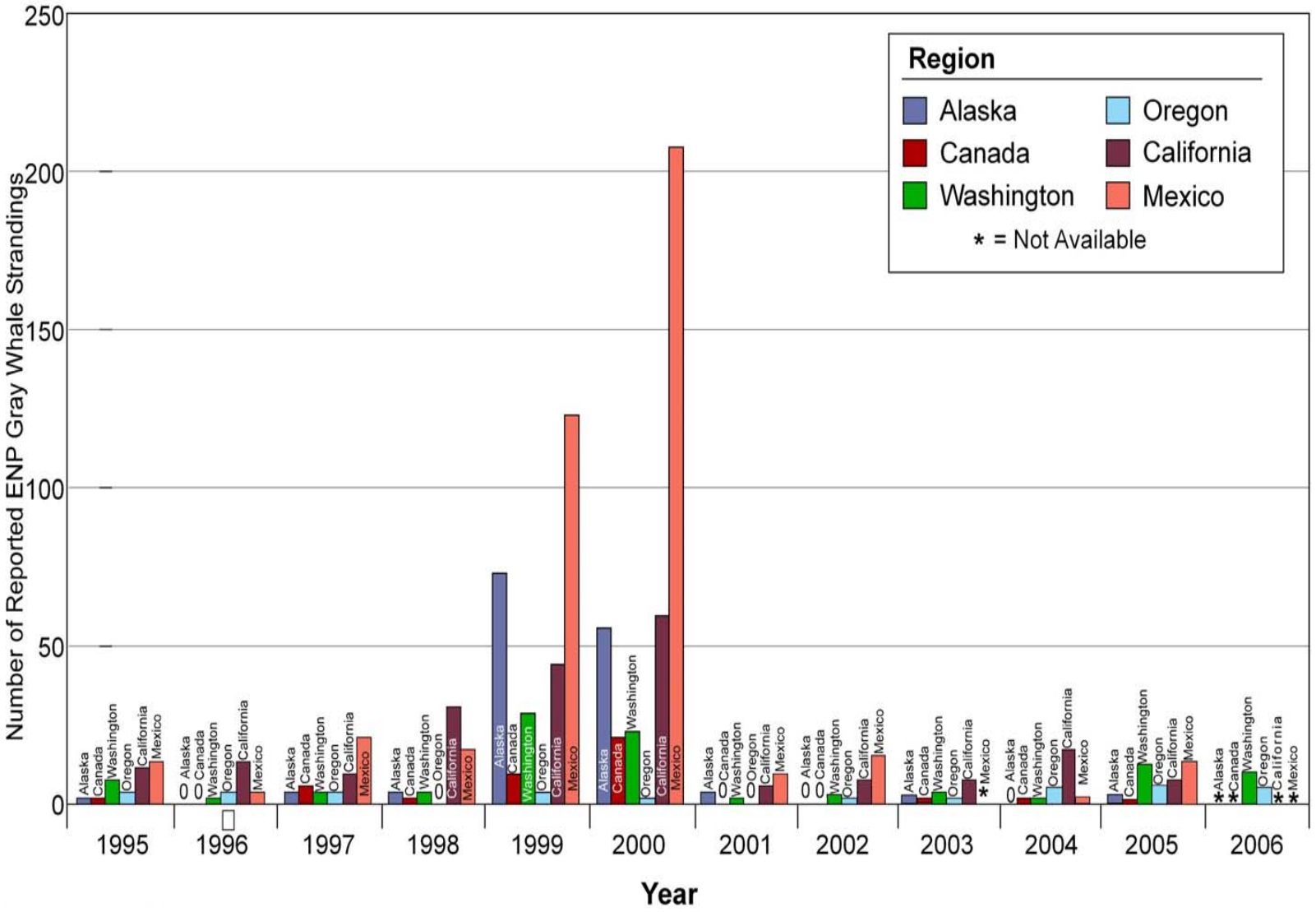


Figure 3-8. ENP Gray Whale Strandings Reported from Alaska to Mexico, 1995-2005

In 1999, the number of gray whale strandings documented along the west coast of North America increased to approximately 7 times the annual mean (41) reported between 1995 and 1998 (Gulland et al. 2005; Table 3-7). NMFS consulted the Working Group on Marine Mammal Unusual Mortality Events (Working Group) in July 1999, due to the unusually high number (283 whales) of stranded whales in 1999 (Gulland et al. 2005). The Working Group is an advisory board created under Section 404 of the MMPA, comprised of 12 members with expertise in marine science, including conservation and veterinary science, whose expertise is consulted when marine mammals are dying in an unusual way.

The Working Group weighed the 1999 stranding evidence against the following seven criteria developed to determine whether a stranding event is unusual:

1. A marked increase occurs in the magnitude of strandings when compared with prior records.
2. Animals strand at a time of the year when strandings are unusual.
3. An increase in strandings occurs in a localized area (possibly suggesting a localized problem), occurs throughout the geographical range of the species/population, or spreads geographically with time.
4. The species, age, or sex composition of the stranded animals differs from that of animals that normally strand in the area at that time of the year.
5. Stranded animals exhibit similar or unusual pathologic findings or the general physical condition (e.g., blubber thickness) of stranded animals is different from that normally seen.
6. Mortality accompanies unusual behavior patterns observed among living individuals in the wild, such as occurrence in habitats normally avoided or abnormal patterns of swimming and diving.
7. Critically endangered species are stranding. Stranding of three or four right whales, for example, may be cause for great concern, whereas stranding of a similar number of fin whales may not.

A single criterion or a combination of criteria may indicate the occurrence of an unusual mortality event.

The Working Group concluded that the 1999 stranding event was an unusual mortality event because the animals were stranding throughout their range, stranding rates had increased precipitously, animal behavior and body condition were different from those reported previously (emaciated), and animals were stranding in areas where such events had not been historically noted (behavioral change) (Gulland et al. 2005). The Working Group recommended increasing evaluations and examinations of carcasses, providing a small team to summarize the available information for the working group, and coordinating and exchanging information between the four countries in which the gray whale stock occurs (Mexico, the United States, Canada, and Russia) (Gulland et al. 2005).

After the 1999 mortality event was declared unusual, coordination between the stranding networks increased; two workshops were held in Mexico to enhance coordination (LaPax March 2000 and Guerrero Negro March 2001) (Gulland et al. 2005). Stranding detection effort varied significantly, both geographically and temporally; because of the high stranding report rates, an increased emphasis on timely reporting started in April 1999 and continued through 2002 to allow for real-time analysis of trends (Gulland et al. 2005). NMFS prepared a provisional report for the Working Group in 2000 (Norman et al. 2000), and preliminary findings were presented to the Scientific Committee of the IWC (Pérez-Cortés Moreno et al. 1999). In 2000, the number of stranded animals remained high, with 368 carcasses reported, representing a nine-fold increase from the 1995 to 1998 average (Gulland et al. 2005). At the annual Working Group meeting in March 2001, the Working Group recommended keeping the unusual mortality event open for monitoring, but when only 20 strandings had occurred by October 2001, they recommended closing the event (NMFS 2001b). Based on this information, NMFS closed the event (NMFS 2001b).

NMFS examined and synthesized stranding network information for 1999 and 2000 in Gulland et al. (2005). The authors observed that most of the strandings in 1999 and 2000 occurred in Mexican waters during the winter season. Researchers consistently surveyed stranding effort in the wintering lagoons of Mexico, and the effort in 1999 and 2000 was comparable with that of previous years, except that records of gray whales that stranded outside their normal winter range were obtained opportunistically (Gulland et al. 2005). Increases in all regions, except Oregon, were significant. Fairly consistent stranding detection and reporting in California, Oregon, and Washington (except for remote areas of the Olympic Peninsula) took place from 1995 to 2002. Effort in British Columbia was opportunistic, due to the complex coastline. Detection effort and geographic coverage in Alaska differed significantly from year to year, but dedicated surveys were conducted in some areas of the Alaska coast from 1999 to 2001 (Gulland et al. 2005).

Although each stranding was examined as thoroughly as was practical, only 3 (0.5 percent) of the 651 animals that stranded in 1999 and 2000 were examined thoroughly enough to determine the cause of death (including detection of pre-existing conditions). One whale was diagnosed with a viral infection not previously reported in stranded whales (equine encephalitis), one whale had an unusually intense infection of parasites normally associated with baleen whales, and one whale was intoxicated with domoic acid (Section 3.4.3.6.3, Harmful Algal Blooms). Researchers considered several factors as possible causes for the high number of gray whale strandings reported in 1999 and 2000. Factors include starvation, chemical contaminants (see Environmental Contaminants below), biotoxins (see Harmful Algal Blooms below), disease, parasites, fisheries interactions and ship strikes, variability in detection effort and reporting, and effects of winds and currents on carcass decomposition (Norman et al. 2000; Gulland et al. 2005). The emaciated condition of the stranded whales, combined with evidence of low lipid concentrations and organochlorines in the stranded animals (Krahn et al. 2001) and decreases in calf production in the population during the same time frame (Perryman et al. 2002), led many scientists to conclude that starvation was the most likely cause of mortality. Some of the animals that stranded were in good to fair nutritional condition, suggesting that not all of the strandings link logically to food resource limitation and starvation (Gulland et al. 2005).

The cause of such large-scale starvation remains unknown (Gulland et al. 2005). Some scientists think that the starvation was related to a climatically based decline in prey availability, especially related to the 1997 and 1998 El Nino events in the winter range and the Pacific Decadal Oscillation and Arctic Oscillation in the summer range (LeBouef et al. 2000; Moore et al. 2001; Moore et al. 2003). Section 3.4.3.3, Distribution and Habitat Use, discusses oceanic climatic events throughout the gray whale range. Perryman et al. (2002) also showed that seasonal changes in ice distribution in the Bering and Chukchi Seas might influence the duration of whale feeding. Because gray whales feed opportunistically on a broad suite of prey species throughout their range and move to alternate areas when the food runs out (Section 3.4.3.1.3, Feeding Ecology and Role in the Marine Ecosystem), these explanations seemed simplistic (Nerini 1984; Moore et al. 2001; Moore et al. 2003; Moore 2005; Moore et al. 2007). Others postulated that the starvation related to density-dependent population effects—animals approaching K experience heightened competition for food resources and decreased reproductive success (Section 3.4.3.4.5, Estimates of Carrying Capacity (K), OSP, and PBR). This explanation for the starvation is imperfect, given the suddenness of the demographic change and the relatively larger amounts of adult whales that stranded (Moore et al. 2001). Gulland et al. (2005) suggested that the starvation

was probably a result of both density dependence and environmental variability; populations of cetaceans that are at or near K probably are more vulnerable to environmental variability due to nutritional stress.

Recently, researchers investigating one of the main calving-breeding lagoons in Mexico have noted large numbers of whales that are "skinny" in appearance, suggesting malnourishment (Swartz et al. 2007; Urban-Ramirez and Swartz 2007; Urban-Ramirez et al. 2007). Photographic data collected during 2007 in Laguna San Ignacio indicated that 11 to 13 percent of the whales photographed exhibited obvious signs of malnutrition and/or disease, including noticeable depressions in the head region, sub-dermal protrusions of bony parts (e.g., the scapula), and concave rather than convex profiles to whale dorsal flank areas (Swartz et al. 2007). Urban-Ramirez and Swartz (2007) noted other studies where some "skinny" whales that were pregnant returned to their summer feeding areas with apparently healthy calves, suggesting that "skinniness" may not be a fatal condition but instead reflect "a tolerable reduction [in] nutritional resources." Researchers from NMFS and other institutions plan to continue photographing and monitoring the condition and health of gray whales as part of the Laguna San Ignacio Ecosystem Science Program (Urban-Ramirez et al. 2007).

Since the 1999 and 2000 stranding events, stranding levels have returned to the normal range, decreasing to 21 and 26 whales in 2001 and 2002, respectively. Most of the 2002 to 2005 dead whales that biologists examined died of unknown causes. In a few cases, biologists found evidence of ship strikes (propeller cuts) or entanglement in fishing gear (Gulland et al. 2005).

3.4.3.4.3 Calf Production Data

Gray whale calf production trends have been monitored using three methods. They are presented below:

1. Surveying for calves from shore and from aircraft in central California during the northward migration (Perryman et al. 2002; Perryman et al. 2004)
2. Counting calves from shore at Granite Canyon, California during the southward migration (Shelden et al. 1995; Shelden and Rugh 2001; Shelden et al. 2004)
3. Conducting aerial and vessel surveys for calves in the lagoons of Baja California (Urbán-Ramírez et al. 2003)

NMFS' Southwest Fisheries Science Center conducted shore-based sighting surveys of northward migrating whales from 1994 to 2005 to estimate the number of calves passing Piedras Blancas,

California (Perryman et al. 2002; Perryman 2005). Additional research included (1) aerial surveys to determine offshore distribution 1994 and 1995; and (2) concurrent replicate watches near the peak of each migration to estimate sightings missed by the standard watch team. Data from these surveys, including calf counts, corrected calf estimates (to account for periods not on watch and for calves missed), and calf production indices (calf estimate/total population estimate) are summarized in Table 3-7 and illustrated in Figure 3-9.

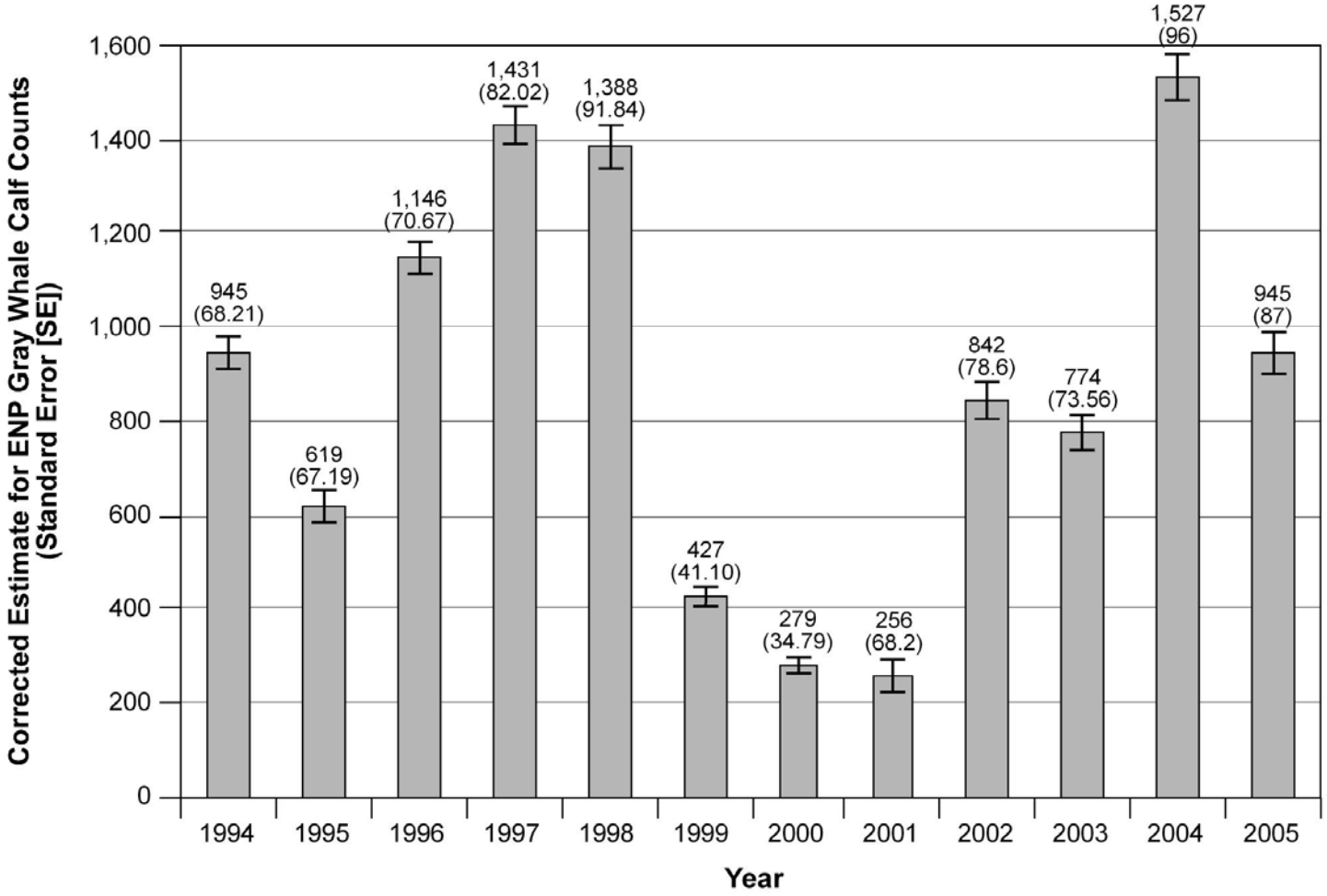


Figure 3-9. ENP Gray Whale Calf Counts in California, 1994-2005

The calf estimates and calf production index indicate that the gray whale population experienced a period of decreased production from 1999 to 2001. It is apparent that, although calf production dipped from 1999 to 2001, it seems to have recovered by 2002 (Table 3-8). Fluctuations in calf production over this period positively correlated with the length of time that primary feeding habitat was free of pack ice during the previous year (Perryman et al. 2002; Perryman et al. 2004). Additional evidence of changes in calf production comes from observations at the Mexican calving lagoons. Estimates of annual calf production in the lagoons (1997 to 2002) suggest a decrease in calf production from the 1997 high (910 calves) to a low of 286 calves in 1999, followed by a gradual increase to 670 calves in 2002 (Urbán-Ramírez et al. 2002). Production has returned to normal, and one of the highest recorded counts occurred in 2004.

3.4.3.4.4 Population Dynamics and Trends

The ENP gray whale population recovered from as low as 3,000 to 5,000 whales post exploitation to over 20,000 whales today (Rugh et al. 2005; Rugh et al. 2008). From 1968 to 1998, the gray whale population increased by about 2.6 percent per year (Rugh et al. 2005). However, the most recent estimates indicate substantial declines from the peak abundance in 1997/1998 (Table 3-8). NMML analyzed the 2000/2001 and 2001/2002 southbound count data to determine whether the population size had truly decreased or whether there was an inaccuracy in the abundance estimates.

TABLE 3-8. SUMMARY OF ENP GRAY WHALE CALF COUNTS IN CALIFORNIA, 1994 TO 2005

YEAR	CALF COUNTS[1]	CORRECTED ESTIMATE (STANDARD ERROR)	CALF PRODUCTION INDEX (%)
1994	325	945 (68.21)	4.0
1995	194	619 (67.19)	2.7
1996	407	1,146 (70.67)	5.1
1997	501	1,431 (82.02)	6.8
1998	440	1,388 (91.84)	5.0
1999	141	427 (41.10)	1.6
2000	96	279 (34.79)	1.0
2001	87	256 (68.2)	1.4
2002	302	842 (78.6)	4.8
2003	269	774 (73.56)	4.1
2004	456	1,527 (96)	8.1
2005	345	945 (87)	5.0

1 Calf counts are corrected calf estimates and calf production index (calf estimate/total population estimate) for northbound migrating gray whale calves. Note: With the exception of data from 1994 to 2001, these estimates are preliminary data, and they should not be cited without the permission of W. Perryman, NMFS' Southwest Fisheries Science Center.

N.B.: The calf estimates and calf production index indicate that the gray whale population experienced a period of decreased production from 1999 to 2001.

Source: Perryman et al. 2002; Perryman 2005

The study indicated that visibility, offshore distribution of whales, and changes in observer performance were not likely explanations for the decline (Rugh et al. 2005). Rugh et al. (2005) proposed that the low counts in 2000/2001 and 2001/2002 could be due to a true drop in population size, and/or a change in the proportion of the southward migration that moves as far south as Granite Canyon (Section 3.4.3.1.4, Seasonal Migrations, Fall/Winter – Southward Migration). The number of mortalities recorded in the 1999 and 2000 stranding events did not exceed expected levels of natural mortality (Moore et al. 2000), but the stranding events are evidence of a true decline. The 1999 and 2000 unusual mortality events, and their possible cause, are discussed above in Stranding Data (with links to the Calf Production Data section and information about body condition). Current data indicate that the gray whale population is at or near its K; estimates of K and PBR are reported below.

3.4.3.4.5 Estimates of Carrying Capacity (K), OSP, and PBR

In 1994, Wade reported values of K and MNPL for the ENP gray whale stock based on then-current abundance estimates reported between 1967/1968 and 1993/1994. He estimated that the ENP gray whale population was at 51 to 97 percent of its K and that the rate of net production at the MNPL was 0.033 (95 percent confidence interval from 0.023 to 0.044) (Wade 1994). The IWC Scientific Committee discussed Wade's (1994) analysis at the 1994 IWC Scientific Committee meeting and proposed that the analysis may have been unduly influenced by the low abundance estimates in the 1992/1993 census, which likely caused the variance of the abundance estimate to be underestimated (i.e., negatively biased). Therefore, Wade (2002) incorporated an additional variance factor when he added the 1995/1996 census data to the K and MNPL analysis; the factor accounted for unexplained variation in the abundance estimate time series data. He also used an age and sex structured model. Later, Wade and Perryman (2002) incorporated the census data from 1997/1998, 2000/2001, and 2001/2002, as well as the calf production data from the northward migration (1994 to 2001), into a more complete analysis to increase the precision of the K estimate. They used a generalized logistic model, which included the added variance of Wade (2002) in the analysis. Based on these data, Wade and Perryman (2002) estimated that the K was 22,000 whales (confidence of 95 percent and confidence intervals ranging from 19,000 to 35,000 whales), and they concluded that the population was at or near carrying capacity. The most accurate abundance estimates for the ENP gray whale population between 1967/1968 and 2006/2007 (i.e., added nighttime correction factors, etc.) come from Rugh et al. (2008) who recently estimated a K of 23,686 whales (Figure 3-10).

In a recent stock assessment (Angliss and Outlaw 2008) NMFS reported that the assessments by Wade (2002) and Wade and Perryman (2002) support a conclusion that the Eastern North Pacific gray whale stock is within the OSP level (i.e., there is essentially zero probability that the population is below the stock's maximum net population level). Similar results are reported in an assessment by Punt et al. (2004). The Scientific Committee of the International Whaling Commission reviewed both assessments and agreed that management advice could be formulated from the results. Both assessments indicated that the population was above the maximum sustainable yield level, and was likely close to or above its unexploited equilibrium level (IWC 2002).

Even though the stock is within OSP, abundance will rise and fall as the population adjusts to natural and human-caused factors affecting the carrying capacity of the environment (Rugh et al. 2005, Rugh et al. 2008). In fact, it is expected that a population close to or at the carrying capacity of the environment will be more susceptible to fluctuations in the environment (Moore et al. 2001). The recent correlation between gray whale calf production and environmental conditions in the Bering Sea (Perryman et al. 2002) may be an example of this. For this reason, it can be predicted that the population will undergo fluctuations in the future that may be similar to the two-year event that occurred in 1999-2000 (Norman et al. 2000; Pérez-Cortés et al. 1999; Brownell et al. 2001; Gulland et al. 2005).

For all marine mammal stocks, NMFS prepares stock assessment reports, which include a calculation of the PBR for the stock and an assessment of whether all human-caused mortality exceeds PBR. If total average mortality remains below PBR, a stock at OSP will remain there, and any stock below OSP will continue to grow and will achieve OSP (Wade and Angliss 1997; Wade 1998). As long as the mortality average over the three-year period is less than PBR, it is considered sustainable within the framework of the PBR management strategy (Wade and Angliss 1997). Angliss and Outlaw (2005) reported that PBR for gray whales is 417 whales based on a minimum population size (N_{min}) of 17,752 whales derived from the mean of the 2000/2001 and 2001/2002 population estimates and the estimated R_{max} (maximum theoretical or estimated net productivity rate of the stock at a small population size of 0.047 multiplied by 0.5, or 0.0235) and a recovery factor of 1.0 (calculated thus: 17,752 x 0.0235 x 1.0 = 417). The annual averaged human-caused mortality and serious injury between 1999 and 2003 was 130.4 gray whales, which is considerably below the current PBR (417 whales) (Angliss and Outlaw 2005).

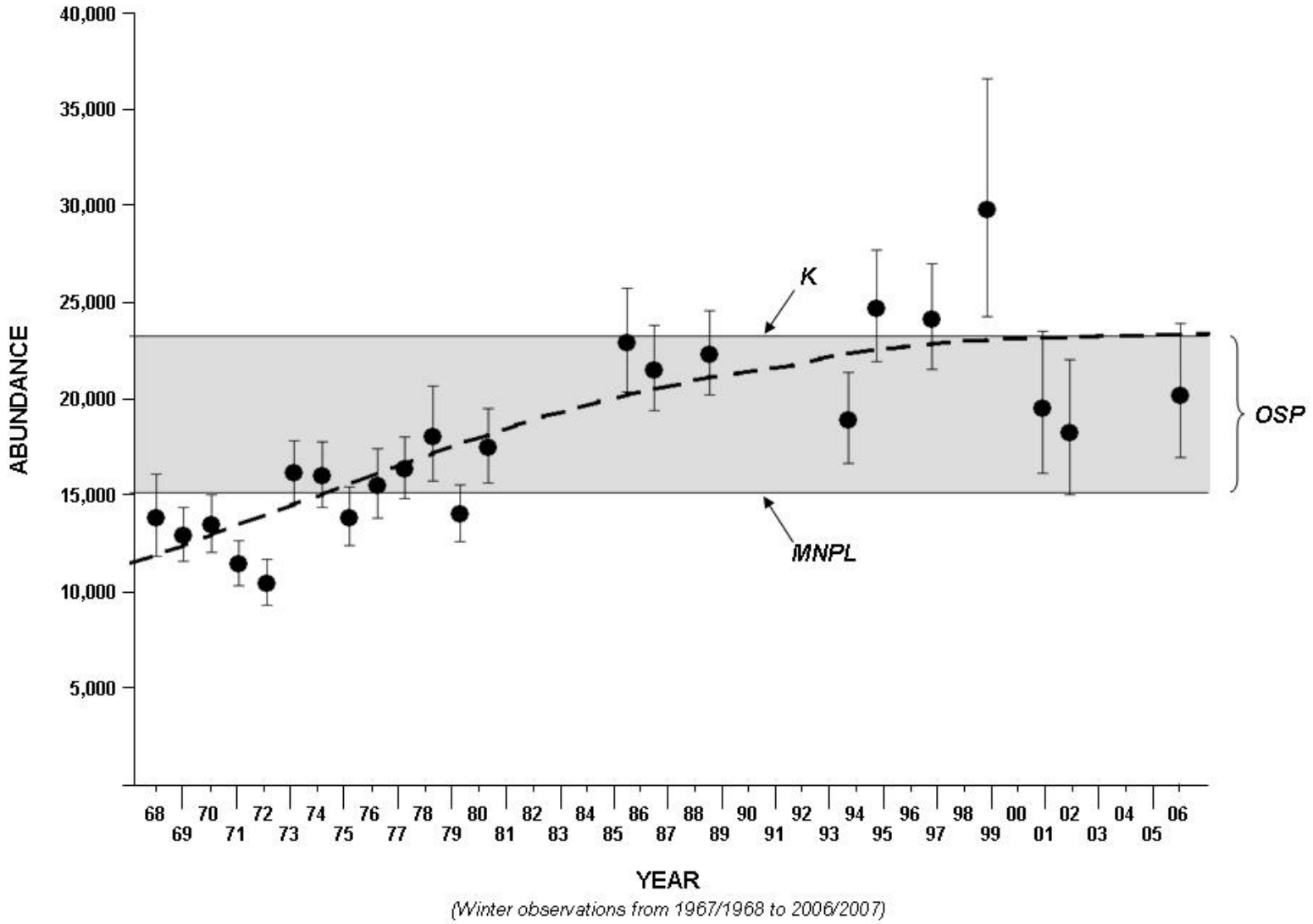


Figure 3-10. Trajectory of ENP Gray Whale Population Size

The average includes mortality associated with the Chukotka Native aboriginal harvest (122 whales), commercial fisheries (7 whales), and ship strikes (1 whale). The mortality is also considerably lower than the 463 whales per year that the IWC Scientific Committee considered a sustainable take for at least the medium term (approximately 30 years) when it conducted the last full stock assessment of ENP gray whales in 2002 (IWC 2003). The Scientific Committee concluded that that level of take is "likely to allow the population to remain above maximum sustained yield level" (IWC 2003).

3.4.3.5 Welfare of Individual Whales

The MMPA and WCA provisions discussed in Section 3.4.2, Regulatory Overview, describe considerations relevant to the welfare of individual whales in an aboriginal subsistence hunt. Any permit issued by NMFS under the MMPA must include a finding that the taking is humane, defined as inflicting the least possible degree of pain and suffering practicable (16 USC 1362(4); 50 CFR 216.3). The IWC has focused on reducing the length of time to death of a whale (i.e., reducing the amount of time between the strike and the death of a whale) to improve the humaneness of whaling (IWC 2004c; IWC 2007a). The IWC definition of humane killing is "[d]eath brought about without pain, stress, or stress, or distress perceptible to the animal. . . . Any humane killing technique aims first to render an animal insensitive to pain as swiftly as technically possible. In practice this cannot be instantaneous in a scientific sense" (IWC Resolution 2004-3). Aboriginal subsistence whalers are urged to do everything possible to reduce any avoidable suffering caused to whales in hunts (IWC Resolution 1997-1), and governments are encouraged to provide appropriate technical assistance (IWC Resolution 1999-1). The IWC criteria for determining the time to death and insensibility in hunted whales in the field are as follows: (1) relaxed lower jaw; (2) no flipper movement; or (3) sinking without active movement.

Pain has been defined as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage" (International Association for the Study of Pain 1979). Researchers have proposed assessing pain in animals by measuring physiological changes (such as pulse rate, blood pressure, or blood cortisol levels, etc.) and behavioral indicators (such as vocalization, avoidance, shaking, etc.) (Keefe et al. 1991).

Any hunting under the WCA must not be conducted in a wasteful manner. Two issues relevant to humaneness are also relevant to wastefulness: killing only as many whales as are needed for subsistence and subsistence uses (50 CFR 216.3), and ensuring that hunters quickly kill and land struck whales, rather than striking and losing them. The concept of waste includes issues beyond

welfare of individual whales, such as ensuring that hunters quickly tow killed whales to shore and butcher them rapidly to avoid spoilage. Factors relevant to the MMPA and WCA considerations include the response of individual whales to pursuit and the response of individual whales to the hunter's strike. These responses will be affected by the method of the hunt, the behavior of the whale species hunted, the behavior of the people associated with the hunt (including hunters, protesters, media, and law enforcement), and the prevailing weather and sea conditions.

3.4.3.5.1 Review of Hunting Methods

The method of the hunt includes total whaling operations and practices, including vessels and weapons. Primary weapons are those used initially to strike and secure the whale. Some primary weapons are also capable of killing the whale. If the primary weapon does not also kill the whale, a secondary weapon is used. The secondary weapon may be the same as the primary weapon, but used additional times. Hunting weapons are also discussed in conjunction with public safety in Section 3.15.3.5.2, Weapons Associated with the Hunt. This section discusses weapons in conjunction with the welfare of individual whales.

The Makah Tribe's proposed action includes hunting whales using a traditional wood canoe (with harpooner) accompanied by a motorized chase boat (with a rifleman and an observer). Because the speed of a swimming whale exceeds that of a paddled canoe, the Makah whalers would most likely position the canoe in the path of a swimming whale at a spot where the whale is expected to surface. After a Makah hunter struck a whale with the hand-thrown toggle point harpoon attached to a line and floats, a rifleman in the chase vessel would kill the whale by using a .50 caliber rifle aimed at the central nervous system (Section 3.15.3.5.2, Weapons Associated with the Hunt).

This EIS examines alternative weapons for hunting gray whales by Makah subsistence hunters. These include the use of a hand-thrown darting gun as the primary weapon for striking whales and explosive projectiles delivered by either a second darting gun or a shoulder gun as the secondary weapon for killing whales. Both the weapons proposed by the Makah Tribe and the alternative weapons examined are used in other subsistence whale hunts, as well as in commercial hunts. Information from these hunts may be relevant to assessing the impacts on the welfare of individual whales of the proposed weapons compared to alternative weapons.

Alaska Eskimos hunt bowhead whales in the Bering, Chukchi, and Beaufort Seas using hand-thrown darting guns as their primary weapons to strike whales, securing them with lines and floats. The darting gun delivers an explosive grenade, which may also kill the whale. The

secondary weapon in this hunt is also an explosive grenade, delivered either by another hand-thrown darting gun or a shoulder gun. The darting gun can deliver either a black powder or a penthrite projectile. For the shoulder gun, only black powder grenade technology is currently available (Section 3.15.3.5.2, Weapons Associated with the Hunt). The Alaska Eskimo hunters have conducted hunting trials with penthrite grenades (Øen 1995) but recently reported difficulty in obtaining necessary parts (Alaska Eskimo Whaling Commission 2006; IWC 2007a) (Section 3.15.3.5.2, Weapons Associated with the Hunt). The black powder grenade remains the main weapon used (Alaska Eskimo Whaling Commission 2006).

Aboriginal subsistence hunters (Chukotka Natives) in Russia hunt gray whales using hand-thrown toggle-point harpoons to strike whales and either smaller caliber rifles (for whales up to 10 meters [32.8 feet]), hand-thrown darting guns (for whales over 10 meters [32.8 feet]), or both to kill whales (IWC 2007a). [The use of larger caliber weapons by civilian personnel was prohibited in the Russian Federation under national legislation (IWC 1997).] Chukotka Natives have experience with penthrite grenades, but their use is not widespread.

Aboriginal subsistence hunters in West Greenland use deck-mounted harpoon cannons that also deliver penthrite grenades as the weapon both for striking and killing fin whales (Greenland Home Rule Government and Greenland Hunter's Organization 2006; IWC 2007a). They also use this weapon for striking minke whales. If the whale is not killed by the first strike, they use a high caliber rifle as the killing weapon (either a 7.62 mm with full metal jacket bullets, or a .375 with round-nosed bullets). In east and west Greenland north of Disko Bay, a collective subsistence hunt occurs for minke whales in which the hunters use hand-thrown harpoons (without explosive charges) to strike the whales and a 7.62 or .375 caliber rifle as the killing weapon.

Commercial hunters in Norway use deck-mounted harpoon guns that also deliver penthrite grenades as the primary weapon for striking minke whales (Øen 2006; IWC 2007a). If the penthrite grenade does not kill the whales, hunters use rifles as a backup (secondary) killing method, including 9.3, .375, and .458 caliber rifles with full metal jacket or round nosed ammunition. The deck-mounted cannons used in the Greenland and Norwegian hunts are not comparable to the two methods examined in this EIS (the darting gun and shoulder gun). Information about the use of rifles as secondary killing weapons in these hunts, however, may be relevant to analyzing impacts of the Makah Tribe's proposed killing weapon.

3.4.3.5.2 Whale Response to Being Pursued

The Makah Tribe's proposed action includes approaching and pursuing whales using a combination of traditional and modern methods, including the use of one or two non-motorized canoes accompanied by one or more chase boats with an outboard motor (Section 2.3.3.2.5, Overview of Proposed Hunting Method). This EIS does not examine alternative vessels to be used in a hunt (Section 2.4.5, Employ Different Hunting Methods). Based on its experience during the 1999 to 2000 hunts, the Tribe's proposal estimates there could be approximately 10 approaches and 4 unsuccessful harpoon attempts for every whale struck. An unsuccessful harpoon attempt means the whale would not be struck (that is, would not have a harpoon embedded and would not show evidence of potentially lethal injury). The Tribe also estimates that the number of whales subject to approaches with no harpoon attempts in any calendar year would not exceed 140.

At the 2003 IWC Workshop on Whale Killing Methods, the United Kingdom presented a paper raising concerns that whales experience stress as a result of being pursued and can exhibit stress-related symptoms such as impaired immune defense, reduced fecundity, failure to grow, and a disease called exertional myopathy (IWC 2004c). No data were presented to support this contention, nor are there data from other activities that involve pursuit (such as whale-watching) that would quantify gray whale response to pursuit. The response of gray whales to pursuit from whale-watching vessels (and vessel presence in general, such as those accompanying any potential whale hunt) is discussed in Section 3.4.3.6.6, Vessel Interactions. No data are available specifically regarding the response of gray whales to non-motorized (human-powered) vessels, but non-motorized vessels generally are regulated, along with motorized vessels, in whale-watching regulations globally (Carlson 2004). .

3.4.3.5.3 Whale Response to Being Struck

Under the Makah proposal, the harpooner in the canoe would strike the whale with a stainless steel toggle-point harpoon with a line and floats attached (for the definition of and evidence for a strike, see Section 2.3.3.2.2, Numbers and Status of Whales Harvested [Five-Year and Annual]). The harpoon point is intended to penetrate the whale's skin (blubber), toggle open, and secure the whale. The harpoon can penetrate and successfully secure the whale in numerous locations on the whale's body, although harpoons also dislodge from whales. Whether the harpoon holds or dislodges depends on, among other factors, the force at impact, the angle of the strike, and the surface characteristics (hard underlying connective tissue, barnacles, etc.). Hunters will often use additional harpoons to attach floats to keep the whale afloat. During the 1999 hunt, Makah

whalers struck the whale with three harpoons, the third of which was thrown moments after the rifle shot that rendered the whale motionless (Gosho 1999). Whale responses to being struck with a toggle-point harpoon may include increased swimming speed, diving (Øen 1995), thrashing, and ramming boats (Henderson 1984). A harpoon damages only the organ it hits, and its impact is likely too low to damage the central nervous system (Knudsen and Øen 2003); thus, it may not immediately cause the whale's death. Whales may subsequently die, however, due to a harpoon strike (see Angliss and Lodge 2002).

This EIS examines the use of a hand-thrown darting gun as an alternative method of striking and securing whales (Section 3.15.3.5.2, Weapons Associated with the Hunt). The darting gun delivers an explosive grenade, which can contain either black powder or penthrite as the explosive. The grenade has a time-delay fuse and is intended to detonate after penetrating the whale. Detonation of the grenade releases fragments, or shrapnel, causing hemorrhaging and damage to internal organs (O'Hara et al. 1999). The blast from a black powder grenade also emits shock waves that can cause concussion-related injuries to the brain or internal organs (O'Hara et al. 1999). The blast from a penthrite grenade emits a much higher energy shock wave, which is more likely to cause concussion-related injuries further from the blast site, including injuries to the whale's brain or internal organs. These injuries may cause insensibility or immediate death (Øen 1995; O'Hara et al. 1999). The blast injury from either type of grenade works independent of hemorrhage to induce insensibility and/or lethal injuries.

A grenade delivered by a hand-thrown darting gun may kill the whale, but a secondary method of killing is required more often (Øen 1995; O'Hara et al. 1999). Hand-thrown darting guns are aimed at the cervical (neck) and thoracic (chest) region, rather than the head, as the skull is not easily penetrated by the grenade (Butterworth and Brakes 2006; IWC 2007a). Whale responses to being struck with a grenade from a hand-thrown darting gun include death, insensibility, and stunning (Knudsen and Øen 2003), as well as diving (Øen 1995), thrashing, and ramming boats (Bockstoce 1986).

Little data are available for the proportion of whales killed by the first strike from a darting gun. Data regarding the number of bullets or harpoons used to kill whales do not necessarily indicate the proportion of whales killed by the first strike as hunters are encouraged to re-shoot whales if there is any doubt the whale is still alive (Knudsen 2005; IWC 2007a). In the Alaska Eskimo bowhead whale hunt, Øen (1995) reported that the shoulder gun is used almost routinely after the darting gun has been fired. The Alaska data reported to the IWC do not include the number of

whales killed by the first strike, possibly because of this routine firing of additional grenades and because of the difficulty in determining whether a struck whale is dead (IWC 2004c). Øen (1995) conducted field studies with penthrite grenades in the Alaska bowhead hunt in 1988 and reported that seven of the eight whales struck with penthrite grenades died from the first grenade thrown; the eighth whale required three grenades. The Russian data reported to the IWC also do not include the proportion of whales killed by the first strike from a darting gun. The data from the Greenland and Norwegian hunts, which use large vessels and deck-mounted harpoon guns and cannons, cannot be readily compared to the Makah (or Alaska Eskimo) hunts, which use small vessels and light weapons.

3.4.3.5.4 Method of Killing and Time to Death

Rifle as the Killing Weapon

Hunters killing a whale with a rifle aim for the whale's central nervous system (especially the brain), with the intent of causing immediate death or unconsciousness (Knudsen and Øen 2003). The accuracy of the first shot is important for the following reason:

> [H]unting with rifle or shotguns involves an inevitable risk of only wounding the animal, as the projectiles are fired from a distance and the animals often present a moving target. The area of impact of the first round will always be decisive with regard to how quickly the animal collapses and dies (Knudsen 2005).

The Makah propose to use a .50 caliber rifle to kill any whale struck and secured with the toggle-point harpoon. In 1999, two shots from the .577 caliber rifle used by the Tribe produced a time to death of eight minutes from the time the harpoon struck the whale until the second rifle shot rendered the whale motionless (Gosho 1999). During the unauthorized hunt in 2007, at least 16 shots struck the whale, but it is unknown what caliber rifle was used. Three separate reports (Ingling 1999; Beattie 2001; Graves et al. 2004) examined past Makah proposals and concluded that a .50 caliber rifle (or greater) is the appropriate caliber of rifle to use, after testing it alongside smaller caliber weapons. Ingling (1999) concluded that for large game, larger bullets are more effective in producing penetration deep enough to reach a vital organ or disabling site in the animal and, thus, require more power (i.e., heavier guns). In addition, rifles that are at least .50 caliber provide a better margin of error in targeting compared to smaller caliber rifles. Graves et al. (2004) added that "small caliber rifles simply will not do the job" of quickly dispatching whales with large size and thick bones, and he concluded that the .50 caliber weapon was the best choice. Graves et al. (2004) and Graves and Hazelton (2004) rejected the .577 rifle used by the

Makah whalers in the 1999 hunt due to difficulty of obtaining ammunition. The necropsy performed after the hunt indicated that the first shot that entered the whale hit the skull and stunned it, while the second shot that entered the whale penetrated its brain and likely killed it instantly (Gosho 1999; IWC 2004c). This EIS does not examine the use of a different caliber rifle as the killing weapon (Section 2.4.5.2, Kill Whales with Smaller Caliber Rifles, explains why this alternative was considered but eliminated from detailed study).

Chukotka Natives use smaller caliber rifles, as well as hand-thrown darting guns, to kill whales. Russia reported that during the 2002 harvest, approximately 28 percent of whales struck were killed with rifles. Hunters used from 3 to 100 bullets per whale and an average of 54 bullets per whale killed (IWC 2004c). Mean time to death for both the rifle and darting gun was 32 minutes for gray whales, with a maximum time to death of 56 minutes (IWC 2004c).

In the Greenland subsistence hunt using deck mounted cannons with a rifle as a back-up killing method, time to death using a rifle is not reported separately. In the Greenland collective minke whale hunt where whales are struck with hand-thrown harpoons and killed with rifles, the number of bullets used is not reported. The average time to death reported for 44 whales killed in the 2005 hunt was 21 minutes, with a maximum time to death of 90 minutes (Greenland Home Rule Government and Greenland Hunter's Organization 2006).

In the Norwegian commercial hunt, Knudsen and Øen (2003) concluded that the .357 and .458 caliber rifles and ammunition used to kill minke whales "are highly capable of causing permanent brain damage of sufficient severity to account for an instantaneous or rapid loss of consciousness." According to Knudsen (2005), "[a] whale that is shot in or near the brain with the rifle will also normally turn over immediately and the flippers and jaw will relax." In the Norwegian hunt almost all whales (95.5 percent) are killed with the first strike by a penthrite grenade (Øen 2006), and the time to death is not separately reported for whales killed with bullets. For whales killed with a rifle after the grenade failed to kill the whale, the mean number of bullets used was 2.6 (in the 1998/99 season), 2.2 (in the 2000/2001 season), and 2.2 (in the 2001/2002 season) (Knudsen 2005).

Explosive Grenade as the Killing Weapon

In addition to the Makah Tribe's proposal to kill whales using a .50 caliber rifle, this EIS examines use of an explosive projectile to kill the whale, delivered by either a hand-thrown darting gun or a shoulder gun (Section 2.3.3.2.5, Overview of Proposed Hunting Method). The cervical and cranial thoracic regions of a whale are the critical target areas for explosive

projectiles. Penetration into these regions results in detonation next to the skull and vertebrae, or within the thoracic cavity (O'Hara et al. 1999). How effective the grenade is in killing the whale quickly will depend on where the whale is hit and whether the projectile penetrates to a suitable depth (O'Hara et al. 1999).

Black powder projectiles burn slowly, and they kill whales mostly via secondary blast injuries. Fragments of shrapnel cause tearing of tissues and hemorrhage that can result in the animal's death (O'Hara et al. 1999). Blast trauma to the brain or central nervous system can also cause insensibility or death (O'Hara et al. 1999). Penthrite projectiles burn quickly; they kill whales mostly via primary blast waves, but they also cause extensive local tissue damage that can result in significant hemorrhage. These blast waves cause rapid expansion of gases, which propagates pulsating shock and pressure waves, resulting in concussion-induced brain injury and/or air emboli that travel from gas-containing organs to block blood vessels in the heart and brain, leading to rapid death (O'Hara et al. 1999; Øen 2000). If the grenade does not hit a target area, it has a higher probability of killing the whale than a black powder grenade because it can cause damage farther from the point of detonation (O'Hara et al. 1999; Smith 2007).

In 1988 through 1992, Øen (1995) conducted field trials using penthrite projectiles in the Alaska Eskimo bowhead hunts, comparing them to black powder projectiles used from 1984 to 1986. Data for black powder grenades were the most reliable for 1988 because the information was systematically collected. Results showed reduced time to death for penthrite as compared to black powder (Øen 1995). In 1988, five of the eight bowhead whales (63 percent) died in less than 5 minutes (Øen 1995). The grenades were modified subsequent to the initial penthrite field trials, and data in 1997 and 1998 indicated that time to death was 50 percent of the time to death for black powder grenades (O'Hara et al. 1999). At the 2006 Whale Killing Method Workshop, the Alaska Eskimo Whaling Commission reported that, when placed near the blow hole or within the thorax, the penthrite projectiles appear to give a more rapid time to death than traditional black powder (Alaska Eskimo Whaling Commission 2006; IWC 2007a). The chairperson of the Alaska Eskimo Whaling Commission weapons improvement program has also reported a general preference among Alaska Natives for penthrite, rather than black powder grenades, because "with black powder, the meat has a gas taste" (Associated Press 2005).

The Chukotka Natives use both rifles and darting guns to kill whales. They have used penthrite grenades, but they primarily use black powder grenades. At the IWC Annual Meeting in 2003, the Russian Federation reported that approximately 72 percent of whales killed were killed using the

darting gun. Mean time to death for gray whales using both methods was 43 minutes, with a maximum of 220 minutes. In the 2002 season, hunters used an average of 2.7 darting gun projectiles per whale killed (IWC 2004c).

3.4.3.5.5 Proportion of Whales Struck and Lost

During the Makah Tribe's 1999 and 2000 hunts, there were no whales struck and lost; the only whale struck was landed (Gosho 1999; Gearin and Gosho 2000). The Alaska Eskimo Whaling Commission reported to the 2006 Workshop on Whale Killing Methods that from 1996 through 2005 the average proportion of bowhead whales struck and landed in the Alaska Eskimo hunt was 80 percent (Alaska Eskimo Whaling Commission 2006; IWC 2007a). Most of the whales were hunted using hand-thrown darting guns and shoulder guns with black powder grenades. During a field trial of penthrite grenades in 1988, Øen (1995) reported that seven of the eight bowhead whales (88 percent) struck with the penthrite projectile were landed. For the 2003/2004 hunting season, Russia reported that the Chukotka Natives harvested 111 gray whales, including one struck and lost during towing (IWC 2005c). In 2005, the Chukotka Natives harvested 115 gray whales with 9 struck and lost (IWC 2005b). Also in 2005, no struck and lost whales were reported for the Greenland minke whale hunt using a harpoon, but 3 out of 48 minke whales were struck and lost during the Greenland collective hunt, and 2 of the 3 were lost due to adverse weather conditions (Greenland Home Rule Government and Greenland Hunter's Organization 2006).

3.4.3.5.6 Training and Weapons Improvement

The Makah's proposed action includes a training and certification program. It also proposes that the Tribe conduct research and development to refine hunting methods further and revise tribal regulations periodically to improve the safety, effectiveness, and humaneness of the gray whale hunt. This provision is similar to the Alaska Eskimo Whaling Commission's Weapons Improvement Program, which has worked since the late 1980s to develop newer technologies (including use of the penthrite grenade) to increase hunting safety and efficiency. Hunter training would likely reduce time to death and decrease the proportion of struck and lost whales (Alaska Eskimo Whaling Commission 2006; Greenland Home Rule Government and Greenland Hunter's Organization 2006).

3.4.3.5.7 Weather and Sea Conditions

Weather and sea conditions in the project area as they relate to safety are discussed in detail in Public Safety, Section 3.15.3.2, Weather and Sea Conditions. Weather and sea conditions,

including motion of the vessel, also may have implications for harpooner or rifleman accuracy, which could affect a whale's time to death and the proportion of whales struck and lost. The efficiency of the hunt could also be affected by these conditions if they improve the ability of the Tribe to successfully tow and land a killed whale. The Makah proposal includes the use of a motor-powered vessel to position the rifleman and to tow a killed whale to shore, and it includes maintaining a 30-foot maximum distance from the rifleman to the whale with minimum visibility of 500 yards.

3.4.3.5.8 Behavior of People Associated with the Hunt

The behavior of people associated with the Makah hunt, including protesters, is also discussed in detail in Public Safety, Section 3.15.3.4, Behavior of People Associated with the Hunt. Based on the 1999 and 2000 protester interventions on the water, and the continuing degree of public and media interest in this issue, vessels and people may interfere with whaling activities, increase the time to death, and increase the potential for not successfully landing a whale struck by Makah hunters.

3.4.3.6 Known and Potential Anthropogenic Impacts

Particularly along the coast of North America, gray whales are exposed to intense human activity. Moor and Clarke (2002) concluded that "[t]he recovery of the gray whale population in the face of long-term exposure to human activities along the North American coast suggests a strong degree of tolerance to such activities." The recovery of the ENP gray whale stock in the face of aboriginal subsistence hunting by Chukotka Natives similarly suggests a tolerance to such activity. The following discussion examines some of the more prominent activities affecting gray whales.

3.4.3.6.1 Aboriginal Subsistence Whaling

ENP gray whales have been hunted by various aboriginal groups for hundreds to thousands of years. In the whales' northern feeding areas, five groups of aborigines hunted along the Chukotkan Peninsula of northeastern Asia in the western Bering, northeastern Okhotsk, and western Chukchi Seas, including the Asiatic (Siberian) Eskimos, Chukchi, Koryaks, Kereks, and Itle'mens (Kamchadals) (Krupnik 1984). The (Alaska) Eskimos also hunted gray whales along the northwestern shores of North America in the eastern Bering and Chukchi Seas for thousands of years (O'Leary 1984). Along the whales' migratory corridors and in the more southern feeding areas south of the Alaskan Peninsula, several Indian tribes between the Aleutian Islands and California hunted gray whales and/or used drift whales for subsistence as a part of their cultural

and religious traditions, including the Aleuts, Koniag, Chugash, Tlingit, Haida, Tsimshian, Nootka, Makah (including Ozette), Quileute, Klallam, and Chumash (O'Leary 1984). Some of these tribes hunted during the American and industrial commercial whaling eras. The last Makah hunts in this timeframe were recorded in the 1920s.

Between 1948 and 1955, subsistence hunters in the Chukotkan Region took 241 total gray whales, averaging 30 whales annually (Zimushko and Ivanshin 1980). From 1956 to 1968, the catches in that region increased to an average 158 animals annually (Zimushko and Ivanshin 1980). From 1968 to 1977, the Soviet Ministry of Fisheries imposed catch limits: 140 to 150 whales from 1968 to 1972 and 200 whales annually from 1972 to 1977 (Zimushko and Ivanshin 1980). The IWC established aboriginal subsistence whaling catch limits for the ENP gray whale stock starting in 1978 (Table 3-9).

Gray whale catches the United States reported to the IWC from 1985 to 2005 included the one whale harvested by the Makah Tribe in 1999[8]. Although Alaska natives hunted whales prior to 1989, the United States had not presented a proposal to the IWC for this hunt, nor had NMFS published a quota under the WCA.

[8] The one whale illegally hunted by tribal members in 2007 will be reported to the IWC in 2008.

TABLE 3-9. ABORIGINAL SUBSISTENCE WHALING CATCH DATA FOR ENP GRAY WHALES REPORTED TO THE IWC

YEAR	TOTAL FIVE-YEAR ALLOCATION BY IWC	TOTAL ANNUAL ALLOCATION BY IWC	TOTAL TAKES	RUSSIAN FEDERATION (CHUKOTKANS)	UNITED STATES (ALASKA ESKIMOS)	UNITED STATES (MAKAH)
1978	Get	179	184	182	2	0
1979		179	182	178	4	0
1980		179	181	178	2	0
1981		179	135	135	0	0
1982		179	169	165	4	0
1983	Get	get	171	169	2	0
1984			168	168	0	0
1985			170	169	1	0
1986			171	169	2	0
1987			158	158	0	0
1988	Get	get	151	150	1	0
1989			180	179	1	0
1990			162	162	0	0
1991			169	169	0	0
1992			0	0	0	0
1993	Get	get	0	0	0	0
1994			44	44	0	0
1995			92	90	2	0
1996			43	43	0	0
1997			79	79	0	0
1998	Get	get	125	125	0	0
1999			124	123	0	1
2000			115	115	0	0
2001			112	112	0	0
2002			131	131	0	0
2003	620 (to Russian Federation and United States)	140	128	128	0	0
2004		140	111	111	0	0
2005		140	124	124	0	0
2006		140	NA	NA	0	0

Source: IWC 1980 for catch data from 1978, IWC 1987 for catch data from 1984

3.4.3.6.2 Environmental Contaminants

Environmental contaminants that enter the marine environment through atmospheric, ocean current, and terrestrial transport originate from a variety of urban and rural anthropogenic sources, including agricultural use of pesticides, industrial disposal of manufacturing or pharmaceutical by-products, industrial processing or burning of fossil fuels, and municipal discharge or runoff associated with landfills, wastewater treatment plants, and miles of streets and roads. Marine ecosystems in the northeastern Pacific receive pollutants from a variety of local,

regional, and international sources (Grant and Ross 2002; EVS Environmental Consultants 2003; Garrett 2004).

These chemicals and compounds include organochlorines (e.g., DDT, PCB, dioxins, and furans), heavy metals (e.g., copper, mercury, and lead), and newly emerging chemicals (i.e., those recently discovered, such as flame retardants), that may have direct lethal effects on individual animals or insidious effects on animal populations through impaired reproductive, metabolic, and immune functions (O'Hara and O'Shea 2005). Bioaccumulation through trophic transfer in the marine food chain allows relatively high concentrations of these compounds to build up in top-level marine predators, such as marine mammals (O'Shea 1999). Gray whales, in particular, may ingest these environmental contaminants when they bottom-feed in areas where the sediment and benthic prey are contaminated.

See Section 3.16.3.2, Environmental Contaminants in Gray Whales, for descriptions of concentrations of organochlorines in gray whale tissues; the descriptions are synthesized from various studies. Many organochlorines are highly fat-soluble and have poor water solubility, which allows them to accumulate in the fatty tissues of animals, where most storage occurs (O'Shea 1999; Reijnders and Aguilar 2002). Some are highly persistent in the environment and resistant to metabolic degradation. Pinnipeds and porpoises carry far greater amounts of PCBs and DDTs than baleen whales and fish, however, because of their higher positions in food chains (O'Shea and Aguilar 2001; Reijnders and Aguilar 2002).

Section 3.16.3.2 also addresses concentrations of heavy metals (including mercury, lead, and copper, among others) in gray whale tissues, synthesized from various studies. The three elements usually considered of greatest concern to cetaceans are mercury, cadmium, and lead (O'Shea 1999). Mercury, cadmium, and other metals accumulate primarily in the liver and kidneys, whereas lead concentrates mostly in bones (Reijnders and Aguilar 2002). Concentrations of most metals tend to increase throughout an animal's life. Most metals are stored in fatty tissues. There are, however, organic forms of metals, such as methylmercury, that accumulate in the lipids of prey species. Many marine mammal species can tolerate high amounts of metals or detoxify them (Reijnders and Aguilar 2002). Published accounts of metal-caused pathology are scarce (O'Shea 1999).

In the 1999 and 2000 mass stranding events, chemical contaminants were a possible factor contributing to the increased mortality (Gulland et al. 2005). Overall, however, no contaminant found would be the proximate cause for acute mortality of the observed magnitude

(Gulland et al. 2005). The mean concentrations of organochlorines in the blubber of gray whales stranded in 1999 were well below levels observed in apparently healthy gray whales harvested in Russia (Tilbury et al. 2002). Also, lower levels of total mercury and methylmercury were reported in the muscle, kidney, and liver tissues of four gray whales that stranded in the Gulf of California in 1999 than were reported for other marine mammals, though sampling differences and the effect of decomposition on blubber lipids may alter the results of chemical analysis (Gulland et al. 2005).

3.4.3.6.3 Harmful Algal Blooms

Single-celled algae are the base of the food chain in the marine environment, and they proliferate or aggregate to form dense concentrations of cells called blooms when certain environmental conditions prevail. Algal blooms can produce marine biotoxins, which can accumulate in fish, seabirds, and other marine biota. Harmful algal blooms occur in coastal marine environments throughout the United States, including waters of Puget Sound and off the coasts of Washington, Oregon, and California. There is evidence that harmful algal blooms have increased in frequency, magnitude, and seasonal duration over the past 10 years, possibly due to global climate change, toxic algal species extending to new areas, and human-related eutrophication of the coastal environment (Trainer 2001). Though less than 5 percent of the known dinoflagellate species and fewer than 25 species in one genus of diatoms produce compounds that are known to be toxic to marine mammals (Van Dolah 2005), some marine mammal morbidity and mortality, including mass strandings, have been associated with marine biotoxin exposure and harmful algal blooms. Along the west coast of the United States, some of the most deleterious biotoxins produced by harmful algal blooms include saxitoxin (the toxin that causes paralytic shellfish poisoning in humans), domoic acid, and *Heterosigma akashiwo* (Horner et al. 1997). Gray whales have thus far, been shown to be affected by saxitoxin or domoic acid, as explained below.

Saxitoxin

In 1987, acute levels of saxitoxin, produced by a dinoflagellate bloom, were associated with the death of 14 humpback whales off the coast of Cape Cod, Massachusetts (Geraci 1989; Van Dolah 2005). Saxitoxin was also a contributing factor in the mortality of bottlenose dolphins in a Florida lagoon in 2001 and 2002 (Van Dolah 2005). Scientists have also postulated that chronic, sublethal exposure to saxitoxin through ingestion of copepods may affect right whale reproductive rates by lowering diving rates and feeding time, decreasing overall fitness (Van Dolah 2005). Researchers have demonstrated that saxitoxin has a high affinity and specific binding to the nerve preparations

of the brains of gray whales, humpback whales, California sea lions, and manatees (Trainer and Baden 1999).

Domoic Acid

In 1991, the first evidence of domoic acid on the west coast of North America was a mass mortality of pelicans and cormorants in Monterey Bay, California (Van Dolah 2005). The first confirmed domoic acid poisoning of marine mammals occurred in 1998 in the same area, when more than 70 California sea lions stranded from San Luis Obispo to Santa Cruz (Scholin et al. 2000). Of the 70 sea lions that stranded, 57 sea lions died due to acute toxicity from eating anchovies (Van Dolah 2005). A similar event occurred in 2000 in the same region, when the stranding of 187 sea lions was associated with domoic acid (Gulland et al. 2002; Van Dolah 2005). Concurrent with the 2000 sea lion mortality event, abnormally high numbers of gray whale strandings occurred (Van Dolah 2005). One of the three gray whales whose cause of death was determined in the 1999 and 2000 unusual mortality event was likely intoxicated with domoic acid (Gulland et al. 2005). The levels of domoic acid in the necropsied whale would indicate acute toxicosis in a laboratory primate, but toxic doses for cetacea are undetermined (Truelove and Iverson 1994). Biotoxins thus were one of the factors listed as potentially contributing to the increased number of gray whale mortalities observed in 1999 and 2000, though too few carcasses were adequately sampled to assess their importance in the mortality event (Gulland et al. 2005). In February 2002, researchers documented a domoic acid event on the California coast; it involved nine marine mammal species and the deaths of thousands of sea lions; none of the reported strandings or deaths was a gray whale (Van Dolah 2005).

3.4.3.6.4 Oil Spills and Discharges

Exposure to petroleum hydrocarbons released into the marine environment through oil spills and other discharge sources represents another potential anthropogenic impact on gray whales in the project area. Inhalation of vapors at the water's surface and ingestion of hydrocarbons during feeding are the most likely pathways of exposure. Acute exposure to petroleum products can cause changes in behavior and reduced activity, inflammation of the mucous membranes, lung congestion, pneumonia, liver disorders, and neurological damage (Geraci and St. Aubin 1990). Marine mammals can generally metabolize and excrete limited amounts of hydrocarbons, but acute or chronic exposure poses greater toxicological risks (Grant and Ross 2002).

At the water's surface, gray whales have been observed lying in or swimming through oil from the *Exxon Valdez* oil spill along the Alaska coast (Moore and Clarke 2002), and they have been

observed migrating through natural seeps near Santa Barbara, California (Kent et al. 1983). Kent et al. (1983) observed that gray whales generally swam faster, stayed submerged longer, and took fewer breaths than whales that did not pass through oil; they also sometimes changed direction to swim around the surface oil, though it was not clear that the change in direction was in response to the oil. Some scientists have concluded that cetaceans have a thickened epidermis that greatly reduces the likelihood of petroleum toxicity from skin contact with oiled waters (Geraci 1990; O'Shea and Aguilar 2001). Geraci (1990) proposed that gray whales probably experience eyes and tactile hair follicle irritation upon contact with oil, but that long-lasting effects to skin tissue were less likely. This observation was based on laboratory tests on bottlenose dolphins; because the dolphins did not exhibit a vascular reaction to contact with petroleum products (Geraci 1990). Other scientists have proposed that cetaceans with rough or damaged skin, such as the barnacle-covered skin of a gray whale, may be more susceptible to oil contamination and subsequent bacterial infection than smoother-skinned cetaceans (Albert 1981). Moore and Clarke (2002) reported that it is unclear whether gray whales can detect surface oil.

Gray whales could consume oil from fouled baleen, by engulfing tar balls, or by bottom feeding on contaminated sediments (Geraci 1990; Moore and Clarke 2002), though there are no reported cases of ingestion. Twenty-five whales stranded were after the Exxon Valdez spill; the whales had oil on their baleen, but not in their digestive tracts, suggesting that the baleen was fouled after death (Moore and Clarke 2002). Geraci and St. Aubin (1985) concluded that oil impact on baleen was slight and short term, based on laboratory tests where 70 percent of oil was flushed from baleen in 30 minutes, but Geraci (1990) proposed that baleen fibers could remain oiled if a whale was feeding in a highly oiled area where fouling outpaced the flushing rate. Moore and Clarke (2002) noted that oil and chemical dispersants, used to break up surface oil and cause it to sink, could contaminate benthic sediments. They proposed that any large-scale contamination of a primary feeding area could negatively affect the population.

Due to its proximity to Alaska's crude oil supply, Puget Sound is one of the leading petroleum refining centers in the United States, with about 15 billion gallons of crude oil and refined petroleum products transported through it annually (Puget Sound Action Team 2005). Inbound oil tankers carry crude oil to four major refineries in the sound, while outbound tankers move refined oil products to destinations along the United States west coast (Neel et al. 1997). In 2003, 746 oil tankers passed through Washington's waters bound for ports in Puget Sound, Canada, and along the Columbia River (Ecology 2004). This volume of shipping traffic puts the region at risk of having a catastrophic oil spill. The proposed removal of the current moratorium on oil and gas

exploration and development off the British Columbia coast may increase the danger of a major accident in the region. The possibility of a large spill is one of the most important short-term threats to coastal organisms in the northeastern Pacific (Krahn et al. 2002).

Neel et al. (1997) reported that shipping accidents were responsible for the largest volume (59 percent; 3.4 million gallons [12.9 million liters]) of oil discharged during major spills in Washington from 1970 to 1996. Other sources were refineries and associated production facilities (27 percent; 1.5 million gallons [5.7 million liters]) and pipelines (14 percent; 800,000 gallons [3.0 million liters]). Eight major oil tanker spills exceeding 100,000 gallons (378,500 liters) have occurred in the state's coastal waters and on the Columbia River since the 1960s, with the largest estimated at 2.3 million gallons (8.7 million liters). Grant and Ross (2002) did not report any major vessel spills from British Columbia during this same period, but at least one spill of 100,000 gallons (379,000 liters) is known to have occurred in Canadian waters at the mouth of the Strait of Juan de Fuca in 1991 (Neel et al. 1997). In addition to these incidents, numerous near accidents have resulted from vessel groundings, collisions, power loss, or poor vessel condition (Neel et al. 1997).

Puget Sound's four oil refineries are located on the coast at Anacortes (Shell Oil and Texaco), Ferndale (Mobil Oil), and Tacoma (United States Oil). Four major spills have occurred at two of these facilities, with each causing some discharge of petroleum into marine waters (NMFS 2005b). Pipelines connecting to refineries and oil terminals at ports represent another potential source of coastal spills. Pipeline leaks have caused several major spills in western Washington, but only the 1999 Olympic spill resulted in any discharge to marine waters (Neel et al. 1997).

During the late 1980s and early 1990s, Washington significantly upgraded its efforts to prevent oil spills in response to increased spills in the state and the *Exxon Valdez* accident in Alaska. A number of state, provincial, and federal agencies now work to reduce the likelihood of spills, as does the regional Oil Spill Task Force, which formed in 1989. National statutes enacted in the early 1990s, including the United State's Oil Pollution Act in 1990 and the Canada Shipping Act in 1993, have also been beneficial in creating spill prevention and response standards. Since 1999, Washington State has maintained a rescue tugboat at Neah Bay for approximately 225 days per year during the winter months to aid disabled vessels and thereby prevent oil spills. These measures appear to have helped reduce the number and size of spills since 1991, but continued vigilance is needed (Neel et al. 1997). In general, Washington's outer coast, the Strait of Juan de

Fuca, and areas near the state's major refineries are the locations most at risk of major spills (Neel et al. 1997). The area to be avoided was designated in the OCNMS to minimize the risk by routing large vessels away from dangerous and sensitive areas. An analysis by NOAA of the effectiveness of the voluntary area to be avoided restriction shows a decrease in the number of commercial vessels transiting the area following the designation. From July through September 1999, 511 vessels transited the area, down from 643 vessels for the same period in 1995, when the area to be avoided was established.

Chronic small-scale discharges of oil into marine waters from a variety of sources, including tanker ballast waters, ship bilge and fuel oil, and municipal and industrial waste, greatly exceed the volume released by major spills (Clark 1997) and are another potential impact to gray whales. Though chronic oil pollution has been documented in large numbers of seabird deaths (e.g., Wiese and Robertson 2004), less is known about its impact on gray whales and other marine mammals. The long-term effects of repeated ingestion of sub-lethal quantities of petroleum hydrocarbons on marine mammals are also unknown.

3.4.3.6.5 Offshore Activities and Underwater Noise

Anthropogenic activities in the ocean have increased over the past 50 years, resulting in more underwater noise (Hildebrand 2005). Underwater noise, associated with offshore oil and gas development, commercial fishing and vessel traffic, whale-watching, and scientific research, is often regarded as the primary source of disturbance to gray whales resulting from these activities (Moore and Clarke 2002). Noise specifically related to whale-watching and vessel disturbance is described directly below under the Whale-watching subheading. A broader discussion of noise (including both atmospheric and underwater noise) in the project area, is in Section 3.11, Noise, and its effects on wildlife other than gray whales is in Section 3.5, Other Wildlife Species. Gray whale reactions to offshore activities have been relatively well studied compared to those of other mysticetes (Moore and Clarke 2002). Researchers have noted short-term behavioral responses of gray whales to underwater noise. Malme et al. (1988) concluded there is a 50/50 chance that whales will change course to avoid the continuous broadband noise associated with aircraft, ships, and seismic explorations when sound levels exceed approximately 120 decibals $(dB)^2$ and to intermittent noise when levels exceed approximately 170dB. Moore and Clarke (2002) noted that, although these values provide some useful baseline information on the levels of industrial noise to which gray whales respond, the distance from the noise source at which these levels occur varies with geographic region and sea condition. In addition to altering swimming course and speed, gray whales exhibited abrupt behavioral changes in response to playback sounds and

airgun blasts, including switching from feeding to avoidance, with a resumption of feeding after exposure (Malme et al. 1984); and changing calling rates, call structure, and surface behavior, usually from traveling to milling (Dahlheim 1987).

Malme (1989) prepared a disturbance-ranking scheme for oil and gas noise sources off Alaska. Modeling indicated that gray whales have a high probability of being influenced by noise from oil and gas operations, including large tankers, dredges, and airgun arrays (Malme et al. 1988), but other studies indicated that the noisiest period of offshore oil and gas operations occurs during exploration and site establishment (Richardson et al. 1995). Production activities are generally quieter and require fewer support operations (Moore and Clarke 2002). Specific gray whale reactions to whale-watching include changing course and altering their swimming speed and respiratory patterns when followed by whale-watching boats (Bursk 1989), but Jones and Swartz (1984) documented that gray whales in the San Ignacio Lagoon of Baja California become less likely to flee as the season progresses. Cow-calf pairs of gray whales are considered more sensitive to disturbance by whale-watching vessels than other age or sex classes, for instance (Tilt 1985). Gray whales also preferentially avoid low frequency active transmissions conducted in a landward direction (Tyack and Clark 1998). Reported gray whale reactions to aircraft vary and seem related to ongoing whale behavior and aircraft altitude (Moore and Clarke 2002). Specific gray whale reactions to scientific research (tagging) include fluke-slapping and rapid swimming, but the whales returned to normal behavior shortly after tagging (Harvey and Mate 1984).

3.4.3.6.6 Vessel Interactions

Whale-watching for gray whales is an important recreational industry and activity along the west coast of North America, from the wintering grounds in the lagoons of Baja California to British Columbia, Canada, although most targeted gray whale whale-watching occurs in the winter range, where tourist boats offer trips to see (and sometimes pet) newly born gray whale calves and mothers. In Washington and British Columbia, killer whales easily surpass gray whales as the main target species of the commercial whale-watching industry (Hoyt 2001). The activity of commercial whale-watching vessels and private recreational boats has raised concerns about its effect on gray whales. In response to these concerns, regulations minimize disturbance by vessels in Mexico, the United States, and Canada.

In Mexico, the government has applied whale-watching regulations to commercial operators since 1997. There are currently regulations governing the numbers of boats and methods of approach for four specific whale-watching areas in the lagoons. There are no minimum approach distances,

but boats cannot chase whales. The northern two-thirds of San Ignacio lagoon closes to tourism and fishing activities during the breeding and calving season. In the southern third of San Ignacio lagoon (nearest the ocean), whale-watching tourism is closely regulated to allow access to only limited numbers of people (United Nations 1999). In Washington and British Columbia, NMFS and conservation organizations in the United States have teamed up with the Canadian government and conservation organizations to adopt 'Be Whale Wise' guidelines for vessels, kayaks, and other crafts watching whales. The guidelines, among other things, recommend that vessels keep a 100-yard (100-meter) buffer between the vessel and the whale, and recommend a slow approach speed of 7 knots within 400 yards (400 meters) of whales.

Whale-watching along the migration route is not heavily regulated and it has been suggested that this activity, in combination with commercial fishing and vessel operations, may cause gray whales to migrate further offshore (Wolfson 1977). Researchers conducted various studies on the reaction of gray whales to whale-watching vessels in winter on their wintering range and, to some extent, during migration (Urbán-Ramírez et al. 2003). Researchers have paid little attention to the northern portion of the summer range in the Bering Sea and adjacent Arctic Ocean because whale-watching is largely undeveloped in those areas (Richardson et al. 1995). One study reported on the reaction of gray whales feeding off Vancouver Island during summer to whale-watching vessels (Bass 2000). In general, scientists remain cautious about the effects of whale-watching on gray whales (e.g., Gard 1974; Rice 1975; Reeves 1977; Jones et al. 1994), but the response of gray whales to whale-watching vessels appears to be short term and temporary.

In the winter range, vessels in the lagoons can cause short-term escape reactions in gray whales, especially when boats move erratically or quickly (Reeves 1977; Swartz and Cummings 1978; Swartz and Jones 1978; Swartz and Jones 1981). Bursk (1989) reported that gray whales often changed speed and deviated from their course when near whale-watching vessels. Observers noted that gray whales have also displayed evasive behavior termed snorkeling, where whales came to an almost compete halt to breathe in an inconspicuous manner. Mosig (1998) reported an inverse relationship between the average number of whale-watching vessels and the average number of gray whales in Laguna San Ignacio in the winter of 1997, but she could not demonstrate any direct effect of vessels on whales. Jones and Swartz (1984 and 1986) found no evidence that gray whales abandoned the lagoons when whale-watching vessels were present; observers noted that some gray whales were attracted or showed no response to quiet, idling, slow-moving, or anchored vessels, especially late in winter (Norris et al. 1983; Dahlheim et al. 1984; Jones and Swartz 1984; Jones and Swartz 1986; Richardson et al. 1995). During the course

of all of these studies, there has been no evidence to demonstrate whale-watching vessels cause any more than a temporary effect on the behavior of gray whales and no apparent effect on the health of the population in the lagoons on the wintering grounds (Gard 1974; Jones et al. 1994).

Along the migration route, including the southern portion of the summer range, whale-watching vessels can also cause short-term reactions in gray whales. Migrating whales disturbed by vessels tended to exhale underwater and surface only long enough to inhale before resubmerging (Hubbs and Hubbs 1967). Observers noted that migrating gray whales also changed course more often with increasing numbers of whale-watching vessels (Bursk 1983; Bursk, in Atkins and Swartz 1988). Heckel et al. (2001) found substantial differences in both speed and direction of the transit of migrating gray whales with and without the presence of whale-watching vessels off Baja California. While these studies show migrating gray whales appear to react to whale-watching vessels, there is no evidence to suggest they have altered location of the migration route, migration timing, or the sequence of migration by sex and age groups. Whale-watching vessels regularly approach gray whales feeding in Clayoquot Sound, on the west coast of Vancouver Island, British Columbia, during summer. Whales responded to the vessels by changing their dive patterns, but the changes appeared to be temporary and not biologically significant (Bass 2000).

Harvey and Mate (1984) observed that gray whales sometimes responded to tagging by fluke slapping and rapid swimming, but usually returned to pre-tagging behavior shortly after the event. The response of gray whales to biopsy darts has not been described, but other mysticetes are observed having brief, sometimes dramatic, changes in behavior (Brown et al. 1991; Weinrich et al. 1991). Although the gray whale population is exposed to whale-watching vessels and other disturbances on the wintering grounds and along much of the migration route, it has demonstrated a tolerance and resiliency to whale-watching and other noisy human activities as reflected by the successful recovery of the population from over-exploitation (Cowles et al. 1981; Moore and Clarke 2002).

3.4.3.6.7 Activities Occurring in the Winter Range

Much of the coastal area surrounding the Baja lagoons and the gray whale wintering range is protected by law and limited access. In 1988, the Mexican government established El Vizcaino Biosphere Reserve, an area totaling 2,546,790 acres and encompassing Ojo de Liebre (Scammon's Lagoon), Guerreo Negro, and the San Ignacio Bay gray whale sanctuaries. Portions of the reserve, including San Ignacio and the Ojo de Liebre lagoons, were designated as United

Nations Educational, Scientific, and Cultural Organization world heritage sites in 1993 (Urbán-Ramírez et al. 2003). In 2005, the Bay of Loreto National Marine Park, in the northern area of the Sea of Cortez, joined the list. In May 2002, all Mexican territorial seas and the EEZ were declared as a refuge for the protection of large whales. See Urbán-Ramírez et al. (2003) for additional information on formal protection of gray whales in Mexico. Whale-watching is discussed above in further detail, but other activities in the winter range that have been identified as future environmental concerns by ParksWatch of Mexico are discussed below.

Mineral and Salt Mining

Mining for minerals (such as copper, manganese, gypsum, cobalt, silica, and phosphorus) peaked in the last century in places like Santa Rosalia, creating soil erosion, contamination, pollution, and litter in the ocean. Large mining companies have since abandoned these sites, and the town is in economic decline (ParksWatch 2004). The largest salt mine in the world is, however, still operating at Guerrero Negro, where approximately 7 million tons per year is extracted from the ocean through evaporation (ParksWatch 2004). The main threat posed by salt mining is the byproducts created by high salt concentrations (ParksWatch 2004).

In 1995, two large corporations proposed to expand industrial salt extraction by establishing a plant on the shores of San Ignacio Lagoon, Mexico. International and national concern arose as to whether the then-proposed salt plants would divert fresh water from pumping, produce and discharge toxic brine and other water-based pollutants into the lagoon waters, and spur further development, among other issues, potentially having adverse effects on the ecosystem and gray whales (e.g., Sullivan 2006). At the 52nd meeting of the IWC, Urbán-Ramírez (2000) reported the results of a study on the proposed saltworks project. In particular, he evaluated potential impacts on the gray whales that use this wintering area for breeding, calving, and calf rearing. According to his study results, the salt facility in San Ignacio would not harm gray whales. Nonetheless, on March 2, 2000, the government of Mexico cancelled the saltworks project. Conservation agreements negotiated between the Laguna San Ignacio Conservation Alliance and communal landowners have since placed 120,000 acres of land around the lagoon in a private land trust, and more agreements are anticipated (Sullivan 2006). Thus, while the local people fish and provide ecotourism and whale-watching, it is reasonable to assume that the area will remain a sanctuary for wintering gray whales (Sullivan 2006).

Shore-Based Commercial Development in Bahia Magdalena

The growth of gray whale tourism in the North Zone of Bahía Magdalena has led to a proposed Japanese-owned and financed tourist resort development at Bahía Magdalena (Dedina and Young 1995). Although NMFS identified this activity as a potential threat to the whales and their habitat in its 1999 gray whales status review (e.g., water quality degradation, increase in whale-watching tourism, etc.), there are currently no plans to proceed with this development (Rugh et al. 1999). Since 1999, the Mexican government (Fonatur, the national fund for the promotion of tourism) has planned to improve and promote the growth of various marinas around the Baja Peninsula, improve associated airports and airstrips, and pave a highway across the peninsula to improve yachting access and tourism. To date, the project has yet to be analyzed or implemented.

3.4.3.6.8 Ship Strikes

The nearshore migration route used by gray whales makes ship strikes a potential source of injury and mortality (Laist et al. 2001). Anecdotal data and strandings recorded by the Marine Mammal Stranding Network provide helpful, but incomplete, data on the occurrence, frequency, and significance of vessel-related whale deaths and injuries (Laist et al. 2001). From 1975 to 1980, there were reports of 12 collisions and 6 confirmed deaths of gray whales off the coast of southern California, and 7 of 489 gray whales stranded between Mexico and Alaska from 1975 to 1989 had apparent propeller injuries (Laist et al. 2001). Ferrero et al. (2000) reported five gray whale mortalities off California from ship strikes from 1993 to 1995, and one ship strike mortality occurred off Alaska in 1997. Between 1999 and 2003, the California marine mammal stranding network reported four serious injuries or mortalities of gray whales caused by ship strikes, one each in 1999, 2000, 2001, and 2003 (Angliss and Outlaw 2005). Based on the photo-id catalog maintained for gray whales in the winter range, Urbán-Ramírez et al. (2003) reported that an estimated 2 percent (then about 1,600) of the whales had injuries (scars) from impact with a large keel or propeller. Additional mortality from ship strikes probably goes unreported because the carcasses sink at sea (i.e., the whales do not strand), the beached carcasses do not show obvious signs of ship strikes, or the whales may not die when hit (Urbán-Ramírez et al. 2003). It is impossible to quantify the actual mortality of gray whales from this source, and an annual mortality rate of one or two gray whales per year from ship strikes represents a minimum estimate. Laist et al. (2001) suggests that most lethal or severe injuries are caused by large ships 80 meters (263 feet) or longer and by ships traveling 14 knots or faster.

3.4.3.6.9 Incidental Catch in Commercial Fisheries

The following information comes from NMFS' 2008 Stock Assessment Report (Angliss and Outlaw 2008). NMFS recognizes 22 commercial fisheries in Alaska that use trawl, longline, or pot gear and could have incidental serious injuries or mortalities of gray whales. No observed serious injuries or mortalities have occurred in any of those fisheries. NMFS observers monitored the Makah tribal set gillnet fishery from 1990 to 1998 and in 2000, reporting one gray whale taken in 1990 and one in 1995. One gray whale was entangled in a set gillnet during this fishery; it was released alive in 1996. NMFS observers also monitored the California/Oregon thresher shark/swordfish drift gillnet fishery from 1993 to 2003 and reported one mortality in 1998 and one in 1999. No serious injuries or mortalities have been reported in that fishery since 1999. The mean annual mortality rate from these monitored fisheries was 1.2 (the coefficient of variation is 0.85) gray whales per year. Additional information on gray whale mortalities from fisheries interactions comes from logbooks and stranding data. Angliss and Outlaw (2008) reported annual fishery mortality data from fisher logbooks (rounded up to one whale) and from stranding reports (rounded up to seven whales). Taken into account with the monitored fisheries, they estimated a total minimum annual mortality rate in commercial fisheries of approximately seven whales. Although there may be other unreported mortalities in commercial fisheries, Angliss and Outlaw (2005) concluded that fishery mortalities can be considered insignificant. Gray whales also migrate through Canada's exclusive economic zone and are subject to fisheries interactions there as well. Baird et al. (2002) estimated the annual mortality in Canadian fisheries to be around two whales.

3.4.3.6.10 Marine Energy Projects

Although not yet analyzed, approved, or implemented by the Federal Energy Regulatory Commission and various energy companies, 10 marine energy projects currently are proposed in Washington State. In its August 2006 report to the Washington Fish and Wildlife Commission, the WDFW stated that applications for licensing submitted to the Federal Energy Regulatory Commission cover the following project locations:

- San Juan Channel 116 turbines (60-foot rotors)
- Guemes Channel 166 turbines (30-foot rotors)
- Admiralty Inlet (1,010 turbines)
- Agate Pass 130 turbines (9-foot rotors)
- Speiden Channel (168 turbines)
- Rich Passage 62 turbines (30-foot rotors)

- Tacoma Narrows 60 turbines (60-foot rotors)
- Four to 20 turbines (30 to 60-foot rotors) (Snohomish County PUD) Deception Pass
- One hundred to 300 turbines (Washington Tidal Energy)
- Columbia River 50 to 150 turbines (25 to 50-foot rotors)

Generally, the concept for most of these proposed projects is to take wind turbines and place them under water to use the energy from tidal currents to generate electricity (WDFW 2006b). The actual impacts of these types of projects are unknown because very few exist in the world, but WDFW (2006b) has identified preliminary potential impacts to birds, fish, and marine mammals. They include, but are not limited to, direct mortality or injury from turbine blade strikes, interference with migratory patterns, measures to protect equipment from marine growth, direct habitat loss from equipment and infrastructure placement, impacts on currents, changes in water surface elevations, effects on commercial and recreational fishing areas and equipment, changes in sediment transport, and other issues not yet identified. The WDFW will design studies to assess effects on fish, birds, marine mammals, and their habitats (WDFW 2006b).

In December of 2007, the Federal Energy Regulatory Commission issued a license for a pilot wave energy project in Makah Bay, located in the Makah U&A, within the gray whale's migratory corridor (other applications are also proposed for siting in areas that some gray whales could potentially travel). Under the license, Finavera Renewables Ocean Energy Ltd., will place four buoys about 3.7 miles from shore in approximately 150 feet of water. Each buoy will be tethered by cables to four surface floats (approximately 4 feet in diameter) and each float will be connected by a cable to a subsurface anchor buoy just above the seafloor. All cables in the anchoring system will be under tension. A transmission cable will connect the buoys to a transmission station on land. This cable will lie along the ocean floor until it reaches a depth that is 10 to 30 feet below mean lower low tide, at which point it will be underground until it reaches the station. At this time the applicant has no definitive plans for future expansion of the project (AquaEnergy 2006). Finavera and FERC examined the environmental effects of the project and concluded there would be only minor or localized risks to gray whales. Impacts of the project to other resources are examined in Section 5.0, Cumulative Effects.

3.5 Other Wildlife Species

3.5.1 Introduction

Various marine mammals and birds inhabit the project area, with the highest use during late spring through early fall and the lowest use during winter (NOAA 1993). Twenty-nine species of marine mammals and 109 species of marine birds have been recorded in the project area (NOAA 1993). Of these species, eight mammal and four bird species are listed under ESA as threatened or endangered. Four federally listed reptiles (leatherback sea turtles, green sea turtles, loggerhead sea turtles, and olive ridley sea turtles) also could occur in the area. Species occurring in the project area and listed as threatened or endangered by Washington State, but not under the federal ESA, include one marine mammal (sea otter).

3.5.2 Regulatory Overview

Various federal, state, and local regulations address the protection of threatened, endangered, and sensitive wildlife in the project area. Table 3-10 provides regulations for wildlife. In most cases, city and county regulations reflect WDFW recommendations. For a detailed description of NMFS' management of marine mammals (including, but not limited to, gray whales), see Section 3.4.2.1, Marine Mammal Protection Act Management.

With regard to disturbance of marine wildlife, MMPA prohibits (with some exceptions) the harassment of marine mammals in United States waters. The 1994 amendments to the MMPA defined harassment (Level B) as any act of pursuit, torment, or annoyance that has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering. Loud, continued noises could be considered harassment to wildlife, particularly to marine mammals that use sound to communicate.

To protect nesting seabirds and marine mammals from noise and physical disturbance from low-flying aircraft, OCNMS prohibits flying motorized aircraft less than 2,000 feet over certain areas of the Sanctuary. These restrictions are described in greater detail in Section 3.1.1.1.2, Designation (of the OCNMS) and Regulatory Overview. Although codified as federal law, National Marine Sanctuary overflight regulations are not recognized by the Federal Aviation Administration. The Sanctuary, however, has made increasing voluntary compliance with this regulation a major priority (Galasso 2005). Notably, data collected by University of Washington researchers studying marine birds at Tatoosh Island were used to conduct an enforcement action against a helicopter pilot and contracting passenger (Parrish et al. 2005).

1 **TABLE 3-10. FEDERAL, STATE, AND LOCAL REGULATIONS FOR PROTECTED WILDLIFE**

REGULATION	OVERSEEING AGENCY	WILDLIFE SPECIES AND HABITATS ADDRESSED
Federal		
Marine Mammal Protection Act (MMPA)	NMFS and FWS	All marine mammal species.
Whaling Convention Act (WCA)	NMFS	All large cetacean species subject to aboriginal subsistence whaling.
Endangered Species Act (ESA)	FWS and NMFS	All federally listed threatened and endangered species and critical habitats. Federal agencies must ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.
Migratory Bird Treaty Act and Executive Order 13186	FWS	Most migratory birds. The act provides that it is unlawful to pursue, hunt, take, capture, or kill these birds.
Bald Eagle Protection Act and Eagle Protection Act	FWS	Bald eagle (and golden eagle). The act prohibits the taking or possession of and commerce in bald and golden eagles, with limited exceptions.
Olympic Coast National Marine Sanctuary regulations, 15 CFR Part 922, Subpart O	NOAA National Ocean Science, National Marine Sanctuary Program	Sea turtles, seabirds, and their habitats. The regulations prohibit take of these wildlife, except as authorized by ESA, MMPA, Migratory Bird Treaty Act, or pursuant to any relevant Indian treaty, provided that the treaty is exercised in accordance with ESA, MMPA, and Migratory Bird Treaty Act, to the extent that they apply. These regulations prohibit flying motorized aircraft at less than 2,000 feet elevation both above the sanctuary and within 1 nautical mile of the Flattery Rocks National Wildlife Refuge or within 1 nautical mile seaward from the coastal boundary of the sanctuary, with limited exceptions.
State		
Washington State Endangered Species Act, Washington Administrative Code 232-12-297	WDFW	All state-listed threatened and endangered species. Associated recovery plans provide guidelines on management of these species.
Local		
Clallam County Critical Areas Ordinance No. 709, 2001	Clallam County	Habitat for threatened, endangered, and other sensitive species. Provides general guidance. Also provides specific buffers for bridge construction and other projects that are not relevant to the Makah EIS proposed action.

3.5.3 Existing Conditions

This following discussion is divided into three primary topics. It focuses on establishing a baseline of information for addressing EIS issues of concern including noise, disturbance, and other perturbations that may affect marine wildlife. Section 3.5.3.1 describes the marine mammal species that are known to occur in the project area. Section 3.5.3.2 provides an overview of other marine wildlife species in the project area. Both sections address ESA-listed species as well as other species in the project area. Section 3.5.3.3 discusses the sensitivity of marine mammals and other wildlife species to noise and other disturbance both above and below the surface of the water.

3.5.3.1 Marine Mammals

Table 3-11 lists 29 species of marine mammals that breed, rest within, or migrate through the waters off the Washington coast (NMFS 1992; NOAA 1993). Descriptions of the state and federal threatened or endangered species followed by common and then, to a lesser extent, uncommon species are provided below in this section. Full descriptions of these species are in Angliss and Outlaw (2005), Carretta et al. (2006), Forney et al. (2000), NMFS (1992), Ferrero et al. (2000), Haley (1986), Perrin et al. (2002), and Nowak et al. (2003), with specific information on their use off the Washington coast by Brueggeman et al. (1992), Calambokidis et al. (2004b), and Green et al. (1993).

TABLE 3-11. MARINE MAMMALS THAT OCCUR ALONG THE WASHINGTON COAST AND THEIR FEDERAL/STATE STATUS

SPECIES	*SCIENTIFIC NAME*	RELATIVE ABUNDANCE	PRIMARY HABITAT	PRIMARY PREY	SEASON(S) PRESENT	FEDERAL/ STATE STATUS
Harbor seal	*Phoca vitulina*	Common	Coastal/ continental	Fish	Year-round	
California sea lion	*Zalophus californianus*	Common	Coastal/shelf	Fish	Summer/ spring	
Steller sea lion	*Eumetopias jubatus*	Common	Coastal/shelf	Fish	Year-round	Federally/state threatened
Northern elephant seal	*Mirounga angustirostris*	Common	Shelf/slope	Fish/squid/ crab	Summer/fall	
Northern fur seal	*Callorhinus ursinus*	Common	Offshore/ slope	Fish/squid	Year-round	Federally depleted
Dall's porpoise	*Phocoenoides dalli*	Common	Shelf/slope/ offshore	Fish	Year-round	
Harbor porpoise	*Phocoena phocoena*	Common	Shelf	Fish/squid	Year-round	
Pacific white-sided dolphin	*Lagenorhynchus obliquidens*	Common	Slope/ offshore	Fish	Year-round	
Northern right whale dolphin	*Lissodelphis borealis*	Common	Slope/ offshore	Fish/squid	Year-round	
Common dolphin	*Delphinus delphis*	Uncommon	Offshore	Squid/fish	Unknown	

Species	*Scientific Name*	Relative Abundance	Primary Habitat	Primary Prey	Season(s) Present	Federal/ State Status
Striped dolphin	*Stenella coeruleoalba*	Uncommon	Shelf/offshore	Fish/squid/ zooplankton	Unknown	
Risso's dolphin	*Grampus griseus*	Common	Slope	Squid	Year-round	
Killer whale[1]	*Orcinus orca*	Common	Shelf/slope	Fish/marine mammals	Year-round	Federally/state endangered[1]
False killer whale	*Pseudorca crassidens*	Uncommon	Offshore	Fish	Unknown	
Pilot whale	*Globicephala macrorhynchus*	Uncommon	Shelf/offshore	Fish/ octopus	Unknown	
Pygmy sperm whale	*Kogia breviceps*	Uncommon	Offshore	Octopus/ fish/squid	Unknown	
Gray whale	*Eschrichtius robustus*	Common	Coastal/shelf	Crustaceans	Year-round	
Humpback whale	*Megaptera novaeangliae*	Uncommon	Shelf/slope	Zooplankton/ fish	Spring to fall	Federally/state endangered
Sperm whale	*Physeter macrocephalus*	Uncommon	Slope/ offshore	Squid/fish	Spring to fall	Federally/state endangered
Minke whale	*Balaenoptera acutorostrata*	Common	Shelf	Fish/squid	Year round	
Fin whale	*Balaenoptera physalus*	Uncommon	Slope/ offshore	Fish/ zooplankton	At least winter	Federally/state endangered
Blue whale	*Balaenoptera musculus*	Uncommon	Slope/ offshore	Zooplankton	Unknown	Federally/state endangered
Sei whales	*Balaenoptera borealis*	Uncommon	Offshore	Zooplankton	Unknown	Federally/state endangered
Right whale	*Balaena glacialis*	Rare	Shelf	Zooplankton	At least spring	Federally/state endangered
Baird's beaked whale	*Berardius bairdii*	Rare	Shelf/offshore	Squid/ octopus/fish	At least fall	
Curvier beaked whale	*Ziphius cavirostris*	Rare	Offshore	Squid/fish	Unknown	
Hubb's beaked whale	*Mesoplodon carlhubbsi*	Rare	Offshore	Squid/fish	Unknown	
Stejneger's beaked whale	*Mesoplodon stejnegeri*	Rare	Offshore	Squid/fish	Unknown	
Sea otter (Washington stock)	*Enhydra lutris kenyoni*	Common	Coastal	Invertebrates	Year round	State endangered

[1] NMFS recently listed the southern resident killer whale population as endangered. Transient and offshore killer whales are not listed under ESA, but occur in the project area.

Source: Haley 1986; Calambokidis et al. (2004b), Brueggeman et al. (1992); NMFS (1992); Green et al. (1993); Carretta et al. (2006), Anglis and Outlaw (2005), Ferrero et al. 2000; Forney et al. 2000.

3.5.3.1.1 ESA-Listed Marine Mammal Species

Steller Sea Lion

The eastern stock (identified as a distinct population segment) of Steller sea lions extends from California to 144° W longitude (at Cape Suckling, AK) at the northern end of southeast Alaska and includes Washington and Oregon. Based on extrapolations from pup surveys in 2002, the stock is estimated to be 44,996 animals with a PBR of 1,967 (Angliss and Outlaw 2005). This stock is listed as threatened under ESA (55 FR 12645, April 5, 1990). Overall the stock has been increasing at about 3.1 percent per year since the 1970s with the population more than doubling in size by 2002, principally in Southeast Alaska (Pitcher et al. *in press*).

The Steller sea lion occurs year around in Washington State, with peak numbers in late summer, fall, and winter (NMFS 1992). There are no rookeries in Washington State, but one or two pups infrequently are born at haulout sites on the Washington coast; it is unlikely that these pups survive (Gearin 2007). The closest rookeries are in northern British Columbia and central Oregon, where pupping occurs from late May to early July. Within Washington, Steller sea lions occur primarily in the nearshore zone and continental shelf zone, with smaller numbers in the inside waters of the Strait of Juan de Fuca and Puget Sound.

There are several commonly used haulout sites near the project area (Gearin and Scordino 1995), including near Neah Bay during all months of the year, but they are more commonly observed during late August through April. The west end of Tatoosh Island is a year-round haulout site with numbers peaking during fall and winter. To the south of Cape Alava, large numbers exceeding 1,000 Steller sea lions have been observed hauled out on the Bodelteh Islands and on Guano Rock (Figure 3-2). Farther to the south, large numbers also haul out on Carroll Island, along with California sea lions, and at the Split Rock complex north of Taholah.

Steller sea lions are opportunistic predators, feeding primarily on a wide variety of fish and cephalopods. Some of the more important prey in Washington include Pacific whiting, Pacific herring, spiny dogfish, skates, salmon, and smelts (Gearin et al. 1999). Steller sea lions have been known to prey infrequently on harbor seal, fur seal, ringed seal, and possibly sea otter pups (NMML 2007). Before 2005, Makah tribal regulations explicitly advised subsistence hunters to take care in hunting California sea lions to avoid Steller sea lions (Sepez 2001); since 2005, the Tribe has not authorized direct subsistence harvest of any marine mammals.

Killer Whale

There are three ecotypes of killer whales in the North Pacific Ocean: resident, transient, and offshore whales (Bigg et al. 1990; Ford et al. 2000). Resident killer whales congregate in relatively large groups in coastal areas where they forage primarily on fish. Transient killer whales, whose range extends over a broader area, primarily hunt marine mammals (Krahn et al. 2004; Baird et al. 1992). In a recent study by Wade et al. (2006), gray whales accounted for approximately 8 percent of 466 observed predation events by transient killer whales off the west coast of North America; calves and juvenile gray whales were taken preferentially over adults. Transient pods are usually smaller than resident pods, and they typically have different dorsal fin shapes and saddle patch pigmentation than resident pods. Little is known about offshore killer whales, but their groupings are large, they range from Mexico to Alaska, and their prey includes fish (Ford et al. 2000; Krahn et al. 2002, 2004). All three ecotypes of killer whales were seen each year during ship surveys from the summer of 1995 to 2002, including southern and northern residents (Calambokidis et al. 2004b). They reported 14 sightings of 124 animals; three of these sightings were of large groups between 20 and 35 animals, and the rest were fewer than 10. Killer whales were widely distributed across different habitats; animals were sighted both close to and far from shore and in fairly shallow and deep water.

As summarized by Carretta et al. (2006), most sightings of the Eastern North Pacific southern resident stock of killer whales have occurred in the summer in inland waters of Washington and southern British Columbia. Pods belonging to this stock have, however, also been sighted in coastal waters off southern Vancouver Island and Washington (Bigg et al. 1990; Ford et al. 2000). The complete winter range of this stock is uncertain. Of the three pods comprising this stock, one (J1) is commonly sighted in inshore waters in winter, while the other two (K1 and L1) apparently spend more time offshore (Ford et al. 2000). Pods K1 and L1 are often seen entering the inland waters of Vancouver Island from the north — through Johnstone Strait — in the spring (Ford et al. 2000), suggesting that they may spend time along the entire outer coast of Vancouver Island during the winter. In 1993, the three pods comprising this stock totaled 96 killer whales (Carretta et al. 2006). The population increased to 99 whales in 1995, then declined to 79 whales in 2001 before increasing slightly to 84 whales in 2004 (Ford et al. 2000; Center for Whale Research 2005). Ninety animals were documented in the J, K, and L pods in 2005 (Center for Whale Research 2005). The minimum population estimate for the eastern North Pacific southern resident stock of killer whales is 84 animals with a PBR of 0.8 whale per year. The southern residents primarily feed on salmon returning to rivers in Washington and southern British Columbia.

NMFS listed the southern resident killer whale distinct population segment as endangered in 2005 (70 FR 69903, November 18, 2005). Listing factors included reduced quantity and quality of prey, persistent pollutants that could cause immune or reproductive system dysfunction, oil spills, and noise and disturbance from vessel traffic. Additionally, the small size of this stock makes it potentially vulnerable to inbreeding that could cause a major population decline (70 FR 69903, November 18, 2005). In November 2006, NMFS designated critical habitat for the southern resident killer whales (71 FR 69054, November 29, 2006). This designation includes approximately 2,500 square miles of Puget Sound, including the entire Strait of Juan de Fuca in the project area. Areas with water less than 20 feet deep are not proposed. The primary constituent elements for the southern resident killer whale critical habitat are (1) water quality to support growth and development; (2) prey species of sufficient quantity, quality, and availability to support individual growth, reproduction, and development, as well as overall population growth; and (3) passage conditions to allow for migration, resting, and foraging.

Humpback Whale

The humpback whale is listed as endangered throughout its range (35 FR 8491, June 2, 1970). Three North Pacific Ocean populations of humpback whales are currently recognized, based on predominant migration patterns and destinations (there is no perfect correlation between the breeding and feeding areas): (1) the eastern North Pacific stock, which spends winter and spring in coastal Central America and Mexico, then migrates to the coast of California and to southern British Columbia in summer and fall; (2) the central North Pacific stock, which spends winter and spring off the Hawaiian Islands, then migrates to northern British Columbia/Southeast Alaska and Prince William Sound west to Kodiak in summer and fall; and (3) the western Pacific stock, which spends winter and spring off of Japan, then probably migrates to waters west of the Kodiak Archipelago in summer and fall (Carretta et al. 2006). Other humpbacks also spend winter and spring in the waters of Mexico's offshore islands, but the migratory destination of these whales is not well known. The eastern North Pacific population is the stock that most commonly occurs in the project area during summer and fall. Some individuals from the central North Pacific stock may also appear near or in the project area during the summer and fall; there is some overlap of this stock with the summer and fall distribution of the eastern North Pacific stock.

The minimum population estimate for humpback whales in the eastern North Pacific stock is based on 2002/2003 abundance estimates from line-transect and photo-identification mark-recapture studies (Calambokidis and Barlow 2004; Calambokidis et al. 2004b) and is

approximately 1,158 whales. The population is growing from approximately 6 to 7 percent, and the calculated PBR is 2.3 whales per year (Carretta et al. 2006).

Seventeen of 191 whales (9 percent) photo-identified by Calambokidis et al. (2004b) off northern Washington had also been photographed off California and Oregon. Interchange of whales seen off northern Washington and other feeding areas to the south decreased as distance among feeding areas increased. Approximately 10 percent of the whales that were identified off Oregon were also photographed off northern Washington (Calambokidis et al. 2004b).

Humpbacks are generally seen off the coast of Washington from May to November, although they have also been seen earlier in the spring and later in the winter (Shelden et al. 2000) with the highest numbers in June and July. Aerial surveys conducted by Brueggeman et al. (1992) off the coasts of Oregon and Washington recorded 36 groups of 68 humpbacks between May and November, and Green et al. (1993) reported 50 groups of 77 humpbacks between March and April. Humpbacks primarily occurred near the edge of the continental slope and deep submarine canyons (Astoria, Grays, and Nitinat Canyons) where upwelling concentrates zooplankton near the surface for feeding (Brueggeman et al. 1992). Brueggeman et al. (1992) observed that humpbacks were most abundant between May and September, but did not observe any during winter and did not sight any calves. Humpbacks typically are not sighted in winter, but Shelden et al. (2000) did observe some off the coast of Washington in late fall and winter 1998 and 1999; 5 humpback whales were sighted between Carroll Island and Cape Flattery in October, 26 humpbacks (in 12 groups) were sighted in November, and 18 humpbacks (10 groups) were sighted in December. Shelden et al. (2000) concluded that the late occurrence of humpbacks in Washington waters could be due to reoccupation of habitat subsequent to commercial whaling, or to abundance of prey available.

Calambokidis et al. (2004b) reported sightings of humpback whales during ship surveys conducted from 1995 to 2002 off the northern Washington coast within the boundaries of the Olympic Coast National Marine Sanctuary. Humpbacks were the most common species seen with 232 sightings of 402 animals and more than 191 unique individuals; the largest numbers were seen in 2002 when there were 79 sightings of 139 individuals. Group sizes ranged from one to eight animals. Only six calves were recorded from the ship surveys, probably because it was difficult to identify calves at the distance at which most sightings occurred. Sightings were concentrated between Juan de Fuca Canyon and the outer edge of the continental shelf, an area called the Prairie. A small area east of the mouth of Barkley Canyon and north of Nitnat Canyon

where the water was approximately 410 to 475 feet deep had numerous sightings in all years. Smaller numbers of humpback whales were also seen on Swiftsure Bank.

Sperm Whale

The sperm whale is listed as endangered throughout its range (35 FR 8491, June 2, 1970). Sperm whales are widely distributed in the pelagic regions of the North Pacific Ocean where they prey on deepwater squid (Gosho et al. 1984). Sperm whales breed in the lower latitudes (south of 40 degrees N) in winter and then migrate northward to summer feeding areas. Whaling records indicate that about eight sperm whales were harvested annually by whalers at the Bay City, Washington, whaling station during its 15 years of operation in the early 1900s, suggesting that sperm whales were consistently present off the coast at that time. Ship surveys by Calambokidis et al. (2004b) from 1995 to 2002 recorded no sperm whales. However, in surveys Brueggeman et al. (1992) conducted, 24 groups of 36 sperm whales were recorded off the Oregon and Washington coasts. Most were encountered in the deeper offshore waters, except for a relatively small number found in continental slope waters. Brueggeman et al. (1992) observed sperm whales during spring through fall, but not in winter. The highest single-day count was 13 sperm whales in September 1990. Green et al. (1993) reported seven sperm whales in five groups off the Oregon and Washington coasts between March and May. The most recent estimate of abundance is 1,233 sperm whales reported by Barlow (2003) for California, Oregon, and Washington; the minimum population estimate is 885 animals with a PBR of 1.8 whales per year (Carretta et al. 2006). Population trends for the California-Oregon-Washington population are uncertain, though the larger eastern North Pacific population appears to be increasing slightly. The information indicates that relatively small numbers of sperm whales are present in the deep waters off the Washington coast from spring through fall.

Fin Whale

The fin whale is listed as endangered throughout its range (35 FR 8491, June 2, 1970). Three stocks are generally recognized off the United States west coast: (1) the California/Oregon/ Washington stock; (2) the Hawaii stock; and (3) the Alaska stock (Carretta et al. 2006). Fin whales of the California/Oregon/Washington stock are year-round residents off the coast of California; they summer off the Oregon coast and may pass by the Washington coast. They are a pelagic species, seldom found in waters shallower than 656 feet. Ship surveys by Calambokidis et al. (2004b) from 1995 to 2002 indicated no fin whales. Aerial surveys Brueggeman et al. (1992) conducted off the Oregon and Washington coasts indicated 13 groups of 27 fin whales between

June and January. All of the fin whales were observed off the Oregon coast, with all but five whales in waters on the continental slope (656 to 6,562 feet deep). The whales that were not observed in continental slope waters included two seen about 124 miles offshore in November and three viewed on the continental shelf just south of the Columbia River in January. The former group was traveling south, suggesting they were migrating back to the wintering grounds. Except for these two groups of whales, all the other whales were observed during June and July. No calves were observed with any of the whales. Green et al. (1993) reported sighting two fin whales during aerial surveys off the coast of Oregon and Washington between March and May in 1992, but did not report the location. An estimated 3,270 fin whales occur off the coasts of California, Oregon, and Washington during summer and fall, based on shipboard surveys in 1996 by Barlow and Taylor (2001) and in 2001 by Barlow (2003). The minimum population estimate from the 1996 and 2001 surveys was 2,541 with a PBR of 15 whales per year (Carretta et al. 2006). Fin whales can be distinguished from other mysticetes (baleen whales, such as gray, humpback, sei, bowhead, and fin whales) by distinct coloration on the head. The pigmentation differs on the left side and right side, as well as on the dorsal and ventral surface. On the left side, both the dorsal and ventral surfaces are dark slate. On the right side, the dorsal surface is gray and the ventral surface is white (Aguilar 2002). Fin whales in the northern hemisphere typically feed on small schooling fish, planktonic crustaceans, small squid, and zooplankton (Aguilar 2002; Nowak 2003). Based on the Oregon sightings near Washington, it is possible that relatively small numbers of fin whales pass through Washington during winter while migrating south.

Blue Whale

Blue whales are the largest animal, with recorded lengths of from 104 to 107 feet. Females are typically larger than males, and southern hemisphere whales are larger than those of the northern hemisphere (the largest recorded was 92 feet) (Sears 2002). The species is listed as endangered under the ESA (35 FR 8491, June 2, 1970) throughout the range. Three stocks of blue whales inhabit United States waters: the western North Atlantic stock, the Hawaiian stock, and the eastern North Pacific stock. The eastern North Pacific stock feeds in California waters in summer and fall (from June to November) and migrates south to productive areas off Mexico and as far south as the Costa Rica Dome in winter and spring (Angliss and Outlaw 2005; Carretta et al. 2006). Blue whales are very rarely seen off the Oregon coast, and there have been no recent sightings of blue whales off the Washington coast (Calambokidis and Barlow 2004; Calambokidis et al. 2004b; Carretta et al. 2006). Blue whales are found in coastal and deep offshore waters, but also occur on the continental shelf. Blue whales appear to feed almost

exclusively on krill (which are relatively large euphausiid crustaceans) worldwide in areas of cold current upwelling (Nowak 2003; Sears 2002). Some other prey species, including fish and copepods, have been reported as being consumed by blue whales, but these prey are unlikely to contribute substantially to the diet of blue whales (NOAA Fisheries Office of Protected Resources 2006). The best estimate of the eastern North Pacific blue whale stock is 1,744 individuals (Calambokidis and Barlow 2004; Carretta et al. 2006). The minimum population size is 1,384 with a PBR of 1.4 whales per year (Carretta et al. 2006). There is some indication that blue whales increased in abundance in California coastal waters between 1979/1980 and 1991 and between 1991 and 1996. Population estimates in 2000/2001 suggest a decline when compared to previous years. Due to the small sample sizes used in these estimates, the accuracy of this apparent decline is uncertain. Blue whales would not be expected to occur in the project area.

Sei Whale

The sei whale is listed as endangered throughout its range under the ESA (35 FR 8491, June 2, 1970). Sei whales are uncommon off California, Oregon, and Washington (Carretta et al. 2006). Two sei whales were tagged off California in 1962 and 1965 and later commercially taken off the Washington coast in 1969 and British Columbia in 1966 (Rice 1974). No sei whales were observed during aerial surveys Brueggeman et al. (1992) conducted off the coast of Oregon or Washington in 1991 or in 1992, during surveys Green et al. (1993) conducted, or during ship surveys Calambokidis et al. (2004b) conducted from 1995 to 2002. Sei whales are primarily found offshore in deeper water and are not associated with coastal waters. Sei whales primarily prey on copepods and amphipods, but also take euphausiids and small fish (Nowak 2003). The most recent abundance estimate for sei whales off California, Oregon, and Washington out to 300 nautical miles from the coast is 56 whales based on shipboard surveys in 1996 and 2001 (Barlow 2003). Consequently, sei whales would not be expected in the project area.

Right Whale

The North Pacific right whale is listed as an endangered species under the ESA (35 FR 8491, June 2, 1970). It is the least abundant of all large whale species and most marine mammal species. Right whales are found in three general regions: the North Atlantic, the North Pacific, and the Southern Hemisphere. The North Pacific stock has two populations: a Sea of Okhotsk stock and an eastern North Pacific stock. The range of the latter population is thought to include the west coast from Mexico to Alaska (Brownell et al. 2001; Clapham et al. 2004), although few

have been observed off the Washington coast. A group of eight right whales was reported off Destruction Island, Washington, in April 1959 (Fiscus and Niggol 1965). The most recent sighting of a single whale off Cape Elizabeth occurred on May 24, 1992 (Rowlett et al. 1994). Recent extensive ship surveys in western Alaska indicated no sightings of right whales (Zerbini et al. 2006), nor were any seen off Washington during ship surveys from 1995 to 2002 (Calambokidis et al. 2004b). Right whales generally feed on zooplankton, including copepods, near the coast and continental shelf edge. Reliable estimates of population size and trends are not known (Angliss and Outlaw 2005), but observers believe that the North Pacific stock numbers 100 to 200 animals, a small fraction of the pre-whaling abundance (Nowak 2003). This information suggests that a small number of right whales could occur off the Washington coast; however, the probability is low (Carretta et al. 2006).

3.5.3.1.2 Common Species off Washington Coast

Harbor seals, California sea lions, northern fur seals, northern elephant seals, Dall's porpoises, harbor porpoises, Pacific white-sided dolphins, Risso's dolphins, northern right whale dolphins, and minke whales are common in the project area. A short description of these species is provided below. These species could occur in the project area during the proposed whale hunt.

Harbor Seal

For management purposes, three harbor seal stocks are recognized along the west coast of the continental United States, including the California stock, outer coast of Oregon and Washington, and Washington inland waters stock (Carretta et al. 2006) Harbor seals from the last two stocks occur within the project area. Both occur principally in the nearshore zone and are the most common marine mammal in Washington (NMFS 1992). Recent counts show 10,430 seals off the Washington coast and 5,735 in Oregon, totaling 16,165 harbor seals for the outer coast of Oregon and Washington stock; the minimum population is estimated at 22,380 (Carretta et al. 2006; Jeffries et al. 2003). The mean number of seals in the Washington inland waters stock was estimated to be 9,550 in 1999 with a minimum population size of 12,844 seals; more recent estimates are not available (Carretta et al. 2006) The combined PBR for the coastal (1,343) and inland stocks (771) is 2,114 harbor seals. The species occurs year-round in Washington. Harbor seals give birth on shore and nurse their pups for 4 to 5 weeks. After the pups are weaned, they disperse widely in search of food. Pupping along the outer coast of Washington and the Strait of Juan de Fuca occurs in May through July, and additionally in August in the strait. Breeding occurs in the water shortly after the pups are weaned. The Makah U&A contains at least

32 harbor seal haulout sites (Gearin and Scordino 1995). This area is subdivided for convenience into three areas (western Strait of Juan de Fuca complex, Cape Flattery Complex, and the Cape Alava Complex) with variable harbor seal densities within each complex. The western Strait of Juan de Fuca complex has the lowest density (number of seals per nautical mile); the Cape Alava area has the highest density and number of pups (Gearin and Scordino 1995; Jefferies et al. 2000). Common prey include sole, flounder, sculpin, hake, cod, herring, squid, octopus, and, to a lesser degree, salmon (Jeffries and Newby 1986; Orr et al. 2004). Before 2005, the Makah Tribal Council promulgated regulations allowing tribal members to exercise treaty rights for subsistence harvest of harbor seals. An estimated 5 to 15 seals may have been taken for subsistence per year by northwest tribes (Carretta et al. 2006).

California Sea Lion

The California sea lion includes three subspecies of which *Z. c. californianus* (found from southern Mexico to southwestern Canada) occurs in the project area. California sea lions breed on islands in three geographic regions that are used to separate this subspecies into three stocks: (1) the United States stock, which begins at the United States/Mexico border and extends northward into Canada; (2) the Western Baja California stock, which extends from the United States/Mexico border to the southern tip of the Baja California Peninsula; and (3) the Gulf of California stock, which includes the Gulf of California from the southern tip of the Baja California peninsula (Carretta et al. 2006). California sea lions occur seasonally in Washington waters (NMFS 1992). Based on extrapolations from pup counts, the population is estimated between 237,000 and 244,000 sea lions, and it is growing at 5.4 to 6.1 percent per year (Carretta et al. 2006). The minimum population estimate is 138,881 sea lions with a PBR of 8,333 per year (Carretta et al. 2006). Males migrate northward along the coast following the summer breeding season in California. Beginning in August, male California sea lions appear along the outer Washington coast principally in the nearshore and continental shelf zones. Some move into Puget Sound and British Columbia. California sea lions remain in Washington waters through the winter and early spring before returning to California in May and June (Gearin and Scordino 1995; Jeffries et al. 2000). The migration can be characterized as a feeding migration consisting primarily of adult and sub-adult males. California sea lion females and younger animals less than four to five years old tend to remain near the home rookeries throughout the year, or move only as far north as central California. California sea lions are common around Neah Bay during fall, winter, and spring. They are also common inside Neah Bay in April and May; a group of 5 to 10 sea lions feeds on fish scraps around the harbor, and groups of 50 to 100 animals reside on the

west end of Tatoosh Island. Within the project area, small numbers of California sea lions are often sighted in Makah Bay and to the south at Cape Alava where larger numbers haul out at west Bodelteh Island during migration (Gearin and Scordino 1995; Jeffries et al. 2000). As many as 4,000 to 5,000 California sea lions have been observed on the Bodelteh Islands during the fall. Farther south on Carroll Island, 200 to 300 sea lions may haul out during the migration peak. Little is known of their diet on the Washington coast, but in Puget Sound they feed primarily on Pacific whiting, Pacific herring, salmonids, dogfish sharks, and squid (Gearin and Scordino 1995). Before 2005, the Makah Tribe promulgated regulations allowing Tribe members to exercise treaty rights for subsistence harvest of sea lions. Up to two sea lions were taken for subsistence each year (Carretta et al. 2006).

Northern Elephant Seal

Northern elephant seals, estimated to number 101,000 animals, breed off Mexico and California during winter and move northward to feed from Baja California to northern Vancouver Island and far offshore of the Gulf of Alaska and Aleutian Islands (Nowak 2003; Carretta et al. 2006). Populations of northern elephant seals in the United States and Mexico all originally derived from a few tens or a few hundreds of individuals surviving in Mexico after they were nearly hunted to extinction. The California breeding population is now demographically isolated from the Baja California population and is considered a separate stock for management purposes (Carretta et al. 2006). Elephant seals occur off the Washington coast primarily during summer and early fall (Brueggeman et al. 1992) and were the second most common pinniped sighted during summer during ship surveys off the Washington coast from 1995 to 2002 (Calambokidis et al. 2004b). In contrast, all the elephant seals Brueggeman et al. (1992) observed from mid-fall through spring were off the Oregon coast. Most of the elephant seals they encountered were over the continental shelf and slope, at a mean distance of almost 40 miles from the coast. No haulout sites occur in Washington. Elephant seals prey on deepwater and bottom-dwelling organisms, including fish, squid, crab, and octopus (Nowak 2003).

Northern Fur Seal

The eastern Pacific stock of the northern fur seal is estimated to number 688,028 animals; the minimum population estimate is 676,540 with a PBR of 14,546. Based on significant declines in abundance during the 1960s and 1970s, the Pribilof Islands population was listed as depleted under the MMPA in 1984 because population levels had declined to levels lower than 50 percent of those observed in the 1950s (1.8 million animals; 53 FR 17888 18 May 1988) (Angliss and

Outlaw 2005). Causes of decline and current threats are uncertain but may include climate change, vessel and human presence, depletion of prey species, predation, and environmental contamination (NMFS 2007c).

Fur seals are a seasonal migrant off the Washington coast, and they do not breed or haul out (although individuals may infrequently be seen on land mixed with sea lions) in Washington (Angliss and Outlaw 2005). The closest rookeries are in the Bering Sea (Pribilof Islands and Bogoslof Island) and the Channel Islands (San Miguel Island) of California. During the July-August breeding season, most of the population is found on the Pribilof Islands. Females and juveniles of both sexes migrate south in fall into waters over the continental shelf and slope of the eastern North Pacific Ocean, while adult males generally stay in Alaska waters (Gentry 2002). The migration ranges as far south as 30 to 32 degrees north latitude off southern California and northern Baja, Mexico. Fur seals begin the return migration northward in mid-spring; by early summer, most have returned to their breeding islands (Gentry 2002; Nowak 2003).

In Washington, Brueggeman et al. (1992) reported that northern fur seals primarily inhabited the deep offshore waters, but they also used the continental shelf and slope waters. They were observed off the Washington coast year-round, but most individuals (more than 90 percent) were encountered from January through May. Sightings of northern fur seals in the Strait of Juan de Fuca or Puget Sound are rare, but they do occur occasionally (Gearin and Scordino 1995). They feed on walleye pollock, Pacific herring, capelin, squid, and small schooling fishes (Kajimura 1984). Pribilof Islands Aleut Natives take approximately 600 to 800 subadult male fur seals/year for subsistence use (Angliss and Outlaw 2005). Makah Tribe hunters took fur seals from canoes in the open ocean in the late 1800s and into the 1900s, but they do not currently hunt them, nor have they recently been taken incidental to the Makah set net fisheries (Swan 1883; Swan 1887; Sepez 2001; Pamplin 2005a).

Northern Sea Otter

Sea otters occurred historically along the outer coast of Washington; the population was severely over-hunted in the late mid-1700s to 1800s and extirpated in the Pacific Northwest by 1920 (NMFS 1992; Jameson 1995). The last known native sea otters in Washington were taken in Willapa Bay in 1910 (Scheffer 1940). In 1969 and 1970, 59 northern sea otters were transplanted to Washington from Amchitka Island, Alaska (Lance et al. 2004). Although the otters off Washington State are descended from the Amchitka Island sea otters and are, thus, related to the southwest Alaska distinct vertebrate population segment recently listed as threatened under ESA

(70 FR 46366, August 9, 2005), they are geographically isolated from the southwest Alaska population by hundreds of kilometers and are not included in the listing. Sea otters off the Washington coast have been listed as a Washington State endangered species since 1981, due to small population size, restricted distribution, and vulnerability (Lance et al. 2004).

The FWS has conducted cooperative sea otter surveys with WDFW since 1985. In 1985, 65 sea otters were counted, increasing to 276 sea otters in 1991, 814 sea otters in 2005, and 790 sea otters in 2006 (Jameson and Jeffries 2005; Jameson and Jeffries 2006). Laidre et al. (2002) estimated the carrying capacity of sea otters at 1,836 individuals (95 percent confidence interval from 1,386 to 2,286), based on an assumption that sea otters will reoccupy most of their historic habitat along the outer Washington coast (excluding reoccupation of the Columbia River, Willapa Bay, and Grays Harbor estuaries due to significant human alterations and use) and eastward into the Strait of Juan de Fuca as far as Protection Island. The FWS and WDFW uses these estimates in stock assessment reports and recovery plans.

The current sea otter population range extends as far south as Cape Elizabeth on the outer Olympic Peninsula Coast to as far north as Pillar Point, with concentrations near Duk Point, Cape Alava, Sand Point, Cape Johnson, Perkins Reef, and Destruction Island (Figure 3-2). More than half of the population occurs south of La Push, with the single largest concentration of otters located at Destruction Island (Jameson and Jefferies 2005). Sea otters occur nearshore throughout the project area and are being seen more consistently, in lower numbers, in the Strait of Juan de Fuca as far inland as Port Townsend. A large group of males moved into the Strait of Juan de Fuca during winter in the 1990s (Lance et al. 2004), but have not done so since 2000. Sea otters generally inhabit shallow coastal waters less than 1 mile from shore, but small numbers of sea otters have been found out to at least 3 miles from the Cape Alava area. In Washington, sea otters generally stay in relatively shallow waters and forage on a variety of marine invertebrates, including sea urchins, throughout the entire depth range from intertidal areas out to at least 20 fathoms (120 feet) (Lance et al. 2004). Sea otters pup in late winter and early spring, and the pups are weaned in late summer and early fall. Reproduction occurs throughout the area (Lance et al. 2004). Post-weaning mortality is higher for males than females and increases as resources become limited (Estes and Bodkin 2002). Low levels of mortality occur in adult females as a result of injury by males during copulation (Estes and Bodkin 2002). Sea otters are preyed upon by white sharks, killer whales, and, infrequently, Steller sea lions. Of the marine mammals within the project area, they (and northern fur seals) are most susceptible to mortality caused by oil spills due to the importance of their fur in regulating metabolism (Ballachey et al.

1994). The expanding sea otter population has had a substantial impact on the Makah Tribe's sea urchin fishery (Pamplin 2005a). Two sea otters were taken incidental to the Makah set net fisheries in 2004, and none were taken in 2005 (Pamplin 2005a).

Harbor Porpoise

Two harbor porpoises stocks are recognized within the project area, the Washington inland waters stock and the coastal Oregon/Washington stock. Extensive interchange is likely between the two stocks. The former is estimated at 3,509 animals with a minimum population estimate of 2,545 and a PBR of 20 porpoises per year (Carretta et al. 2006). The coastal Oregon/Washington stock is estimated to number 39,586 animals with a minimum population estimate of 28,967 and a PBR of 290 per year (Carretta et al. 2006). This stock is present year-round off the Washington coast, and those in the inland stock are present throughout most of the year in inland waters (Carretta et al. 2006). Numbers of harbor porpoises are particularly high in the fall and winter, low in the summer, and intermediate in the spring (Brueggeman et al. 1992; Carretta et al. 2006). They are widespread throughout the inland and coastal waters of Washington with the exception of southern Puget Sound (NMFS 1992). Scheffer and Slipp (1948) provide a historical account of this species in Washington.

Harbor porpoises are known to calve and breed in Washington, and they generally give birth in summer from May through July. Calves remain dependent for at least six months (Leatherwood et al. 1982). Harbor porpoise are usually shy and avoid vessels; thus, they are difficult to approach. The species frequents inshore areas, shallow bays, estuaries, and harbors. Harbor porpoises are found almost exclusively shoreward of the 100-fathom (600-foot) contour line along the Pacific coast, with the vast majority found inside the 25-fathom (150-foot) curve (Gearin and Scordino 1995; Green et al. 1992). The primary prey of harbor porpoise are small fish and squid typically found in shallow waters. Bottom-dwelling fishes and small pelagic schooling fishes with high lipid content, including herring and anchovy, are common prey (Bjorge and Tolley 2002; Leatherwood and Reeves 1986). Small numbers of harbor porpoise have recently been taken incidentally in Makah set net fisheries, including two individuals in 2004 and none in 2005 (Gearin et al. 2000; Carretta et al. 2006; Pamplin 2005a).

Dall's Porpoise

Dall's porpoises are common off the Washington coast, but their distribution and abundance are variable and likely linked to variable oceanographic conditions (Carretta et al. 2006). They are probably the most widely distributed cetacean in the temperate and subarctic regions of the North

Pacific and Bering Sea (Leatherwood et al. 1982). An estimated 99,517 Dall's porpoises occur in the California, Oregon, and Washington stock with a minimum population estimate of 75,915 and a PBR of 729 animals per year (Carretta et al. 2006). They were the most common small cetacean observed in ship surveys off the Washington coast from 1995 to 2002 with 115 sightings of 406 animals (Calambokidis et al. 2004b). Brueggeman et al. (1992) reported 152 groups containing 341 Dall's porpoise, including four calves, during surveys off the coast of Oregon and Washington. Porpoises were most common during fall, least common during winter, and intermediate in occurrence during spring and summer, although encounter rates were not substantially different among seasons, suggesting that a resident population occurs off the coast of Oregon and Washington. Encounter rates were highest over the continental slope, lowest on the continental shelf, and intermediate in offshore waters. They rarely occurred in shallow coastal waters. Dall's porpoises were observed in small groups, which are consistent with observations reported in other studies, although aggregations of at least 200 individuals have been reported. They occur only rarely in groups of mixed species, although they are sometimes seen in the company of harbor porpoises and gray whales (Klinowska 1991; Reeves and Leatherwood 1994). Dall's porpoises apparently feed at night. They depend, to some degree, on the deep scattering ocean layer, through which fauna travel upwards each night from the deeper parts of the ocean's water column. Prey species, as determined from stomach contents, include squid and schooling fishes (Jefferson 2002; Klinowska 1991; Reeves and Leatherwood 1994). Killer whales and sharks are believed to be the primary natural predators of Dall's porpoises.

Pacific White-Sided Dolphin

The Pacific white-sided dolphin numbers an estimated 59,274 animals in the California, Oregon, and Washington stock, and it is one of the most abundant dolphins occurring year around off the coast of Washington (Brueggeman et al. 1992; Green et al. 1993; Carretta et al. 2006). The estimated minimum population level is 39,822 with a PBR at 382 dolphins per year (Carretta et al. 2006). Calambokidis et al. (2004b) recorded 28 sightings of 1,133 individuals in offshore waters during ship surveys off the Washington coast from 1995 to 2002. Some seasonal shifts occur off the coast of Oregon and Washington where dolphins are more common in offshore waters during spring. Their distribution shifts to continental slope waters during summer and fall, in rough synchrony with the movements of prey (VanWaerebeek 2002). Pacific white-sided dolphins may also move north to south seasonally (Forney and Barlow 1998). Peak abundances off the Oregon and Washington coast have been reported during May (Brueggeman et al. 1992; Buckland et al. 1993). Pacific white-sided dolphins consume a wide variety of fishes and

cephalopods. Off the coast of British Columbia, herring was the most commonly occurring prey species, followed by salmon, cod, shrimp, and capelin (Heise 1997). Pacific white-sided dolphins have been known to occur in association with other marine mammals, including Dall's porpoise, Risso's dolphin, northern right whale dolphin, humpback whale, and gray whale (Brueggeman et al. 1992).

Risso's Dolphin

Risso's dolphins are distributed world-wide in warm-temperate and tropical waters along the continental shelf and slope edge. They are estimated to number 16,066 animals in the California, Oregon, and Washington area with a minimum population level of 12,748 and a PBR of 115 per year (Carretta et al. 2006). Risso's dolphins are common off the coast of Washington, where they are present year-round (Brueggeman et al. 1992). Nine sightings of 79 individuals were reported off the Washington coast during ship surveys from 1995 to 2002 (Calambokidis et al. 2004b). They are most common during spring and summer, least common in winter, and intermediate in occurrence during the fall (Brueggeman et al. 1992). Calves have been observed off the coast of Oregon and Washington during May, July, and November. Risso's dolphins primarily inhabit continental slope waters, but they also occur in lower numbers near the edge of the continental shelf. Risso's dolphins are consistently found on the continental slope and in shelf-edge waters throughout the year, suggesting there is no inshore to offshore movement pattern. However, there may be some seasonal north to south movement of Risso's dolphins between Oregon/Washington and California, based on the shifts in abundance between the two regions, possibly related to prey movements. Principal prey include cephalopods and fish, and limited behavioral research suggests that they feed primarily at night (Baird 2002; Nowak 2003). Risso's dolphins have been known to occur in association with other marine mammals, including Pacific white-sided and northern right whale dolphins (Brueggeman et al. 1992). No habitat issues are known to be of concern for this species, and human-caused mortality from commercial fishing and other sources is low (Carretta et al. 2006).

Northern Right Whale Dolphin

The California, Oregon, and Washington stock of the northern right whale dolphin is estimated at 20,362 animals with a minimum population estimate of 16,417 and a PBR of 164 dolphins per year (Carretta et al. 2006). The species is relatively common off the coast of Washington, which is toward the northern end of its range in the eastern North Pacific Ocean (Brueggeman et al. 1992). The northern right whale dolphin has been reported in Washington waters during all seasons except

winter (Calambokidis et al. 2004b; Brueggeman et al. 1992). Numbers are highest in the fall and lowest during spring and summer. Use of the continental slope waters is considerably higher than the offshore water. Few dolphins occur in continental shelf waters. While northern right whale dolphins show a seasonal abundance pattern off the Washington coast that is somewhat opposite of the California pattern, it is not clear whether they move between the two areas. They are gregarious animals, often traveling in groups of 2,000 to 3,000 animals. The primary prey for this species include lanternfish, Pacific whiting, saury, mesopelagic fish, and squid (Lipsky 2002). The northern right whale dolphin has been frequently reported in association with Pacific white-sided dolphins (Leatherwood and Walker 1979; Brueggeman et al. 1992).

Minke Whale

There is no population estimate for minke whales in the North Pacific Ocean. The number off the coast of California, Oregon, and Washington is, however, estimated to be 1,015 whales based on vessel surveys between 1996 and 2001, with a minimum population size of 585 whales and a PBR of 5.8 whales per year (Carretta et al. 2006). Minke whales reside off the Washington coast year-round (Carretta et al. 2006). They typically occur as single animals, rather than in groups. Calambokidis et al. (2004b) reported four sighting of four individuals during ship surveys off the Washington coast from 1995 to 2002. Brueggeman et al. (1992) encountered four single minke whales, including three off the Oregon coast and one off the Washington coast. Most were on the continental shelf. Minke whales are also known to enter shallow bays and estuaries (Nowak 2003). Green et al. (1993) reported 10 groups of 12 minke whales off the Oregon and Washington coasts between March and May, but did not give their locations or indicate the distributions between the two states. Minke whales in the North Pacific typically prey on euphausiids, Japanese anchovy, Pacific saury, walleye pollock, small fish, and squid (Perrin and Brownell 2002; Nowak 2003).

3.5.3.1.3 Uncommon Marine Mammal Species off Washington Coast

Nine other uncommon marine mammals are occasionally sighted off the Washington coast. They include common dolphin, striped dolphin, false killer whale, pilot whale, pygmy sperm whale, Baird's beaked whale, Curvier beaked whale, Hubb's beaked whale, and Stejneger's beaked whale (Table 3-11). Most of these species would be expected to occur seasonally in low numbers in deeper offshore waters. Brueggeman et al. (1992) observed a small number of false killer whales in the spring and beaked whales in the fall off the Washington coast. Five groups of 21 Baird's beaked whales were also observed, but all were off the Oregon coast during spring and

summer, suggesting low occurrence by this species in Washington waters. While there is some limited information on this group of uncommon marine mammals, little is known about their use of waters off the Washington coast. Summary information for each species can be found in Carretta et al. (2004), Angliss and Outlaw (2005), and Perrin et al. (2002).

3.5.3.2 Other Marine Wildlife

In addition to several species that are listed as threatened or endangered under ESA, the project area provides breeding and wintering habitat for numerous species of seabirds. The following sections provide descriptions of ESA-listed species and other seabird species. The latter discussion is organized by the habitat types with which the species are associated.

3.5.3.2.1 ESA-Listed Species

FWS (2004) identified the following ESA-listed marine wildlife species as occurring in the project area: brown pelican, bald eagle, and marbled murrelet. The agency also indicated that short-tailed albatross, leatherback sea turtles, green sea turtles, loggerhead sea turtles, and olive ridley sea turtles could occur in the area. Each of these species is described further below.

Brown Pelican

Brown pelicans are federally listed as endangered under ESA (35 FR 8491, June 2, 1970). In the project area, brown pelicans occur as non-breeding individuals, where they are present from June to October (Seattle Audubon Society 2005). They forage in marine waters, particularly in shallow areas, including bays and estuaries, and near offshore islands, spits, breakwaters, and open sand beaches. The birds rarely forage more than 40 miles from shore (FWS 2005b). Their diet consists of schooling anchovies, herring, Pacific mackerel, minnow, and sardines (Monterey Bay Aquarium 2003). Brown pelicans roost on offshore islands in the project area (Seattle Audubon Society 2005).

Marbled Murrelet

The marbled murrelet is federally listed as threatened under the ESA (57 FR 45328, October 1, 1992). This species nests in mature and old-growth forests and forages in marine waters. Nearshore marine waters within 1.2 miles are considered essential to the recovery of the species (FWS 1997). Newer information indicates murrelets occur out to 5 miles from shore with the highest mean densities closer to shore (Raphael et al. 2007). Critical marine foraging habitat includes "proximity of old-growth forests, distribution of rocky shoreline/substrate versus sand shoreline/substrate, and abundance of kelp" (Thompson 1996, as cited in FWS 1997). Key prey species include Pacific sand lance, Pacific herring, northern anchovy, smelt, and possibly sardines, although the birds will forage on a variety of other small fish and macrozooplankton.

In the project area, marbled murrelets occur throughout the year in the nearshore marine waters and bays, and must select areas which provide adequate prey resources within swimming distance for about two months during the flightless molting period (July to December)(Carter and Stein 1995). As indicated in a study by Thompson (1999), marbled murrelets are more abundant closer to shore. In Thompson's study (1996, as cited in FWS 1997), murrelet density declined with increasing distance from the coastline. Survey data collected under the auspices of the Northwest Forest Plan effectiveness monitoring indicate that murrelet densities in the project area begin to decline 1.9 miles from shore (Lynch 2006 pers. comm.) and Huff et al. (2006) reported that only a small proportion of the population (generally less than 5 percent) is found beyond 1.86 miles from shore. The density of marbled murrelets is known to be higher in the Strait of Juan de Fuca (Huff et al. 2006). Survey results also indicated that marbled murrelet density from 2000 to 2004 in the project area vicinity (specifically along the outer Washington Coast from Cape Flattery to Point Grenville) ranged from 0.4 birds per square mile (in 2000) to 0.9 birds per square mile (in 2004) (Lance and Pearson 2005).

Short-tailed Albatross

The short-tailed albatross, which is federally listed as endangered under ESA, is an extremely rare bird off Washington's coastline (65 FR 46643, July 31, 2001). According to the Seattle Audubon Society's BirdWeb, there were only a few valid records of the short-tailed albatross on the west coast south of Alaska between 1940 and 1990, with most seen between April and August (Seattle Audubon Society 2005). Since the early 1990s, sightings have increased, and a few birds are reported off the west coast annually. Sightings of these pelagic birds are generally more than 20 miles from the coastline. Short-tailed albatross feed primarily on squid (Seattle Audubon Society 2005).

Sea Turtles

Four species of sea turtles occur off Washington's outer coast: the leatherback turtle, green turtle, loggerhead turtle, and olive ridley turtle. Leatherback sea turtles are federally listed as endangered under ESA, while the three other sea turtles are federally listed as threatened in the Washington area (35 FR 8491, June 2, 1970; 43 FR 32800, July 28, 1978). Leatherback sea turtles are associated with pelagic habitats and occur with some regularity in the deep waters off the coast of Washington (Bowlby et al. 1994). In addition, these turtles occasionally have been sighted in bays and estuaries, although bays and estuaries are not their preferred habitat (Brown et al. 1995). Leatherback sea turtles' diet consists almost exclusively of jellyfish (Sea Turtle, Inc. 2005). The species does not nest in Washington State.

The other three sea turtle species (green, loggerhead, and olive ridley) are strictly warmer water species, and they occur infrequently off the coast of Washington during the summer (Brown et al. 1995). Higher occurrences of the sea turtles coincide with El Niño years that are characterized by warmer currents in the area. Diet of the three species varies. The green sea turtle is mostly herbivorous and feeds on a variety of sea grasses and marine algae; the loggerhead is primarily carnivorous and feeds on a variety of crabs, jellyfish, shellfish, and sponges; and the olive ridley is omnivorous and feeds primarily on crustaceans, mollusks, and tunicates (Sea Turtle, Inc. 2005). None of these sea turtles nests in Washington State.

3.5.3.2.2 Non-Listed Birds and Their Associated Habitats

The project area provides important habitat for bald eagles and some of the largest seabird colonies in the continental United States. The area also provides wintering and other non-breeding habitat for marine birds. Considering all seasonal uses, more than 100 marine bird species use the marine waters, associated beaches, and offshore islands within the project area, with 20 of these species known to nest in the project area (Table 3-12).

The bald eagle was removed from the ESA list of threatened species on July 9, 2007 (72 FR 37346). These birds are present in Washington State year-round, although individual birds may be present for only a portion of the year (e.g., the wintering period). Bald eagles nest in large, superdominant trees, generally away from intense human activity, and they forage in nearby waters with abundant fish, waterfowl, and seabird prey (Stinson et al. 2001). Perch sites generally consist of large trees along shorelines. Roost sites are typically large trees within forested stands that are located within 0.67 mile of foraging areas (Stinson et al. 2001).

Bald eagle nest sites occur throughout the proposed action area coastline. Most of the Washington State bald eagle wintering population occurs along major salmon rivers (e.g., Skagit, Nooksack, and Columbia Rivers), but the birds also winter along the state's outer coastline and along the Strait of Juan de Fuca, including portions of the project area (Stinson et al. 2001).

The marine environments used by marine birds in the project area can be divided into six habitat types: (1) coastal beaches, bays, and estuaries; (2) coastal headlands and islands; (3) nearshore marine waters; (4) inland marine deeper waters; (5) marine shelf; and (6) oceanic waters. Habitat types for marine birds are based on Buchanan et al. (2001), but were modified slightly for consistency with marine fish habitat types (NMFS 2005a) and marine mammal habitats. This section describes these habitats and their associated bird species.

1 **TABLE 3-12. MARINE BIRD SPECIES PRESENT IN THE MAKAH U&A**

Common Name	*Scientific Name*
LOONS AND GREBES	***GAVIIDAE AND PODICIPEDIDAE***
Common loon	*Gavia immer*
Pacific loon	*Gavia pacifica*
Red-throated loon	*Gavia stellata*
Yellow-billed loon	*Gavia adamsii*
Horned grebe	*Podiceps auritus*
Red-necked grebe	*Podiceps grisegena*
Western grebe	*Aechmophorus occidentalis*
Eared grebe	*Podiceps nigricollis*
TUBENOSES	***PROCELLARIIFORMES (DIOMEDEIDAE, PROCELLARIIDAE AND HYDROBATIDAE)***
Black-footed albatross	*Diomedea nigripes*
Short-tailed albatross	*Phoebastria albatrus*
Laysan albatross	*Diomedea immutabilis*
Buller's shearwater	*Puffinus bulleri*
Flesh-footed shearwater	*Puffinus carneipes*
Pink-footed shearwater	*Puffinus creatopus*
Short-tailed shearwater	*Puffinus tenuirostris*
Sooty shearwater	*Puffinus griseus*
Northern fulmar	*Fulmaris glacialis*
Fork-tailed storm petrel*	*Oceanodroma furcata*
Leach's storm petrel*	*Oceanodroma leuchorhoa*
PELICANS AND CORMORANTS	***PELECANIDAE AND PHALOCROCORACIDAE***
Brown pelican	*Pelecanus occidentalis*
Brandt's cormorant*	*Phalacrocorax penicillatus*
Double-crested cormorant*	*Phalacrocorax auritis*
Pelagic cormorant*	*Phalacrocorax pelagicus*
SWANS, GEESE, AND DUCKS	***ANATIDAE***
Trumpeter swan	*Cygnus buccinator*
Tundra swan	*Cygnus columbianus*

Common Name	*Scientific Name*
Aleutian Canada goose	*Branta canadensis leucopareia*
Brant	*Branta bernicla*
Black scoter	*Melanitta nigra*
Surf scoter	*Melanitta perspicillata*
White-winged scoter	*Melanitta fusca*
Harlequin duck	*Histrionicus histrionicus*
Oldsquaw	*Clangula hyemalis*
Bufflehead	*Bucephala albeola*
Common goldeneye	*Bucephala clangula*
Barrow's goldeneye	*Bucephala islandica*
Greater scaup	*Aythya marila*
Lesser scaup	*Aythya affinis*
Canvasback	*Aythya valisineria*
Red-breasted merganser	*Mergus serrator*
Common merganser	*Mergus merganser*
Hooded merganser	*Lophodytes cucullatus*
Gadwall	*Anas strepera*
Eurasian widgeon	*Anas penelope*
American widgeon	*Anas americana*
Mallard	*Anas platyrhynchos*
Green-winged teal	*Anas crecca*
Blue-winged teal	*Anas discors*
Northern shoveler	*Anas clypeata*
Northern pintail	*Anas acuta*
Ruddy duck	*Oxyura jamaicensis*
RAILS, GALLINULES, AND COOTS	***RALLIDAE***
American coot	*Fulica americana*
EAGLES, OSPREYS AND FALCONS	***FALCONIFORMES***
Bald eagle*	*Haliaeetus leucocephalus*
Osprey*	*Pandion haliaetus*
Peregrine falcon*	*Falco peregrinus*

Common Name	*Scientific Name*
OYSTERCATCHERS	***HAEMATOPODIDAE***
Black oystercatcher*	*Haematopus bachmani*
PLOVERS	***CHARADRIIDAE***
Killdeer*	*Charadrius vociferous*
Semipalmated plover	*Charadruis semipalmatus*
American golden plover	*Pluvialis dominicus*
Black-bellied plover	*Pluvialis squatarola*
SANDPIPERS, TURNSTONES, SURFBIRDS, AND PHALAROPES	***SCOLAPACIDAE***
Black turnstone	*Arenaria melanocephala*
Ruddy turnstone	*Arenaria interpres*
Surfbird	*Aphriza virgata*
Marbled godwit	*Limosa fedoa*
Greater yellowlegs	*Tringa melanoleuca*
Lesser yellowlegs	*Tringa flavipes*
Spotted sandpiper*	*Actitis macularia*
Whimbrel	*Numenius phaeopus*
Wandering tattler	*Heteroscelus incanus*
Long-billed dowitcher	*Limnodromus scolopaceus*
Short-billed dowitcher	*Limnodromus griseus*
Rock sandpiper	*Calidris ptilocnemis*
Baird's sandpiper	*Calidris bairdii*
Dunlin	*Calidris alpina*
Least sandpiper	*Calidris minutilla*
Sanderling	*Calidris alba*
Western sandpiper	*Calidris mauri*
Red phalarope	*Phalaropus fulicaria*
Red-necked phalarope	*Phalaropus lobatus*
Northern phalarope	*Lobipes lobatus*
JAEGERS AND SKUAS	***STERCORARIINAE***
Long-tailed jaeger	*Stercorarius longicaudus*

Common Name	*Scientific Name*
Parasitic jaeger	*Stercorarius parasiticus*
Pomarine jaeger	*Stercorarius pomarinus*
South polar skua	*Catharacta mccormicki*
GULLS AND TERNS	***LARIDAE***
Bonaparte's gull	*Larus philadelphia*
California gull	*Larus californicus*
Glaucous-winged gull*	*Larus glaucescens*
Heerman's gull	*Larus heermanni*
Herring gull	*Larus argentatus*
Mew gull	*Larus brachyrhynchos*
Ring-billed gull	*Larus delawarensis*
Sabine's gull	*Xema sabini*
Thayer's gull	*Larus thayeri*
Western gull*	*Larus occidentalis*
Black-legged kittiwake	*Rissa tridactyla*
Caspian tern	*Sterna caspia*
Common tern	*Sterna hirundo*
Forster's tern	*Sterna forsteri*
Arctic tern	*Sterna paradisaea*
ALCIDS	***ALCIDAE***
Ancient murrelet	*Synthliboramphus antiquum*
Cassin's auklet*	*Ptychoramphus aleutica*
Common murre*	*Uria aalge*
Marbled murrelet	*Brachyramphus marmoratus*
Pigeon guillemot*	*Cepphus columbia*
Rhinoceros auklet*	*Cerorhinca monocerata*
Tufted puffin*	*Lunda cirrhata*
KINGFISHERS AND HERONS	***ALCEDINIDAE AND ARDEIDAE***
Belted kingfisher*	*Ceryle alcyon*
Great blue heron*	*Ardea herodias*
Green heron	*Butorides striatus*

Common Name	*Scientific Name*
American bittern	*Botaurus lentiginosus*

Sources: Speich and Wahl 1989; Peterson 1990; Buchanan et al. 2001; FWS 2005c.

* = species known to nest in the area.

Coastal Beaches, Bays, and Estuaries

The project area includes several beaches, bays, and estuaries (Figure 3-2). Bays and estuaries provide concentrations of nutrients and forage for marine birds and shorebirds such as loons, grebes, mergansers, scoters, dunlins, plovers, and sandpipers. Beaches, particularly those with fine-grained sand, provide forage areas for several shorebird species, including sanderlings, dunlins, and killdeer. Human-made structures, such as jetties, pilings, and buoys, provide important roosting habitat for cormorants, gulls, and other birds. Approximately 49 marine bird species in Washington State are closely associated with beaches, bays, and estuaries; 37 marine bird species are generally associated; and another 16 marine bird species occasionally use beaches, bays, and estuaries (Table 3-13). Bird densities along the beaches and in the bays and estuaries are particularly high during spring and fall migration during winter.

TABLE 3-13. MARINE BIRD SPECIES RICHNESS IN MARINE HABITATS BASED ON HABITAT ASSOCIATION

	HABITAT USE (RECORDED AS NUMBER OF SPECIES)			
HABITAT TYPE	CLOSELY ASSOCIATED[1]	GENERALLY ASSOCIATED[2]	OCCASIONAL USE[3]	TOTAL
Beaches, bays, and estuaries	49	37	16	102
Headlands and islands	22	14	2	38
Nearshore marine	31	26	10	67
Inland marine	21	17	9	47
Marine shelf	28	15	9	52
Oceanic	18	7	3	28

[1] Closely associated: A species is widely known to depend on a habitat for part or all of its life-history requirements.

[2] Generally associated: A species exhibits a high degree of adaptability and may be supported by a number of habitats. These habitats play a supportive role for the species' maintenance and viability.

[3] Occasional use: A species demonstrates occasional use of a habitat. The habitat provides marginal support to the species for its maintenance and viability.

Source: Table adapted and modified from Buchanan et al. (2001). Because some species are associated with more than one habitat type, totals within columns are not additive.

Coastal Headlands and Islands

This habitat type includes coastal headlands and bluffs, rocky cliffs, and offshore rocks and islands. In the project area, steep headlands, bluffs, and cliffs are used by ledge-nesting birds,

including peregrine falcons, pelagic cormorants, and common murres. Offshore islands and rocks support large breeding colonies of seabirds (Speich and Wahl 1989; Buchanan et al. 2001; FWS 2005c).

Comprehensive information on seabird colony breeding densities in Washington is available from Speich and Wahl (1989). These researchers summarized seabird colony data from surveys conducted from 1978 to 1982. In the Cape Flattery survey region, which extends along the outer Washington coast from Cape Flattery to Carroll Island and inland along the Strait of Juan de Fuca to Sail Rock, surveyors documented 13 breeding seabird species, the most common of which were Cassin's auklets, Leach's storm-petrels, and tufted puffins (Table 3-14). Sites with the highest recorded abundance of seabird colonies (all species combined) in this region include Carroll Island (18,876 breeding seabirds), Bodelteh Island (11,618 breeding seabirds), and the Tatoosh Islands (3,528 breeding seabirds). In addition to the survey sites from the Cape Flattery survey region, the Speich and Wahl report includes data from Jagged Island, near the southern boundary of the Makah U&A. The surveyors recorded 37,057 breeding seabirds on Jagged Island, including 20,000 Leach's storm-petrels, 7,800 tufted puffins, and 8,000 Cassin's auklets (Speich and Wahl 1989).

TABLE 3-14. BREEDING SEABIRD SPECIES AND ABUNDANCE IN THE VICINITY OF CAPE FLATTERY

SPECIES	APPROXIMATE NUMBER OF BREEDING BIRDS
Cassin's auklet	24,000
Leach's storm-petrel	11,000
Tufted puffin	8,700
Glaucous-winged or western gulls	4,400
Fork-tailed storm-petrel	3,700
Common murre	900
Pelagic cormorant	900
Rhinoceros auklet	200
Double-crested cormorant	150
Pigeon guillemot	150
American black oystercatcher	60
Brandt's cormorant	10

Source: Speich and Wahl (1989)

A variety of shorebirds (such as plovers, oystercatchers, sanderlings, and sandpipers) uses offshore rocks and islands and their associated tidal areas for foraging and roosting. The larger islands (including Ozette Island and the Bodelteh Islands) are used by several raptors (such as peregrine falcons) for foraging and occasionally nesting. Passerines (such as swallows and

sparrows) use these islands for nesting, foraging, and migration resting areas (FWS 1985). Nesting great blue herons have also been documented on the larger islands (FWS 1985). The island vicinities are also used by migrating and wintering marine birds (such as gulls, loons, grebes, and scoters). Buchanan et al. (2001) indicate that 22 marine bird species in Washington are closely associated with headlands and offshore islands (Table 3-13).

Nearshore Marine Zone

The nearshore marine habitat zone includes those marine waters along shorelines that are not significantly affected by freshwater inputs (i.e., excludes bays and estuaries) (Buchanan et al. 2001). Nearshore marine habitat includes both nearshore marine waters and inland marine deeper waters. Nearshore marine waters extend from the high tide line to a depth of approximately 66 feet (Buchanan et al. 2001). Typical birds that forage in nearshore marine waters include common murres, sooty shearwaters, western grebes, Brandt's cormorants, and rhinoceros auklets. Species richness and bird densities are greatest in winter, although common murres, rhinoceros auklets, and sooty shearwaters may concentrate in large numbers during the summer (Buchanan et al. 2001). A variety of common marine birds (e.g., phalaropes, other shorebirds, and waterfowl) also uses nearshore marine habitats as migration corridors (Buchanan et al. 2001). Buchanan et al. (2001) indicate that 31 bird species in Washington are closely associated with nearshore marine waters (Table 3-13).

Within the project area, inland marine deeper waters include waters ranging from 66 feet deep within the western portion of the Strait of Juan de Fuca up to 120 feet deep. Species richness is relatively low in this area, with richness and bird densities higher in winter than summer (Table 3-13) (Buchanan et al. 2001). Common wintering birds in the area include western grebes, common murres, scoters, phalaropes, mergansers, buffleheads, and goldeneyes (Buchanan et al. 2001; Nysewander et al. 2004). Murres are also common in summer, along with cormorants and auklets.

Continental Shelf

Along the outer coast of Washington, the continental shelf habitat includes those marine waters from approximately 120 to 600 feet deep (Buchanan et al. 2001; as modified by NMFS 2005a). As with the nearshore marine habitat, the continental shelf provides foraging habitat and a migration route for a variety of marine birds. In Washington, 28 birds are highly associated with continental shelf habitat (Table 3-13). Typical birds that forage in the shallower portions of the continental shelf are common murres, rhinoceros auklets, tufted puffins, and sooty shearwaters. Typical birds in the outer, deeper portions of the continental shelf include albatrosses, fulmars,

storm-petrels, and shearwaters (in addition to the sooty shearwater). Species use varies by season, with the most species during winter and the fewest species during summer (Buchanan et al. 2001). Bird densities are greatest in summer and early fall, when both summer residents and migrant phalaropes, jaegers, terns, and alcids are present (Buchanan et al. 2001).

Continental Slope

Oceanic waters include the marine slope (waters from 600 to 4,200 feet deep) and offshore areas (waters greater than 1.25 miles deep) (Buchanan et al. 2001; as modified by NMFS 2005a). Species richness and bird densities in oceanic waters are diminished compared to the other marine habitats, presumably due to the lower abundance of food in oceanic waters (Table 3-13; Buchanan et al. 2001). As with the continental shelf, bird densities in oceanic waters are greatest in late summer to early fall, when both summer residents and fall migrants are present. Characteristic bird species of the continental shelf include the black-footed albatross, fork-tailed storm-petrel, northern fulmar, herring gull, and black-legged kittiwake.

3.5.3.3 Sensitivity of Wildlife to Noise and Other Disturbance

This section describes the sensitivity of marine wildlife species to noise and other disturbance. Anthropogenic noise can be either transient or continuous and can result in a variety of effects with consequences ranging from none to severe (Würsig and Richardson 2002). Examples of transient noise include helicopters, planes, and explosions; examples of continuous noise include ships underway and dredging activities. The discussion that follows focuses on wildlife sensitivity to noise potentially generated from activities associated with a Makah whale hunt, including aircraft overflights, boat traffic, and use of gunfire or explosives. See Section 3.11, Noise, for a discussion of key concepts related to noise, as well as existing noise levels in the project area.

Marine mammals may respond to noise and other disturbance in many ways, including changes in behavior, avoidance reactions, masking, hearing impairment, and nonauditory physiological effects and stress (Würsiig and Richardson 2002). For marine mammals that rely on sound for communication, finding prey, avoiding predators, and probably navigation, perturbations involving noise could have negative impacts on fitness or survival.

Effects of disturbance on marine birds can range from temporary minor behavioral changes, such as indicating an alert response, to nest abandonment. Bird responses depend on a variety of factors as described further in the sections below (Carney and Sydeman 1999; PRBO 2005). Colonial nesting birds are particularly vulnerable to disturbance due to their high nesting densities

and group behavior; when one bird responds to a given disturbance (e.g., flushing from its nest), other birds often follow (Rodgers and Smith 1995).

3.5.3.3.1 Aircraft Overflights

Based on a review of studies of response of species found in west coast National Marine Sanctuaries, Moore (1997) concluded that aircraft overflights "can and do disturb wildlife." Disturbance varies by species and the specifics of the situation, however. Reactions among some bird species may range from increased vigilance and attentiveness (including scanning by head-turning) to flushing from a nest or perch (Brown 1990; Stalmaster and Kaiser 1997; Giese and Riddle 1999; Ward et al. 1999). In similar circumstances, other species may not react at all (Parrish et al. 2005). In their review of overflight and wildlife disturbance, the National Park Service (1995) indicated mixed results, with some species exhibiting response to overflights, but other species showing minimal or no response. At least one study (peregrine falcons) indicated no apparent change in parental behavior from low (less than 500 feet) military overflights, while another study (waterfowl) found minimal disturbance caused by military overflights (Parrish et al. 2005). With increasing numbers of overflights, some wildlife may habituate to aircraft noise (e.g., black ducks), whereas other species do not (e.g. wood ducks, black brant, emperor, and Canada geese) (Conomy et al. 1998; Ward and Stein 1989).

In general, conclusions based on responses of one species are not necessarily applicable to another species (Manci et al. 1988); similarly, responses to one aircraft type may differ from responses to other types, even within a single species (National Park Service 1995; Ward et al. 1999). In a field study using playback of recordings of overflights to measure effects on seabirds, Brown (1990) found that the level of response increases with increasing noise. This is notable because not all aircraft produce the same amount of noise; thus, a quieter closer aircraft may cause less disturbance than a noisier aircraft farther away (Parrish et al. 2005). In a study of nesting osprey, Trimper et al. (1998) found that adult osprey did not appear to be disturbed by military overflights at various distances, approximately 2 miles from the nest, but reacted strongly to float planes approaching within 4.8 miles. Parrish et al. (2005) noted that helicopters typically cause more disturbance than other aircraft types.

Based on observations of marine birds and aircraft overflights at Tatoosh Island, Parrish et al. (2005) drew the following general conclusions:

1. Aircraft type has a substantial effect on disturbance level, independent of altitude, with louder aircraft having a greater effect.

2. Immediate geomorphology has an effect on disturbance level, as concave surfaces (bowls) concentrate sound whereas convex surfaces dispel sound.

3. The timing of the disturbance event within the breeding season has an effect on disturbance level; earlier in the season (before egg laying), birds are more likely to exhibit signs of disturbance (culminating in temporary evacuation of nesting or loafing sites), whereas later in the season (when pairs have eggs or chicks), birds may remain on nests even during elevated levels of disturbance.

4. Not all species respond equally. Disturbance varies by species and the specifics of the situation such that even related species differ in their responses. Disturbance may also not occur or be minimal. The lateral distance of the aircraft also strongly affects whether wildlife are disturbed. The correlation between distance and increased disturbance may result from increasing noise levels. The sudden appearance of aircraft, especially in the case of infrequent overflights, may also disturb wildlife.

5. Based on observed disturbance caused by overflights, several authors conclude that aircraft altitude restrictions should be developed or maintained, with recommendations for the distance aircraft should stay from wildlife ranging from 500 to 5,000 feet, depending on the species under consideration (Giese and Riddle 1999; Grubb and Bowerman 1997; Stalmaster and Kaiser 1997).

6. For any particular aircraft type, flying at lower altitudes generally increases the level of disturbance.

Few studies have documented the response of marine mammals to overflights (Parrish et al. 2005). Studies measuring the response of marine animals to noise were summarized by Myrberg (1990), who noted numerous reports of marine mammal disturbance caused by man-made sources, including offshore oil drilling and shipping. In a study of bowhead and beluga whales, Patenaude et al. (2002) found that helicopters cause more disturbance than other types of aircraft. Insley (1993) used sound recordings, sound pressure measurements, and video recordings to study the effect of aircraft overflights on northern fur seal behavior at St. George Island, Alaska. He found that if pilots followed the prescribed flight path and altitude and did not pass over the seal rookeries there was no discernable impact on the seals.

Response to aircraft may also depend on overflight frequency. With increasing numbers of overflights, some wildlife may habituate to aircraft noise, whereas other species will not

(Conomy et al. 1998). Conversely, sensitization may also occur. For example, the response of harbor seals increased with greater overflight occurrence (Johnson 1977 in Moore 1997).

Some specific study results relevant to the Makah proposal are as follows:

1. In a review paper of marbled murrelets, Nelson (1997) stated that aircraft flying at low altitudes are known to cause marbled murrelets to dive, although the specific altitude was not mentioned.

2. Pilots are asked to stay more than 2,000 feet above ground level when flying over the OCNMS and to follow Federal Aviation Administration guidelines as indicated on navigational charts. These charts advise pilots that overflights below this altitude may disturb wildlife, resulting in a violation of federal law (Parrish et al. 2005).

3. Several studies have documented effects of aircraft on foraging and nesting eagles. In a study of nesting eagles in Michigan, average eagle flushing distance was approximately 0.5 mile for jets, 0.75 mile for light planes, and 0.4 mile for helicopters (Grubb et al. 1992). In a study on the effects of helicopters on nesting eagles in northwestern Washington, Watson (1993) reported that 53 percent of nesting eagles were disturbed (i.e., alert and flush behavior) when helicopters approached within 1,500 feet of eagle nests. In a study of wintering bald eagle response to military activities at Fort Lewis, Washington, investigators reported that most eagles flushed when helicopters approached within 1,000 feet (Stalmaster and Kaiser 1997). In their Draft National Bald Eagle Management Guidelines (2006), FWS recommends that aircraft maintain a distance of at least 1,000 feet from eagle nests during the nesting season, except where eagles have demonstrated tolerance for such activity.

4. In a study of the effects of low-level jet aircraft overflights along the Naskaupi River, Labrador, Canada, nesting osprey behavior did not differ significantly between pre- and post-overflight periods, and adult osprey did not appear agitated or startled when overflown by jet aircraft (at overflights as low as 100 feet aboveground) (Trimper et al 1998). Osprey were attentive to and occasionally flushed from nests when float planes entered their territories.

5. At a mixed cliff-nesting colony of fulmars, shags, herring gulls, kittiwakes, guillemots, razorbills, and puffins on the Aberdeenshire coast of Scotland, aircraft flying at heights

about 300 feet above the cliff-top did not affect the attendance of incubating and brooding birds (Dunnet 1977).

3.5.3.3.2 Boat Traffic

A study on the Pribilof Islands in summer 1990 measured the effect of direct noise (airplanes, land vehicles, ships, and construction activities) on northern fur seal behavior at rookeries on St. Paul Island (Insley 1992). Noise levels were measured on land near the rookeries as ships moved toward and away from the island during all hours of the day. Ship noise at the rookeries averaged approximately 82 dB in a frequency range between 60 and 300 hertz (Hz). No effect from ship noise was observed in fur seal behavior during this study. In contrast, Insley et al. (2003) found that fur seals foraging at sea changed their direction of movement when commercial trawl vessels were nearby. As summarized by Würsig and Richardson (2002) the strongest components of sound from many of the major anthropogenic sources are below 1,000 Hz; the sounds from outboard motors operating at high speed ranges.

Marine birds can also be sensitive to disturbance from boat traffic. Bird responses to boat traffic range from changing body position to abandoning a foraging attempt to flushing from a nest (Burger 1998; Carey and Sydeman 1999; PRBO 2005). Responses of birds depend on a variety of factors, including the time of year; type, speed, and distance of boats from the birds; frequency of disturbance; bird species; and bird activity (foraging, roosting, or nesting) (Burger 1998; Ronconi and St. Clair 2002; Rodgers and Schwikert 2002). In general, mobile birds (e.g., foraging birds) move away from areas with high boat traffic, while nesting birds show behavioral, growth, or reproductive effects, with varying degrees of habituation (Kuletz 1996; Burger 1998).

Some specific study results relevant to the Makah proposal are as follows:

1. Of the hundreds of murrelets that researchers encountered with their skiff each day in Alaska's Auke Bay and Fritz Cove, most of the birds reacted to the skiff by paddling away; only a few of the birds reacted by flying away (Speckman et al. 2004). However, on eight separate occasions, murrelets that were holding fish crosswise in their bills swallowed the fish on approach of the skiff, generally when the skiff was within 15 to 130 feet of the bird. The birds holding fish were presumed to be parents about to make food deliveries to their chicks (as consistent with other alcids). Consequently, skiff disturbance represented a loss in food for the chicks. The researchers concluded that such disturbance could be detrimental to murrelets in areas where prey are relatively scarce,

where birds' inland nests are far from marine foraging areas, or where boat traffic is concentrated in waters immediately adjacent to nesting areas.

2. Observers conducting boat surveys for marbled murrelets noted that the birds dove more often than flew when a boat approached. If approached slowly and from an angle, however, the birds paddled away from the boat Neatherlin, WDFW, personal communication. 2003, as cited in FWS 2003).

3. In a study in Finland, boat disturbance (at levels of 3.5 to 8.5 disturbances per day) lengthened the swimming distances of velvet scoter ducklings and reduced the time used for feeding (Mikola et al. 1994). The birds showed a response to the boats when the boats were within 100 feet of the ducks. Birds disturbed more frequently than average were smaller than birds disturbed less frequently. The frequency of predatory gull attack on the ducks was 3.5 times higher in disturbed areas than undisturbed areas.

4. In a study in Florida, researchers investigated the flushing distance of 23 waterbird species to personal watercraft and outboard-powered boats (Rodgers and Schwikert 2002). Flushing distance for foraging and loafing birds varied by species and individual and boat type. Average flush distance by species ranged from 77 feet (Forster's tern) to 190 feet (osprey) of outboard-powered boats and 64 feet (least tern) to 162 feet (osprey) for personal watercraft. Based on their study results, the researchers suggested buffer zones of 590 feet for wading birds, 490 feet for osprey, 460 feet for terns and gulls, and 330 feet for plovers and sandpipers to minimize disturbance at foraging and loafing sites.

5. Several studies have documented effects of boats on foraging and nesting eagles. In a study of nesting eagles in Michigan, average eagle flushing distance was 360 feet for power boats and about 1,000 feet for canoes/kayaks (Grubb et al. 1992). Foraging eagles on the Columbia River maintained an average distance of 1,300 feet from stationary boats. In the presence of boats, the birds reduced their feeding time and number of foraging attempts (McGarigal et al. 1991). In a study of wintering bald eagle response to military activities at Fort Lewis, Washington, investigators reported that most eagles flushed when boats approached within 330 feet (Stalmaster and Kaiser 1997). In a study of wintering eagles along the Nooksack and Skagit Rivers in Washington, researchers reported that average distance for perched eagles flushed by a canoe was approximately 500 to 550 feet, and average flush distance for eagles standing or feeding on the ground was approximately 750 to 900 feet, although more sensitive eagles flushed at distances

out to approximately 1,150 feet (Knight 1984). In their Draft National Bald Eagle Management Guidelines (2006), FWS recommends that within 300 feet of eagle nests during the nesting season (1) concentrations of noisy vessels (e.g., commercial fishing boats and tour boats) should be avoided, except where eagles have demonstrated tolerance for such activity; and (2) other motorized boat traffic should attempt to minimize trips and avoid stopping in the areas where feasible, particularly where eagles are unaccustomed to boat traffic.

Marine birds may be sensitive to underwater noise when they are diving to catch fish. Effects can range from behavioral changes (e.g., delayed or aborted foraging attempts, avoidance of potential foraging areas) to physical injury (FWS 2003). Based on a review of studies of the effects of noise on animals in underwater environments, FWS (2003) estimated that peak sound pressure levels greater than 180 dB have the potential to cause physical injury. A recent study of noise levels from small powerboats found peak levels of 145 to 150 dB, primarily in the 350- to 1,200 Hz frequency range (Bartlett and Wilson 2002). Similarly, Hildebrand (2005) reported peak noise levels of 140 dB for small fishing vessels. Higher noise levels are associated with larger vessels; Richardson et al. (1995) provided estimates of 171 dB for a tug and barge and 181 dB for a large supply ship.

3.5.3.3.3 Gunfire and Explosives

Studies on the effects of non-lethal gunfire on marine birds are rare. Investigators did study the effect of military shooting ranges on the birds of the Wadden Sea, although effects may have been confounded by aircraft effects (Kuesters and Van Raden 1998). The investigators stated that the reactions of the birds to bombing and shooting air-to-ground missiles and machine guns from low-flying planes varied from continuing feeding to alert behavior to spontaneous flight. Reaction intensity depended on the sequence in which the weapons were fired (i.e., birds were more likely to become habituated if the shooting started with low-noise weapons) and particularly on the tide, with higher tides (and associated concentrations of birds on their high-tide roosts) eliciting stronger responses. In a study of wintering bald eagle response to military activities at Fort Lewis, Washington, investigators reported that most eagles were not "overly disturbed" by artillery and small arms fire (Stalmaster and Kaiser 1997). In a study of nesting eagles in Michigan, average eagle flushing distance was approximately 1,600 feet for gunfire and 5,000 feet for artillery fire (Grubb et al. 1992).

Indirect evidence of the effects of gunfire on birds can be obtained from results of bird hazing activities at aquaculture facilities, hydroelectric facilities, agricultural sites, and oil spills. In general, gunfire and other pyrotechnics initially cause foraging birds to flush, but the birds usually become habituated to the gunfire over time (Bomford and O'Brien 1990; Salmon and Marsh 1991; Bechard and Marquez-Reyes 2003). The intermittent use of weapons during a Makah whale hunt would not be expected to result in birds habituating to the gunfire.

3.5.3.3.4 Marine Mammals and Underwater Noise

Within animals, hearing characteristics vary among individuals, sex and age classes, populations, and species. Hearing capabilities of marine mammals have been studied for just over 20 of approximately 125 species (Richardson et al. 1995; Wartzok and Ketten 1999; Würsig and Richardson 2002). The species studied are limited to those small enough to be held in captivity. Traditionally, direct hearing measurements have involved trained responses; more recently, electrophysiological methods have been used to measure neural activity in animals presented with sound. For larger or rare species, hearing must be estimated from mathematical models based on anatomy, inferred from the sounds they produce, or from reactions to sounds in their environment.

Of the cetaceans, baleen whales are thought to be most sensitive to low-frequency sounds (approximately 10 to 5,000 Hz) based on characteristics of their auditory morphology, behavioral responses, and sound production (Wartzok and Ketten 1999). See Section 3.4.3.6.5, Known and Potential Anthropogenic Impacts, Offshore Activities and Underwater Noise, for more information about gray whales and marine noise. No direct empirical data exist on the hearing of baleen whales. Most odontocetes (toothed cetaceans, such as killer whales, other dolphins and porpoises, and sperm whales) have functional hearing across a broader range of mid to high frequencies (from 200 to 100,000 Hz) (Johnson 1967; Hall and Johnson 1972; Erbe and Farmer 1998; Tremel et al. 1998; Szymanski et al. 1999). A few odontocetes, including harbor porpoises and river dolphins, hear relatively similarly in this broad range, but appear to be specialized for hearing sounds at very high frequencies (approximately 4,000 to 150,000 Hz or higher) (Wartzok and Ketten 1999).

Pinnipeds (seals, sea lions, and walrus) are fundamentally different from other marine mammals, because they are amphibious mammals performing important life functions both above and below water. Consequently, they have a number of auditory adaptations enabling fairly sensitive hearing across wide frequency ranges both in air and water (Richardson et al. 1995; Kastak and

Schusterman 1998). Pinnipeds can be segregated into two functional groups based on their underwater hearing capabilities: (1) otariids (sea lions and fur seals), which have been shown to be sensitive to a fairly wide range of mid frequencies (approximately 1,000 to 30,000 Hz); and (2) phocids (true seals) and walruses, which generally are capable of hearing across a wide range of low to mid frequencies (approximately 200 Hz to 50,000 Hz). The differences in hearing bandwidth in air are less striking between the phocids and otariids; in both taxa, functional bandwidth is narrower in air than in water.

Ketten (1998) reported that there are no conventional audiometric data available for sea otters, but research on river otters indicates a functional hearing range in air of approximately 450 to 35,000 Hz and a peak sensitivity of 16,000 Hz.

Noise and Marine Mammal Hearing

Noise exposure may result in a range of effects on auditory and non-auditory systems. Noise may be detectable, but have no effect on a mammal's hearing or physiology. The presence of noise may mask signals of interest (such as calls of other animals) (Bain and Dahlheim 1994; Erbe 2002; Southall et al. 2003). Intense or prolonged exposure may result in either temporary or permanent changes in hearing sensitivity (Malme et al. 1983; Malme et al. 1984; Malme et al. 1988; Ljungblad et al. 1988; Tyack and Clark 1998; Schlundt et al. 2000). Sound exposure may also induce physical trauma to non-auditory structures (Jepson et al. 2004; Fernandez et al. 2005), although much remains uncertain regarding the exact mechanisms. Because marine mammals in the project area rely on underwater sounds for various purposes, any strong anthropogenic sounds at relevant frequencies might have an effect.

Noise and Marine Mammal Behavior

Most studies of the effects of noise on marine mammal behavior are observational rather than experimental. Behavioral responses may take many forms, including subtle changes in surfacing and breathing patterns, cessation of vocalization, or active avoidance or escape from the vicinity of the noise source. Bowhead whales have been observed altering their diving and blowing behavior in response to human noises (Richardson et al. 1986). Many whale species have been seen to cease vocalizing in response to human noises. These include right whales (Watkins 1986), bowheads (Wartzok et al. 1989), sperm whales (Watkins and Schevill 1975; Bowles et al. 1994), and pilot whales (Bowles et al. 1994). Other responses include humpback whales lengthening their song cycles (Miller et al. 2000) and moving away from mid-frequency sonar (Maybaum 1993), beluga whales adjusting their echolocation clicks to higher frequencies (Au et al. 1985),

and gray whales avoiding air gun noise (Malme et al. 1984). In contrast, some observers (e.g., Tyack and Clark 1998; Fristrup et al. 2003) have reported instances in which whales did not respond to human sounds. Responses may vary depending on age and sex. For example, cow-calf pairs of gray whales are considered more sensitive to disturbance by whale-watching vessels than other age or sex classes (Tilt 1985). Responses also appear to be affected by the location of the source relative to the animal, the motion of the source, and the onset and repetition of the sound (Hildebrand 2005).

In a study that used acoustic tags and controlled exposure experiments with north Atlantic right whales, Nowacek et al. (2004) examined the effects of shipping noise on marine mammal behavior. Five of six individual whales responded strongly (interrupted dive pattern and rapid ascent to the surface) to the presence of an artificial alarm stimulus (series of constant frequency and frequency modulated tones and sweeps), but ignored playbacks of vessel noise. More information about the effects of noise on gray whale behavior can be found in Section 3.4.3.6.5, Known and Potential Anthropogenic Impacts, Offshore Activities and Underwater Noise.

3.6 Economics

3.6.1 Introduction

This section describes current conditions and recent trends in economic activity within Clallam County and on the Makah Reservation, including Neah Bay. Information presented in this section includes the following:

- Countywide employment, personal income, and tourism statistics
- Commercial shipping information
- Makah tribal employment and personal income statistics
- Local economic conditions related to tourism
- County and tribal income generated by tourism
- Ocean sport and commercial fishing statistics
- Summary of economic effects of media coverage of the 1998, 1999, and 2000 Makah Tribe gray whale hunts

3.6.2 Regulatory Overview

No federal, state, or local regulations, statutes, or policies pertain specifically to the establishment or maintenance of the economic resources in the project area, other than those addressing wildlife management and hunting activities discussed in other sections of this chapter (Section 3.3.2, Regulatory Overview (Marine Habitat and Species), Section 3.4.2, Regulatory Overview (ENP Gray Whale, Section 3.5.2, Regulatory Overview (Other Wildlife Species).

3.6.3 Existing Conditions

3.6.3.1 Countywide Conditions (Clallam County)

3.6.3.1.1 Employment, Unemployment, and Labor Force

In addition to tourism and fishing, Clallam County's economic base is largely anchored by lumber and wood products, including the production of paper and related materials. Although the lumber and wood products industry has been adversely affected by several national recessions since the early 1970s, industries built around lumber, plywood, log exports, pulp and paper, and shakes and shingles continue to provide most of the goods-producing jobs in Clallam County. The Olympic Peninsula's climate and topography provide favorable growing conditions for forests, which produce more than 165 cubic feet of wood per acre per year. The markets for lumber and wood products, however, remain volatile. Invariably, factors such as interest rates, trading of the United States dollar, and government policies will continue to affect the industry. Protection of endangered species, specifically the spotted owl, also will continue to impact

forestry activity (Washington State Employment Security Department, Labor Market and Economic Analysis Branch 2001).

Clallam County is becoming a retirement center of some note. In recent years, the number of retirees coming to the area has increased. A mild climate, particularly around the Sequim area, coupled with a relatively low cost of living, is attractive to retirees (Washington State Employment Security Department, Labor Market and Economic Analysis Branch 2001).

Since 2000, annual average wage and salary employment in Clallam County has increased by more than 15 percent, with employment growing by 3,160 jobs. Most of the job growth has occurred in service industries, where 1,040 jobs were added between 2000 and 2006. Employment growth also has been strong in the government sector, with 770 new jobs, and the retail trade sector, with 440 additional jobs (Washington State Employment Security Department, Labor Market and Economic Analysis Branch 2007a).

In 2006, an average of 23,780 wage and salary workers were employed in Clallam County. Goods-producing industries, including those involved in natural resources, mining, construction, and manufacturing, accounted for 16 percent of countywide employment, about the same as the 17 percent share of these industries' jobs statewide. Government employment generated nearly 28 percent of the county's jobs, compared to 18 percent statewide. Trade, service, transportation, warehousing, and utility industries accounted for the remaining wage and salary jobs, generating 56 percent of countywide employment opportunities, compared to 65 percent statewide (Washington State Employment Security Department, Labor Market and Economic Analysis Branch 2007a).

In addition to wage and salary employment, employment related to business ownership and self-employment is important to the economy of Clallam County. For example, in 2000, proprietors' employment produced nearly 9,500 jobs, in addition to contributing to countywide wages and salaries (Bureau of Economic Analysis 2005).

Clallam County's resident civilian labor force averaged 29,500 persons in 2006, reflecting labor force growth of 14 percent since 2000. This growth rate was substantially higher than the statewide labor force increase of 9 percent over the same period. Unemployment in the county in 2006 averaged 5.6 percent, higher than the statewide unemployment rate of 4.9 percent. Since 2000, growth in the employment of Clallam County's residents has outstripped growth of the county's resident labor force, resulting in an unemployment rate falling from 6.9 percent in 2000 to its current level. Over the same period, the statewide unemployment rate decreased slightly

from 5.0 to 4.9 percent (Washington State Employment Security Department, Labor Market and Economic Analysis Branch 2007b).

3.6.3.1.2 Personal Income

Personal income is generally seen as a key indicator of a region's economic vitality. Personal income, as presented here, captures all forms of income: wages, salaries, government transfer payments, retirement income, farm income, self-employment income, proprietors' income, interest, dividends, and rent, but it does not include contributions toward social insurance. Social insurance payments are those made for certain government programs, including health, disability, unemployment, retirement, life insurance, and workers' compensation insurance programs. Nominal (not adjusted for inflation) total personal income for Clallam County increased from $995 million in 1990 to $1.9 billion in 2004, ranking the county fifteenth among Washington's 39 counties in total income in 2004 (Table 3-15). This 96 percent increase equates to an average 4.0 percent annual growth rate, very close to the state's 8.8 percent annual income growth over this period (Washington State Employment Security Department, Labor Market and Economic Analysis Branch 2007c).

Per capita income, which relates an area's total income to its population level, provides an indicator of the economic well-being of the residents of an area. In 2004, per capita income in Clallam County was $23,454, compared to $35,041 statewide, ranking the county thirteenth among the state's 39 counties (Washington State Employment Security Department, Labor Market and Economic Analysis Branch 2001). Between 1999 and 2004, per capita income in Clallam County increased by nearly 63 percent, growing from $17,605 to $28,664 (Table 3-15).

TABLE 3-15. POPULATION AND PERSONAL INCOME IN CLALLAM COUNTY IN 1990 AND 2004

CATEGORY	1990	2004	PERCENT CHANGE 1990-2004 (%)
Population	56,525	67,991	20.3
Total personal income ($1,000s)	995,115	1,948,883	95.8
Per capita income ($1,000s)	17,605	28,664	62.8

Source: Bureau of Economic Analysis 2005. ; Washington State Employment Security Department, Labor Market and Economic Analysis Branch 2007c.

3.6.3.1.3 Tourism

Tourism is an important component of Clallam County's economy. The rugged, pristine environment and variety of habitats found along the Olympic Coast and the Strait of Juan de Fuca provide recreational opportunities for both residents and tourists. Additionally, Olympic National Park, which has attracted an average of 3.2 million recreation visitors per year since 1990 (National Park Service 2008), generates visitation to Clallam County, including its visitor centers in Port Angeles, Forks, Sequim, and Neah Bay (North Olympic Peninsula Visitor and Convention Bureau 2005a). Much of the land in Clallam County, including a large segment of its Pacific coastline, is within the Olympic National Park and Olympic National Forest. The OCNMS, which provides opportunities for wildlife viewing, also attracts visitors to the county's outer coastline. Additional information concerning Olympic National Park and the OCNMS is presented in Section 3.12.3.2, Vantage Points and Visual Opportunities in the Project Area.

According to a recent study of visitors to the Olympic Peninsula (Jim Lillstrom and Associates 2003), visitors to Clallam County participate in an array of sightseeing and recreation activities. General sightseeing, hiking, wildlife viewing, and visiting historical and cultural sites are among the most popular activities of visitors to the county (Table 3-16). In addition to hiking, other popular recreational activities include boating and water sports, biking, backpacking, rafting and kayaking, and fishing.

Tourism is a relatively large industry in Clallam County. According to a recent study of travel-related economic impacts, visitors spent $139.6 million at destinations in Clallam County in 2003 (Table 3-17), accounting for 1.5 percent of statewide travel spending. Spending occurs in several sectors of the county's economy, but is greatest in the food and beverages services sector (28 percent of total visitor spending) and accommodations sector (19 percent). Additionally, approximately 16 percent of visitor spending occurs in both the retail sales sector and the arts, entertainment, and recreation sector (Dean Runyan Associates 2004).

TABLE 3-16. PERCENTAGE OF VISITORS TO CLALLAM COUNTY PARTICIPATING IN SPECIFIC ACTIVITIES DURING THEIR VISITS

ACTIVITY	PERCENT OF DAY VISITORS (%)	PERCENT OF OVERNIGHT VISITORS (%)
Sightseeing/driving tour	53	75
Hiking	46	63
Wildlife viewing	36	58
Visiting historic/cultural site	35	56
Shopping	44	47
Visiting Native American site	21	43
Participating in a family event	26	20
Visiting a gallery	17	31
Boating/water sports	21	18
Biking	20	11
Backpacking	13	17
Attending a festival/event	16	14
Wine tasting	15	13
Rafting/kayaking	13	13
Fishing	16	10
Visiting a garden/farm	10	14
Antiquing	11	13
Golfing	10	5
Going to a casino	8	6

Source: Jim Lillstrom & Associates 2003.

TABLE 3-17. TRAVEL SPENDING IN CLALLAM COUNTY IN 2003

COMMODITY PURCHASED	TRAVEL SPENDING (MILLIONS $)	PERCENT OF TOTAL TRAVEL SPENDING (%)
Accommodations	26.2	18.8
Food and beverage services	39.7	28.4
Food stores	10.7	7.7
Ground transportation and motor fuel	16.9	12.1
Arts, entertainment, and recreation	22.8	16.3
Retail sales	23.2	16.6
Air transportation	0.1	0.1
TOTAL SPENDING	**139.6**	**100.0**

Note: Includes spending (in nominal dollars) at a destination in Clallam County related to all types of travel, including business and pleasure travel. Expenditures at a destination where a traveler stays overnight or at a destination more than 50 miles from a traveler's home are included.

Source: Dean Runyan Associates 2004.

Between 1991 and 2003, travel-related spending at destinations in Clallam County grew at an average annual rate of 3.6 percent, compared to 4.9 percent statewide (Table 3-18). Spending in the county increased in every year of the period except in 1994, when spending decreased by 1.9 percent, and in 1999, when spending decreased by 0.3 percent. The average annual growth rate of travel-related spending in Clallam County slowed after 1999, declining from an average of 4.1 percent between 1991 and 1998 to 3.6 percent between 1999 and 2003 (Table 3-18). The statewide growth rate of travel-related spending also slowed after 1999, with the statewide slowdown similar to the change in Clallam County (Table 3-18).

TABLE 3-18. TRAVEL SPENDING IN CLALLAM COUNTY AND WASHINGTON STATE, 1991 TO 2003

	CLALLAM COUNTY		WASHINGTON STATE	
YEAR	TRAVEL SPENDING (MILLIONS $)	CHANGE FROM PREVIOUS YEAR (%)	TRAVEL SPENDING (MILLIONS $)	CHANGE FROM PREVIOUS YEAR (%)
1991	97.8	NA	6,830.0	NA
1992	106.6	9.0	7,070.2	3.5
1993	107.3	0.7	7,306.4	3.3
1994	105.3	-1.9	7,490.0	2.5
1995	112.9	7.2	7,825.2	4.5
1996	114.2	1.2	8,323.7	6.4
1997	118.7	3.9	8,750.2	5.1
1998	126.0	6.1	9,063.0	3.6
1999	125.6	-0.3	9,599.0	5.9
2000	130.5	3.9	10,495	9.3
2001	135.2	3.6	10,472	-0.2
2002	135.8	0.4	10,356	-1.1
2003	140.1	3.2	10,845	4.7
Average annual percentage change 1991-1998	3.7	NA	4.1	NA
Average annual percentage change 1999-2003	2.8	NA	3.1	NA
Average annual percentage change 1991-2003	3.3	NA	4.3	NA

Note: Table includes spending (in nominal dollars) at a destination related to all types of travel, including business and pleasure travel. Expenditures at a destination where a traveler stays overnight or one more than 50 miles from a traveler's home are included. Unlike the 2003 spending shown in Table 3-17, spending in this table includes expenditures by county or state residents for air travel and travel agency services for trips to destinations outside of Clallam County or Washington State.

NA = not applicable.

Source: Dean Runyan Associates 2004.

Travel-related spending by visitors to Clallam County generates earnings and employment in visitor-serving industries. Earnings generated by travel spending totaled an estimated $41.8 million in 2003, including $25.2 million in the accommodations and food service sectors and $10.3 million in the arts, entertainment, and recreation sector (Table 3-19). Employment generated by travel-related spending in Clallam County totaled an estimated 2,920 jobs in 2003 (Table 3-19), accounting for 12.5 percent of Clallam County's wage and salary jobs and 8.7 percent of all jobs (including proprietors' employment) (Dean Runyan Associates 2004).

TABLE 3-19. ESTIMATED TRAVEL-RELATED ECONOMIC IMPACTS BY SECTOR IN CLALLAM COUNTY IN 2003

SECTOR	INDUSTRY EARNINGS GENERATED BY TRAVEL SPENDING (MILLIONS $)	JOBS GENERATED BY TRAVEL SPENDING
Accommodations and food service	25.2	1,540
Arts, entertainment, and recreation	10.3	1,080
Retail and gasoline	5.1	250
Auto rental and other ground transportation	0.9	40
Air transportation	0.1	Less than 5
Other travel	0.3	10
TOTAL	**41.8**	**2,920**

Source: Dean Runyan Associates 2004.

3.6.3.1.4 Commercial Shipping

Next to fishing, the predominant use of waters off the Olympic Coast is commodities transportation to and from port facilities in Puget Sound. In 2004 Puget Sound ports handled $63 billion worth of international trade (Washington Joint Transportation Committee 2007). Included in the commercial shipping traffic are tug boats with barges carrying hydrocarbon products along the coast. The entrance to the Strait of Juan de Fuca is highly congested by oil tankers, freighters, tugs and barges, and fishing vessels (NOAA 1993). Management of commercial vessel traffic near the project area and marine vessel traffic regulations adopted during the Makah Tribe's previous whale hunt are discussed in Section 3.13, Transportation. Similarly, data on transits into Washington State waters through the Strait of Juan de Fuca by large cargo and passenger vessels, tank ships, barges, and commercial fishing vessels are presented and discussed in Section 3.13, Transportation.

Commercial shipping routes in the Strait of Juan de Fuca and nearby waters, including Haro Strait, Boundary Pass, Rosario Strait, and the Strait of Georgia, are managed jointly by the United States and Canadian Coast Guards, primarily through the Cooperative Traffic System. This system allows for management of vessel traffic in a waterway segment without regard to the

international boundary that separates the waters of the United States and Canada. A vessel separation scheme, similar to a divider median on a highway, is used to maintain a safe distance between opposing vessel traffic (United States Coast Guard 2002).

The Strait of Juan de Fuca traffic separation scheme encompasses five sets of traffic lanes, including the western and southwestern approaches to and from the Pacific Ocean, the western lanes in the Strait, the southern lanes to Port Angeles, and the northern lanes to Victoria. Each set of lanes consists of inbound and outbound traffic lanes with separation zones (NOAA 2005). The traffic lanes encompassed by the Strait of Juan de Fuca traffic separation scheme generally run through the center of the Strait of Juan de Fuca, near the boundary line separating the waters of the United States and Canada. The southern boundary of the traffic separation scheme generally lies about 4 nautical-miles offshore of Clallam County along the Strait of Juan de Fuca and extends further away from the coast as it leaves the Strait of Juan de Fuca and enters ocean waters. The Makah Tribe's U&A (Figure 3-1) overlaps the traffic separation scheme near the international boundary line in the Strait and encompasses the commercial traffic lanes that provide a southwestern approach to and from the Pacific Ocean near the mouth of the Strait.

Commercial traffic largely honors the OCNMS area to be avoided (Figure 3-1), discussed in more detail in Section 3.1.1.1.3, Current Issues (OCNMS), and Section 3.13, Transportation. The Coast Guard RNA, which was established to enforce vessel activities near any Makah whale hunt, falls within the area to be avoided, except for the portion of the RNA that wraps around Cape Flattery and Tatoosh Island (Figure 3-1). The commercial shipping traffic lanes appear to avoid the regulated navigation area, indicating that most commercial traffic avoids this area.

3.6.3.2 Local Conditions on the Makah Reservation, including Neah Bay

Demographic data presented in the Employment and Personal Income parts of this section differ from employment and personal income data that will be presented in Section 3.7, Environmental Justice. The data in this section apply to all (non-native and Native American) residents of the Makah Reservation, whereas the data presented in the Environmental Justice section apply only to Native American residents of the Makah Reservation; therefore, the data do not match.

3.6.3.2.1 General Description of the Local Economy

The Makah Reservation, which includes the community of Neah Bay, is relatively isolated. The reservation has been accessible by road only since 1931 and is an approximately 70-mile drive from the closest commercial center in Port Angeles (Sepez 2001). The economy in the coastal region that includes the Makah Reservation is inextricably linked to its natural resources, based

primarily on seafood, timber harvesting, pulp and paper production, and tourism (NOAA 1993). Neah Bay, the Makah Reservation's central town, is primarily a commercial fishing and timber community, as well as a tourist and sport fishing destination.

Similar to other locations on the Olympic Peninsula that depend on resource-based industries, the Makah Reservation and Neah Bay have experienced economic difficulties since the late 1980s due to salmon harvest restrictions and controversies surrounding timber practices that have led to reductions in harvest. In addition, the 1989 deactivation of the United States Air Force Base operating on the Makah Reservation resulted in the loss of approximately 200 local jobs, further reducing job opportunities in the local area. Both of these changes, combined with normal fluctuations in the reservation's commercial fishing, sport fishing, and tourism industries, have impaired the Makah Tribe's ability to ensure reliable incomes and subsistence sources for its members (Renker 2002).

Most reservation residents live in Neah Bay, the location of the public school, post office, health clinic, and other services (Renker 2002). Commercial activity on the Makah Reservation includes the businesses shown in Table 3-20, which mainly are located in Neah Bay. Tribal artisans also produce carvings, jewelry, and silk screen designs for sale in local shops and regional galleries (Sepez 2001). Most businesses on the reservation are owned by the Makah Tribal Council or by tribal members. Exceptions include Washburn's General Store, High Tides Seafood, Tommycod Charters, and the Cape Motel and RV Park (Arnold 2005).

3.6.3.2.2 Employment

In 2000, the labor force residing on the Makah Reservation totaled 613 persons, including 464 Native Americans (primarily Makah tribal members), representing 67 percent of the reservation's population 16 years old or older (United States Census Bureau 2002). Unemployment trends and industrial employment data specifically for the Native American population residing on the Makah Reservation are presented and discussed in Section 3.7, Environmental Justice.

TABLE 3-20. BUSINESSES ON THE MAKAH RESERVATION

Accommodations	Restaurants
Cape Motel and RV Park[1]	Warmhouse Restaurant
Hobuck Beach RV, Cabins, Campground & Resort	Beebe's Café
Tyee Motel and RV Park	Natalie's Pizza
Retail Goods/Services and Fuel	**Fishing Charter Businesses**
Big Salmon Resort (fuel)	Big Salmon Resort (bookings only)
Kim Brown's Take-Home Fish	Tommycod Charters[1]
Makah Mini-Mart (includes fuel and smoke shop)	
Raven's Corner Indian Art	
Washburn's General Store[1]	
Johnson's Beauty Shop	
Rose's Interior Decorators	
Cedar Shack Espresso Stand	
Makah Maiden Pantry	
Other Businesses	**Individual Tribal Member Fishing Vessels**
Bunn Construction Co., Inc.	40 longline – troll and gill net
Burley's Construction	10 small (coastal) trawlers
Cape Flattery Fishermen's Coop	5 large (whiting) trawlers
High Tide Seafoods[1]	5 gill net (salmon)
Makah Marina	12 small combination vessels (e.g., crab, trollers, longline)
Makah Rock and Gravel	
Makah Housing Authority	
Makah Cultural and Research Center	21 Individual (tribal members) registered fish buyers
Makah Forestry Enterprise	30 individual (tribal members) river fishermen (salmon)
Makah Fisheries Development Foundation	
Makah Bingo	
Ocean Gold Seafood	
Patsy Bain Fish Company	

[1] Indicates non-tribal owned businesses. All other businesses are owned by the Makah Tribe or by tribal members. Businesses are primarily located in Neah Bay.

Sources: Amazon.com 2005; Forks Web 2005; Makah Tribe 2005c; Pamplin 2005b; Manual 2007; Svec 2007, pers.comm.

According to the 2000 United States Census, 468 of the 613 Makah Reservation residents (non-native and Native American together) in the labor force were employed in 2000. Of the 468 Makah Reservation residents with jobs in 2000, 64 percent were employed by government entities, 13 percent were self-employed, and 23 percent were employed by private businesses (United States Census Bureau 2002). This employment distribution points to the importance of the government sector to the economy of the Makah Reservation and Neah Bay. In addition to state and federal employment, the Makah Tribe, which is the largest employer on the reservation, employs approximately 170 persons (Makah Tribe 2005b). Management and professional occupations, many probably related to government employment, accounted for 38 percent of the jobs held by reservation residents in 2000 (Table 3-21). Service, sales, and office occupations together

accounted for an additional 34 percent of total jobs. Farming, fishing, and forestry occupations related to the area's natural resources provided jobs for 13 percent of the reservation's employed labor force. The United States Census data may undercount the reservation's employment associated with fishing occupations. According to the Makah Tribe (Svec 2007, pers.comm.), tribal members held approximately 250 commercial fishing jobs in 2006. Other employers on the Makah Reservation include the Indian Health Service medical and dental clinics, with 22 employees, and the Cape Flattery Public Schools, with 61 employees (Makah Tribe 2005b).

TABLE 3-21. EMPLOYMENT BY OCCUPATION OF MAKAH RESERVATION RESIDENTS IN 2000

OCCUPATION	NUMBER	PERCENT (%)
Management, professional, and related occupations	178	38.0
Service occupations	80	17.1
Sales and office occupations	80	17.1
Farming, fishing, and forestry occupations	60	12.8
Construction, extraction, and maintenance occupations	26	5.6
Production, transportation, and material moving occupations	44	9.4
TOTAL	**468**	**100.0**

Note: The table includes both non-native and Native American residents of the Makah Reservation.
Source: United States Census Bureau 2002.

The distribution of employment by industry for residents (non-native and Native American together) of the Makah Reservation in 2000 is presented in Table 3-22.

TABLE 3-22. EMPLOYMENT BY INDUSTRY OF MAKAH RESERVATION RESIDENTS IN 2000

INDUSTRY	NUMBER	PERCENT
Agriculture, forestry, fishing, hunting, and mining	90	19.2
Construction	27	5.8
Manufacturing	3	0.6
Wholesale trade	4	0.9
Retail trade	15	3.2
Transportation, warehousing, and utilities	12	2.6
Information	0	0.0
Finance, insurance, real estate, and rental and leasing	4	0.9
Professional, scientific, management, administrative, and waste management services	13	2.8
Educational, health, and social services	110	23.5
Arts, entertainment, recreation, accommodation, and food services	31	6.6
Other services (except public administration)	9	1.9
Public administration	150	32.1
TOTAL	**468**	**100.0**

Note: The table includes both non-native and Native American residents of the Makah Reservation.
Source: United States Census Bureau 2002.

3.6.3.2.3 Personal Income

Personal income levels of Makah Reservation residents (non-native and Native American together) lag behind those of residents throughout Clallam County. According to the United States Census Bureau (2002), the median income of reservation households was $24,100 in 1999, representing only 66 percent of the median countywide household income of $36,450.

In 1999, the per capita income of all reservation residents was also below the countywide level. Based on United States Census Bureau estimates of per capita income, the $11,000 per capita income of Makah Reservation residents was 56 percent of countywide per capita income.

Because Neah Bay is isolated, most of the earnings of local residents come from the wage and salary payments of local businesses. Based on a recent informal survey of businesses in Neah Bay, local businesses generate an estimated annual total payroll of about $21 million (Arnold 2005).

3.6.3.2.4 Contribution of Tourism to the Local Economy

Tourism is one of the key elements of the economy of Neah Bay and the Makah Reservation. Visitors are attracted to Neah Bay and the reservation by several activities associated with the area's cultural, scenic, and recreational offerings.

In the village of Neah Bay, the Makah Cultural and Research Center houses the Makah Museum, which includes permanent exhibits featuring artifacts from the Ozette archeological site. Ozette was an ancient Native American whaling village discovered in 1970 on the Pacific Coast side of the reservation. The museum, which houses the nation's largest collection of Native American artifacts, is connected to a gift shop that offers visitors carvings, basketry, and jewelry made by Makah artists. The Makah Cultural and Research Center also houses the Makah language program, which is designed to preserve and teach the Makah language (Makah Tribe 2005c).

Neah Bay also offers visitors opportunities for sport fishing charters and guided tours. Several visitor-dependent businesses are located in Neah Bay, including five businesses providing accommodations, three restaurants, several retail shops providing fuel and supplies, and three sport fishing charter businesses (Table 3-20). Although none of the charter boat operators based in Neah Bay advertises whale-watching trips, at least one operation will charter whale-watching if requested (Pamplin 2005b).

Several other tourist and recreation activities are available elsewhere on the Makah Reservation, including vehicle sightseeing tours along forested State Route 113 and the irregular Strait of Juan de Fuca coastline accessed by State Route 112. Many people travel to the coast to watch the

annual migration of California gray whales (NOAA 1993). As discussed previously, most whale-watching on and near the Makah Reservation is from land-based locations, with few businesses offering whale-watching tours or charters. Beach activities are available to reservation visitors at sandy beaches near Neah Bay and along Hobuck Beach Road on the outer coast side of the reservation. Camping is available at Hobuck Beach, as well as at the Cape Resort and Silver Salmon Resort in Neah Bay.

Hiking is a popular activity for recreationists visiting the reservation. Popular trails include the 0.75-mile Cape Flattery Trail and the 3.3-mile Shi Shi Trail. The Cape Flattery Trail, with observation decks for viewing the OCNMS, Tatoosh Island, and the Pacific Ocean, is popular with ecotourists and those interested in wildlife viewing opportunities (Makah Tribe 2005c). Wildlife viewing also is available at Flattery Rocks National Wildlife Refuge and the Olympic Coast National Marine Sanctuary. Additionally, the public can view migrating salmon at the Makah National Fish Hatchery, located on the Sooes River on the west side of the reservation (North Olympic Peninsula Visitor and Convention Bureau 2005a).

Sport fisheries and other tourist attractions draw approximately 130,000 visitors annually to the Makah Reservation (Makah Tribe 2005b). The following statistics provide an indication of recent visitation activity.

- The Makah Cultural and Research Center, which includes the Makah Museum, accommodated the following number of non-Makah visitors between 2000 and 2006 (Makah Cultural and Research Center 2005; Makah Cultural and Research Center 2007):
  - 2000: 13,605 people
  - 2001: visitor data not available
  - 2002: 12,272 people
  - 2003: 13,503 people
  - 2004: 11,928 people
  - 2005: 11,907 people
  - 2006: 9,807 people
- The Olympic National Park visitor's center in Neah Bay attracted 10,130 visitors in 2004 (North Olympic Peninsula Visitor and Convention Bureau 2005b).
- The Makah Tribe sold 7,592 recreational permits to non-tribal members visiting the reservation in 2006 (R. Bowechop 2008, pers. comm.). Permit sales from 2002 to 2005 ranged from 7,880 to 9,130 and averaged 8,243 permits sold per year. Sales of permits peak during summer months and are lowest during the winter. Recreation permits are

required for non-tribal persons on the reservation. Permits are sold on a per vehicle basis and are good for a calendar year; this number of permits does not capture the total number of non-tribal persons visiting the reservation in a calendar year, nor does it capture the length of a visit and the number of visits an individual may make to the reservation under a single permit (Peterson 2005).

- The Makah Tribe sold 616 annual recreation fishing permits in 2004 ($12,330 total revenue), 533 in 2005 ($10,672 total revenue), and an estimated 460 in 2006 (approximately $9,210 total revenue) (Sones 2007). The permits, which are sold on an individual basis, allow visitors to fish on rivers within the reservation (Sones 2005).

Persons visiting the Makah Reservation for tourism and recreational purposes generate revenues for businesses in Neah Bay, most of which are owned by tribal members, including the Makah Mini-Mart, the Makah Marina, a tackle shop, two motels and a hostel, 30 recreational vehicle sites, a campground, a general store, two restaurants, and two espresso shops (Makah Tribe 2005b). However, the amount of revenues annually generated by reservation tourism and recreation, as well as the number of jobs and amount of personal income that depend on visitor spending, is not known. According to the United States Census, 46 reservation residents were employed in the retail trade sector and the arts, entertainment, recreation, accommodation, and food services sector, two sectors that depend directly on tourism (Table 3-22). These jobs account for 10 percent of the employment in the local area. Many other local jobs likely are either directly or indirectly supported by tourist spending.

3.6.3.2.5 Contribution of Ocean Sport Fishing to the Local Economy

The diversity and abundance of fish species along the coast are important recreational and commercial resources. Salmon and groundfish (including halibut) fisheries are the primary recreational fisheries within the project area, including the Makah U&A, the OCNMS area to be avoided, and the Coast Guard RNA (Figure 3-1). Recreational fishing for groundfish is concentrated primarily seaward of the entrance to the Strait of Juan de Fuca. The ocean recreational fishery for salmon, which operates out of both Neah Bay and La Push, occurs primarily in the protected waters of the Strait of Juan de Fuca (Beattie 2005).

Ocean sport fishing seasons vary according to species, with seasons adjusted from year to year based on fishery management considerations. The recreational salmon fishery from Cape Alava (near Ozette) north to the United States/Canada border and for the Strait of Juan de Fuca near Neah Bay is generally open from early July until mid-November each year (Pacific Fishery Management Council 2005b). The recreational groundfish season is generally open year-round,

although the season is limited for certain species. For example, the halibut season is generally open from mid-May until mid-June, whereas the bottomfish season, including fishing for rockfish, is open year-round (WDFW 2005b). Periodic openings and closing for specific species may occur during the normal fishing season period.

Several fishing derbies and tournaments also draw visitors to Clallam County's sport fisheries each year. Based on information from a search of internet-based websites, annual derbies and tournaments in Clallam County include the Sekiu Salmon Derby in early April, the Port Angeles Halibut Derby over Memorial Day weekend in May, the Sekiu Halibut Derby in early June, the Sekiu Salmon Derby "No Fin, You Win" Derby in mid-September, and the La Push Last Chance Salmon Derby in late September or early October.

Sport fishing facilities located in Neah Bay include the relatively new Makah Marina, which is managed by the Makah Tribal Council. The marina provides permanent moorage slips for about 200 commercial and sport fishing vessels and pleasure craft. The marina also provides utility hookups, restrooms and showers, and a pump-out facility for boats. Boat launching ramps and trailer parking facilities also are available at Big Salmon Resort and West Wind Resort in Neah Bay (Office of the Interagency Committee 2005).

Currently, three sport fishing charter businesses operate in Neah Bay, but charter businesses based elsewhere also fish in Neah Bay and adjacent waters. An estimated five sport fishing charter companies that are open all year operate in and near Neah Bay, but up to approximately 15 charter boats may operate in the Neah Bay area at times (Arnold 2005).

Between 1995 and 2004, the annual number of recreational salmon angler trips originating from Neah Bay ranged from 4,800 trips in 1997 to 26,100 trips in 2004; salmon trips originating from La Push ranged from 600 to 4,600 trips (Table 3-23). The annual number of angler trips targeting groundfish, halibut, and albacore tuna that originated from Neah Bay ranged from 29,000 trips in 1998 to 18,700 trips in 2004 (Pacific Fishery Management Council 2005b).

Based on previous studies of sport fishing in marine (and fresh) waters in the Pacific Northwest (The Research Group 1991; Gentner et al. 2001), spending by anglers who sport fish for salmon and steelhead in marine waters of the Puget Sound is estimated to average approximately $50 per angler day for fishing from private boats and $150 per angler day for fishing from charter boats (in 2000 dollars). Based on data from the Pacific Fishery Management Council (2005b), private boats account for approximately 95 percent of the salmon angler trips originating from Neah Bay, and charter boats account for approximately 5 percent of the trips. Based on these proportions and

estimates of average spending per angler trip, sport fishing for salmon originating from Neah Bay between 1995 and 2004 generated trip-related spending ranging from about $264,000 to $1.4 million annually. Using similar assumptions and estimates of average spending per angler day, trips originating from Neah Bay that targeted groundfish, halibut, and albacore tuna generated local spending ranging from about $1.0 million to $1.6 million annually. Washington-resident anglers account for most of this spending.

3.6.3.2.6 Contribution of Ocean Commercial Fishing to the Local Economy

High levels of commercial fishing occur throughout the Strait of Juan de Fuca and near the approach to the strait over Swiftsure Bank and La Perouse Bank (commonly referred to as the Plains). Additionally, pink shrimp trawling occurs between the 100-fathom isobaths of the outer coast. Fish harvested by commercial vessels include five species of salmon, bottomfish, and shellfish (Dungeness crab and pink shrimp). Salmon fisheries, particularly the ocean troll fisheries for Chinook and coho salmon, are managed to safeguard against over-harvest of the least viable individual stocks. Salmon harvest restrictions have severely constrained harvest levels in some years.

In addition to the reservation nearshore and river areas, the Makah Tribe's U&A entirely overlaps the Coast Guard RNA and portions of the OCNMS area to be avoided, and includes the area north of 48° 02' 15" N (Norwegian Memorial) and west of 123° 42' 30" W (Tongue Point) and east of 125 ° 44' 0" W, all within the United States EEZ. Makah tribal commercial fisheries include 20 different fisheries based on species, gear types, and seasons:

- Mid-water (Pacific whiting, yellowtail rock fish)
- Bottom trawl (cod, flatfish)
- Longline (halibut, black cod/sablefish)
- Ocean troll
  - Summer Strait
  - Winter Strait
  - Gill net - sockeye, chum, pink, Coho
  - Set net - Chinook
- Dive fisheries (shell fish, sea cucumbers, sea urchin)
- Dungeness crab (ocean and Strait)

TABLE 3-23. SPORT FISHING ANGLER TRIPS BY SPECIES, 1995 TO 2004

PORT LOCATION/SPECIES GROUP	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Neah Bay										
- Salmon	9,500	10,900	4,800	6,400	8,100	11,400	18,100	13,700	20,400	26,100
- Groundfish, halibut, and albacore tuna	23,300	25,800	27,700	29,000	24,900	24,600	21,200	19,700	26,600	18,700
La Push										
- Salmon	1,500	1,300	900	600	2,900	2,000	3,400	3,400	4,400	4,600
- Groundfish, halibut, and albacore tuna	1,600	1,600	2,200	1,200	1,100	1,500	1,200	1,600	3,600	2,100
All ocean port areas north of Cape Falcon, Oregon[1]										
- Salmon	93,600	69,300	91,700	52,500	108,900	132,200	275,700	191,600	232,600	201,200
- Groundfish, halibut, and albacore tuna	52,000	53,400	54,900	56,200	46,300	46,000	41,600	40,200	52,200	40,800

[1] These data include the ocean port areas of Columbia River and Buoy 10, Westport, La Push, and Neah Bay.

Source: Pacific Fishery Management Council 2005b.

- River set net/hook and line (salmon)
- Tuna
- Sardines (in development)

Commercial ocean fishing seasons vary according to species, with seasons adjusted from year to year based on fishery management. The non-tribal commercial salmon troll fishery from Cape Falcon (near the Oregon/Washington border) north to the United States/Canada border generally is open from early May until late June for all salmon species except coho. Additionally, during some years, the fishery is open for all salmon species from early July until early-to-mid-September. For tribal commercial fishing, including the Makah Tribe, salmon fishing is generally open from early May until mid to late June, and then again from early July until mid-September. Commercial groundfishing is generally open year-round for some species, with seasonal limits imposed on certain species. During the course of any year, periodic openings and closing for specific species may occur during the normal fishing season (Pacific Fishery Management Council 2005b).

The tribes are comanagers of the fisheries resources and are involved in management plan development, monitoring, licensing, and enforcement. Based on the Boldt decision (*United States v. State of Washington* 1974), the management plan allocates a portion of the salmon and steelhead among tribal and non-tribal fishers by region of origin. Additionally, the tribes have recognized treaty rights to other species. Since 1986, the tribes have received a direct halibut allocation from the International Pacific Halibut Commission. Since approximately 1994, the Washington State coastal tribes have received an allocation of black cod (sablefish) from the Pacific Fishery Management Council. That tribal allocation of both halibut and black cod subsequently is divided among the tribes by intertribal agreement. Pacific whiting, rockfish, and groundfish tribal harvest allocations are established on a year-to-year basis by the Pacific Fishery Management Council (Bryant 2007). See Section 3.1.2.1, Makah Tribal Departments and Agencies, and Section 3.1.2.2.2, Makah Fisheries Management Programs, for more information on tribal fisheries management programs.

Commercial fishing is one of the mainstays of the Makah Reservation economy. The Makah Tribe conducts a marine gillnet fishery along the shore near Cape Flattery and in the Strait of Juan de Fuca for Chinook and sockeye salmon. The Makah also participate in a variety of groundfish fisheries. Rockfish, sablefish, Pacific halibut, and whiting are the targeted species and are taken by trawl and longline gear. These fisheries occur year-round, and are centered off the north coast of the Olympic Peninsula.

Currently, 75 commercial vessels, all operated by Makah tribal members, are based out of Neah Bay. Tribal employment related to commercial fishing includes 75 vessel skippers, 145 deckhands, and 30 river fishermen (net setters), for a total of 250 jobs (Svec 2007, pers. comm..).

Commercial landings have varied widely over the last 20 years. Based on data derived from the WDFW commercial catch database, the value of commercial fish landings at the Port of Neah Bay since 2000 has ranged from $4.0 to $5.7 million annually; the tribal (mainly Makah Tribe) share accounts for between 50 and 80 percent of the total landings (Table 3-24). Between 2000 and 2004, groundfish comprised from 65 to 85 percent of the total harvest value of commercial fish landings at Neah Bay (Table 3-24).

The Makah Tribe also participates in the Pacific whiting fishery. Annual allocations to the Tribe have ranged from approximately 16,500 to 38,500 metric tons, with the value of whiting per ton averaging $100. This fishery usually opens around the middle of May and closes at the end of December. Most of whiting caught in the tribal fishery is processed at sea on a processing vessel. Smaller portions of the allocation are delivered to a shoreside processing facility in Westport, Washington. Because virtually no whiting is landed and sold at the port of Neah Bay by tribal or non-tribal fishers, the value of this fishery is not reflected in WDFW's catch database.

The value of all commercial fish landed within the Makah's U&A (including fish landed in both tribal and non-tribal fisheries) is 300 to 400 percent greater than the value of commercial fish landed and processed at the port of Neah Bay (Table 3-24), suggesting that most of the fish caught in the U&A are processed at other ports. Most of the commercial catch of salmon from these catch areas is believed to be landed and processed at Port Angeles (Beattie 2005).

TABLE 3-24. VALUE OF COMMERCIAL FISHING LANDINGS BY SPECIES, 2000 TO 2004 (IN MILLIONS OF NOMINAL DOLLARS)

LANDING LOCATION	2000			2001			2002			2003			2004		
	NON-TRIBAL	TRIBAL	TOTAL	NON-TRIBAL	TRIBAL	TOTAL	NON-TRIBAL	TRIBAL	TOTAL	NON-TRIBAL	TRIBAL	TOTAL	NON-TRIBAL	TRIBAL	TOTAL
Catch Reporting Areas for the Project Area															
Groundfish	6,202.0	1,736.1	7,938.1	6,137.2	1879.9	8,017.1	5,819.3	1,830.5	7,649.8	6,095.3	3,622.8	9,718.1	6,464.7	3,782.4	10,247.1
Salmon	175.7	219.4	395.2	140.6	432.6	573.2	297.8	415.2	713.0	594.0	492.6	1,086.6	696.8	1,225.9	1,922.7
Shellfish	6,423.7	0.4	6,424.1	2,836.8	1.2	2,838.0	2,638.5	--	2,638.5	8,173.3	--	8,173.3	3,525.4	11.8	3,537.2
Other	392.1	10.5	402.6	377.9	23.1	401.0	597.5	30.5	628.0	393.9	28.8	422.7	345.1	35.0	380.1
TOTAL	**13,193.0**	**1,966.5**	**15,160.0**	**9,492.5**	**2,336.7**	**11,829.0**	**9,353.1**	**2,276.1**	**11,629**	**15,256.0**	**4,144.2**	**19,400**	**11,032.0**	**5,055.1**	**16,087.0**
Port of Neah Bay															
Groundfish	1,725.3	1,711.3	3,436.6	1,248.6	1,891.4	3,134.0	1,732.8	1,882.0	3,614.9	1,328.0	3,078.4	4,406.3	565.3	2,486.3	3,051.5
Salmon	62.9	52.2	115.1	46.0	22.4	68.4	77.6	30.2	107.8	68.4	28.3	96.8	13.2	18.6	31.8
Shellfish	125.1	368.5	493.6	86.4	698.7	785.1	227.3	464.6	691.8	483.6	518.6	1,002.2	296.4	1,296.3	1,592.7
Other	--	--	--	--	--	--	1.3	4.1	5.4	250.7	--	250.7	--	8.6	8.6
TOTAL	**1,913.3**	**2,132.0**	**4,045.4**	**1,381.0**	**2,612.5**	**3,993.5**	**2,038.9**	**2,380.9**	**4,419.8**	**2,130.8**	**3,625.3**	**5,756.1**	**874.9**	**3,809.7**	**4,684.7**
All Washington Ports															
Groundfish	6,290.2	1,790.3	8,080.5	6,239.0	1,919.6	8,158.6	5,973.5	1,894.8	7,868.2	6,167.6	3,673.3	9,840.9	6,542.3	3,827.9	10,370.2
Salmon	585.1	248.1	833.2	651.9	113.9	765.9	770.2	145.0	915.2	470.9	69.8	540.7	462.0	65.6	527.6
Shellfish	239.3	549.2	788.4	380.9	772.6	1,153.5	751.3	692.3	1,143.6	985.7	713.0	1,698.7	1,181.3	1,840.2	3,021.5
Other	6,433.1	9.7	6,442.7	2,851.0	26.4	2,877.4	2,651.4	23.6	2,675.0	8,208.7	17.1	8,225.8	4,284.9	26.8	4,311.7
TOTAL	**13,548.0**	**2,597.3**	**16,144.0**	**10,123.0**	**2,832.5**	**12,955.0**	**10,146**	**2,755.7**	**12,902**	**15,832.0**	**4,473.3**	**20,306**	**12,470.0**	**5,760.5**	**18,231.0**

[1] Catch reporting areas vary by species and do not correspond very closely with the U&A for the Makah Tribe. Refer to Figure 1-1 for a graphical depiction of the geographic correspondence.

Note: Totals are subject to rounding.

Source: WDFW, commercial catch database.

3.6.3.3 Gray Whale Economic Values

3.6.3.3.1 Summary of Economic Effects of the Makah Gray Whale Hunts

No quantitative information is available concerning the economic effects of the Makah Tribe's practice whale hunt exercises in late 1998, or their whale hunting in the spring of 1999 and of 2000, but anecdotal information from media coverage of the hunts on protest and media activity and subsequent tourism-related effects provides some indication of the impacts on the local economy.

As described in more detail in Section 3.13, Transportation, news accounts indicate that protests and media coverage of the practice whale hunt exercises in 1998 and the hunts in 1999 and 2000 temporarily generated an increase in the number of people potentially seeking accommodations and services in the communities of Neah Bay, Clallam Bay, and Sekiu. The change in local economic activity during these periods is, however, difficult to assess based on available information. For example, based on one account (Sullivan 2000), rooms at the Cape Motel and all other motels in Neah Bay were booked by television stations and newspaper staff during the attempted whale hunts in October 1998. In an article published in the *Seattle Times* on October 8, 1998 (Mapes 1998a), however, it was noted that, "One of the biggest surprises of this hunt has been the small turnout of protesters," although the article may have been referring to the demand for accommodations in and near Neah Bay rather than the actual number of protesters near the hunt. According to the article, which noted that protesters were primarily staying in Sekiu, "Campgrounds are empty, and some motels still have vacancies." The same article reported that about 40 media representatives from all over the world were in the Neah Bay area covering the possible whale hunt during October 1998. During the May 1999 whale hunt, which occurred on four days of one week, the journalists who took up temporary residence on the reservation hired a boat to transport them to the hunting grounds (Sepez 2001). Protesters again arrived in the Neah Bay area during whale hunts in spring 2000 (Oldham 2003). Comparing the spring 1999 and 2000 hunts, the number of protesters decreased from a peak of 50 people during the 1999 whale hunt to a core group of less than 24 people (Welch 2000). Groups of protesters (numbering up to 40 people) staged weekly protests near the Makah Reservation boundary, sometimes temporarily blocking State Route 112, the only paved route to the Makah Reservation, during the 1999 and 2000 hunts (Mapes and Solomon 1999a; United States Coast Guard 1999b; *Seattle Post-Intelligencer* 2000).

In addition to onsite protests, the Makah whale hunts generated calls for boycotts of Makah tribal enterprises and Washington State products by some groups and individuals opposing the hunts. For example, as early as 1997, members of the Sea Shepherd Conservation Society, a leading opponent of the hunts, reportedly suggested calling for a boycott of tourism on the Olympic peninsula (Westneat 1997). Again, in 1998, it was reported that some activists threatened to organize a boycott of Olympic Peninsula tourism (Simon 1998), although organized boycotts apparently never materialized. In March 1999, an Australian-based animal-rights group called Australians for Animals launched an international boycott of apples produced in Washington State to protest the Makah Tribe's whale hunts, with the group's president claiming that over 1 million people had signed onto the boycott; however, the boycott apparently had no immediate effect on sales of Washington apples (Mapes 1999). Additionally, the Makah Nation was reportedly listed as the target of a boycott by Co-Op America, an economic action group that teaches individuals how to invest in environmentally responsible ways (Glass 2000). No information is available to determine whether any of the individual or group calls for boycotts had any effect on Makah tribal enterprises, Olympic Peninsula tourism, or Washington State commerce.

Anecdotal information suggests that any economic effects on tourism may have been minor, as reported in a *Seattle Times* article in August 1999 (Associated Press 1999). Gordon Bentler, the owner of the Cape Motel in Neah Bay, was quoted in the article as saying, "I've noticed no drop. In fact, I think we're probably up this year over last." Also quoted in the article was Rick Hert, executive director of the North Olympic Peninsula Visitor and Convention Bureau, who indicated that room-tax figures from Clallam County hotels and motels appeared relatively flat during the summer of 1999. Last, Bob Buckingham, manager of the marina in Neah Bay, was quoted as saying, "We haven't seen any sign of that [the hunt] affecting us out here. Our actual marina revenue is up from last year so far. We're getting quite a bit of tourism up here."

3.6.3.3.2 Commercial Value of Whales

In the past, whales were valued worldwide as a commercial resource, primarily to satisfy the global demand for whale oil, but also for human and animal foods, fertilizer, leather, and pharmaceuticals (Freeman and Kreuter 1994). Commercial whaling resulted in widespread depletion of many whale species, so governments began to develop regulations and policies to sustain and conserve the whale resource (Section 3.4.3.2.2, Protection and Recovery after Commercial Exploitation, for more information about the development of legal protections). Though a moratorium on commercial harvest of gray whales and right whales had been in place since 1937 and was reaffirmed in the 1946 ICRW, commercial harvests of other whale species

occurred as late as the 1970s and early 1980s. In December 1971, the United States banned all commercial whaling by United States nationals and sought an international moratorium on the commercial killing of all whales in the IWC arena starting in 1972 (16 USC 916 note, Public Law 96-60, August 15, 1979). As noted in Section 3.12, Aesthetics, Congress found that "whales are a unique marine resource of great aesthetic and scientific interest to mankind" and declared that "the protection and conservation of whales are of particular interest to citizens of the United States" (16 USC 916 note, Public Law 96-60, August 15, 1979). Congress also found that "marine mammals have proven themselves to be resources of great international significance, aesthetic and recreational as well as economic" (16 USC 1361(6)). The IWC adopted the commercial whaling moratorium in 1982, and implemented it in 1986. Some commercial whaling does exist today; Norway conducts commercial whaling under an objection to the ICRW's commercial whaling moratorium (see information about Article V.3 objections in Section 1.2.4.1.1, Functions and Operating Procedures of the IWC). Iceland and Japan conduct scientific whaling under Article VIII of the ICRW, but not for gray whales.

More recently, whales have become a commercial resource for the whale-watching industry, a fast-growing tourist activity in several regions of the world (Freeman and Kreuter 1994). In 1994, Kalland reported that participants at a marine mammal conference in 1980 estimated the non-lethal commercial value of cetaceans to be about $100 million dollars, approximately the same value as commercial whaling industries of the day (Kalland 1994). He noted that commercial whaling had largely ceased, and the non-lethal commercial value of whales had increased. About a decade later, Hoyt (2001) reported that whale-watching (including vessel-based whale-watching and whale-based tourism out of 'dolphinaria,' where some places market swimming with whales) was still on the rise. The number of whale watchers worldwide more than doubled between 1991 and 1998, from 4 to 9 million people per year, and the total expenditures increased from $504 million in 1994 to $1 billion in 1998 (Hoyt 2001). Since 1994, the United States has claimed more than a million whale watchers, and other countries, including Canada, joined the 'million whale watch club' around 2001 (Hoyt 2001).

Some people who commented during public scoping expressed their concerns that a gray whale hunt would affect revenues of the local, regional, and west-coast-wide whale-watching industries by causing whales to avoid boats. Although whale-watching was not one of the activities included in the Lillstrom and Associates (2003) study (Section 3.6.3.1.3, Tourism), it is among the attractions that draw visitors to Clallam County (NOAA 1993). Much of the whale-watching in Clallam County is done from land-based locations along its seashore. Few operators in Clallam

County advertise whale-watching tours or charters, although whale-watching charters are available through one resort in Sekiu and may be available through some sport fishing boat operators. Whale-watching is also possible from the two passenger ferries that run between Port Angeles and Victoria.

Whale-watching primarily occurs during autumn and spring, corresponding with the annual southern and northern migrations of the gray whale. Poor weather conditions often make viewing difficult during the fall/winter southward migration. During the spring/summer northward migration, land-based whale-watching opportunities are good from several locations, including Cape Flattery on the Makah Reservation; Shi Shi Bluffs, south of the Makah Reservation; Cape Alava, near the Ozette Indian Reservation on the outer coast; and at La Push on the outer coast (Great Pacific Recreation & Travel Maps 2000).

Outside of Clallam County, whale-watching is an important tourist activity off Westport, located on Washington's Pacific coastline at Grays Harbor, approximately 80 miles south of the Makah U&A. Whale-watching trips originating from Westport occur from March to May, when gray whales can be viewed just off the coast during their annual migration to northern feeding grounds. Most of Westport's 11 charter boat businesses offer whale-watching trips during this period, along with halibut, bottomfish, salmon, and tuna fishing charter trips at various times throughout the year (WestportWa.com 2006). Whale-watching trips range from $20 to $30 per person and generally last 2.5 hours, with many of the charter operators guaranteeing that clients will see a gray whale during their trip (WestportWa.com 2006).

Whale-watching is also an important tourist activity off Vancouver Island. On southern Vancouver Island, whale-watching operators are largely based in Victoria, Vancouver Island's largest city, but a few operators are also based in smaller communities, including Port Renfrew, at the mouth of the Strait of Juan de Fuca, and Sidney and Duncan, on Vancouver Island's southeast shore north of Victoria. Whale-watching operators also reside in Tofino and Ucluelet, located on Vancouver Island's southwest shore.

On southern Vancouver Island, 16 businesses are known to offer whale-watching tours or charters operating out of Victoria, two businesses operating out of Sidney, and one business operating out of both Port Renfrew and Duncan. Several of these operators provide saltwater fishing charters, as well as whale-watching. Tours and charters primarily occur in nearby waters, including the Strait of Juan de Fuca, waters off the Gulf and San Juan Islands, and waters offshore of the city of Vancouver. The whale-watching tours and charters provided by operators focus largely on

opportunities for viewing orcas (also called killer whales) that are part of three orca pods, known as the southern resident pods. The high season for whale-watching operators is mid-April through mid-October, when the orcas are most visible and the seas are calmer. In addition to offering orca viewing opportunities, most operators also advertise opportunities for viewing other wildlife, including gray whales, humpback whales, Minke whales, porpoises, seals, sea lions, and otters (BritishColumbia.com 2005; Whale Watch Operators Association Northwest 2005).

On southwest Vancouver Island, 12 businesses are known to offer whale tours operating out of Tofino and Ucluelet (tofino-bc.com 2007). Tours out of Tofino generally operate in the waters of Clayoquot Sound, while tours out of Ucluelet generally operate in the waters of Barkley Sound. Some tours also include the waters off the western coast of Vancouver Island; none of the operators describes tours that include the Strait of Juan de Fuca, which is 50 miles southeast of Ucluelet. Most tour operators primarily offer opportunities to view gray whales, in addition to opportunities to view orcas and humpback whales. The tours focusing on migrating gray whales typically are offered in March and April. Tours to see locally feeding gray whales during the summer feeding period are available from April until October or November. In addition to whale-watching trips, several operators in Tofino and Ucluelot offer tours to view other wildlife, including sea lions, seals, sea otters, and birds. Some operators also offer bear-watching tours and fishing charters.

3.7 Environmental Justice

3.7.1 Introduction

The primary issue of concern addressed in this section is the extent to which the proposed action would disproportionately affect minority and low-income populations. United States Census data from 2000 are used to describe existing conditions for population, employment, personal income, and poverty characteristics of minority and low-income populations in Clallam County, with particular focus on tribal communities within the county. Makah Tribe (Makah Tribe 2005b) data on employment, personal income, and poverty supplements the United States Census material. These data form the basis for identifying minority and low-income populations, as well as assessing the relative severity of the proposed action's potential impacts on these communities and economies regarding changes in income, employment, net economic value, and direct and indirect sociological impacts. Unlike Section 3.6, Economics, the information and data provided in this section on Environmental Justice excludes non-native persons residing on reservations. Thus, the data provided in the two sections are not directly comparable.

3.7.2 Regulatory Overview

Executive Order 12898, *Environmental Justice*, requires that federal agencies "identify and address the . . . disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." Based on assessment of the demographic data presented later in this section and preliminary analysis of the type and location of effects potentially resulting from the proposed action, the environmental justice analysis for the proposed action focuses on Clallam County's Native American population.

The EPA Office of Civil Rights and Environmental Justice developed guidance for all federal agencies conducting environmental justice analyses. This environmental justice analysis follows the EPA guidelines. The EPA environmental justice guidelines offer a range of categories to indicate the presence or absence of environmental justice effects (EPA 1998). Consequently, this indicator-based assessment draws topically from the range of indicator categories EPA (1998) outlined, from information provided in other sections of this environmental impact statement, and from other information relevant to the circumstances of the tribal communities.

3.7.3 Existing Conditions

Existing conditions for the environmental justice analysis are based on information on minority populations in Clallam County. This includes information on demographics, employment, personal income, and poverty characteristics of these populations.

3.7.3.1 Minority Populations

The following sections provide information on the size and demographic characteristics of minority populations in Clallam County, including Native American populations and the Makah Tribe.

3.7.3.1.1 Clallam County

In 2000, Clallam County's population totaled approximately 64,500 residents, with 40 percent of the population residing in the county's unincorporated areas. Among the county's incorporated communities, the largest is Port Angeles, with 18,400 residents, followed by Sequim and Forks, with populations of 4,300 and 3,100 people, respectively (United States Census Bureau 2002).

The population of Clallam County is largely white, with whites accounting for 89.1 percent of the county's residents in 2000 (Table 3-25). American Indians and Alaska Natives (hereafter referred to as Native Americans) are the only other relatively large racial group in the county. The 3,303 Native Americans residing in Clallam County in 2000 accounted for 5.1 percent of the countywide population. Together, all other racial groups accounted for only 5.8 percent of the population. Hispanics, who can be categorized as members of other racial groups for the purposes of the United States Census, accounted for 3.4 percent of the county's population in 2000.

TABLE 3-25. RACIAL DISTRIBUTION OF CLALLAM COUNTY POPULATION IN 2000

RACE	NUMBER	PERCENT (%)
White	57,505	89.1
Native American[1]	3,303	5.1
Asian[1]	731	1.1
Black[1]	545	0.8
Native Hawaiian and other Pacific Islander[1]	104	0.2
Some other race[1]	761	1.2
Two or more races	1,576	2.5
Total	64,525	100.0
Hispanic or Latino[2]	2,203	3.4

[1] This includes persons reporting only one race.

[2] For purposes of the United States Census, Hispanics or Latinos may be of any race, so they are already included in other applicable race categories in the table.

Source: United States Census Bureau 2002

3.7.3.1.2 County Tribal Demographics

Four Native American reservations are located in Clallam County: the Makah Reservation, encompassing Neah Bay; the Jamestown S'Klallam Reservation and off-reservation trust lands at Blyn near Sequim; the Lower Elwha Reservation and off-reservation trust lands west of Port Angeles; and the Quileute Reservation at La Push. Additionally, the Hoh Tribe maintains a business committee office in Forks, although the Tribe's reservation is located near Oil City in Jefferson County. The Quinault Tribe, whose reservation is in Grays Harbor County, also has an administrative office in Forks.

Together, the population of Clallam County's four reservations totaled 2,058 persons, including 1,640 persons of Native American ancestry alone, in 2000 (Table 3-26). Non-tribal members also live on reservation properties, including those married to tribal members and those with jobs on the reservation. According to United States Census data, an additional 1,663 Native Americans in Clallam County lived outside of reservation and trust land properties in 2000. Among the four reservations in the county, Native American populations ranged from 2 people on the Jamestown S'Klallam Reservation to 1,083 people on the Makah Reservation.

TABLE 3-26. POPULATION OF AMERICAN INDIAN RESERVATIONS AND TRUST LANDS IN CLALLAM COUNTY IN 2000

RESERVATION	TOTAL POPULATION	AMERICAN INDIAN[2]
Makah	1,356	1,083
Quileute	371	307
Lower Elwha[1]	315	248
Jamestown S'Klallam[1]	16	2
TOTAL	**2,058**	**1,640**

[1] This includes the population on off-reservation trust lands.

[2] This includes Native Americans reporting only one race.

Source: United States Census Bureau 2002

Table 3-27 contains selected demographics for Native Americans residing on the four reservations in Clallam County. The most notable characteristic of reservation demographics is the youthful nature of their populations. With the exception of the Jamestown S'Klallam Reservation, which had only two Native American residents in 2000, the median age of the Native American populations was well below the median age of 43.8 years for all residents in Clallam County in 2000. The median age of reservation populations ranged from 20.6 years for the Lower Elwha Reservation to 26.3 years for the Quileute Reservation (Table 3-27).

Differences also exist in the average household and family sizes of the reservation populations, which were higher than the countywide averages of 2.31 persons per household and 2.78 persons per family in 2000. Excluding the Jamestown S'Klallam Reservation, average household size ranged from 2.84 on the Quileute Reservation to 3.67 on the Lower Elwha Reservation. Average family sizes ranged from 3.34 on the Quileute Reservation to 3.97 on the Lower Elwha Reservation (Table 3-27).

TABLE 3-27. SELECTED DEMOGRAPHICS OF NATIVE AMERICANS RESIDING ON RESERVATION AND TRUST LANDS IN CLALLAM COUNTY IN 2000

CATEGORY	MAKAH RESERVATION[1]	QUILEUTE RESERVATION[1]	LOWER ELWHA RESERVATION AND TRUST LANDS[1]	JAMESTOWN S'KLALLAM RESERVATION AND TRUST LANDS[2]
Male	54.1%	55.3%	45.3%	50.0%
Female	45.9%	44.7%	54.7%	50.0%
Median age (years)	24.7	26.3	20.6	43.0
Under 18 years of age	37.9%	38.7%	46.1%	25%
Over 65 year and over	4.7%	6.0%	2.3%	25%
Average household size (persons)	2.95	2.84	3.67	2.29
Average family size (persons)	3.44	3.34	3.97	2.60
Owner-occupied housing units	69.9%	89.7%	94.7%	71.4%
Renter-occupied housing units	30.1%	10.3%	5.3%	28.6%

[1] Data represent Native Americans reporting only one race. Non-native residents living on reservations are excluded in this state.

[2] Because of the small size of the Native American population residing on the Jamestown S'Klallam Reservation and trust lands, the data represent the entire population of the reservation and trust lands, rather than Native Americans alone.

Source: United States Census Bureau 2002

3.7.3.1.3 Makah Tribe

The United States Census Bureau (2002) reported that 1,083 Native Americans lived on the Makah Reservation in 2000, compared to 940 Native Americans in 1990 and 803 Native Americans in 1980. An additional 273 non-tribal persons lived on the reservation in 2000, including those married to tribal members and others who work for government agencies. Not all members of the Makah Tribe live on the Makah Reservation. Tribal enrollment, which includes the total number of tribal enrollees certified as being tribal members by the Tribe's leader or designee, was 2,389 members in January 2001, including about 1,200 tribal members who lived off the reservation (Makah Tribe 2005b). Table 3-27 shows selected demographics for American Indians living on the Makah Reservation.

Neah Bay, an isolated fishing and timber community of 794 persons, is the population center of the Makah Reservation, accounting for nearly 60 percent of the reservation's population in 2000 (United States Census Bureau 2002). Most of the Makah residing on the reservation live in Neah Bay, though some live in the reservation's hilly regions and along the road that runs south along the Pacific Ocean side of the reservation (Sullivan 2000).

3.7.3.2 Minority Employment

The sections below provide information regarding minority employment potentially affected by the Makah's proposed gray whale hunts.

3.7.3.2.1 Clallam County

In 2000, Clallam County's minority civilian labor force totaled 2,643 persons (Table 3-28), representing 10 percent of the county's civilian labor force. Hispanics, who, for the purposes of the United States Census, may be categorized as members of other racial groups, had 810 persons in the labor force, accounting for 3.1 percent of the county's total labor force.

Unemployment for minorities in Clallam County is generally higher than for those in the overall countywide population. In 2000, the county's minority population had an unemployment rate of 14.0 percent at the time of the United States Census, compared to a countywide unemployment rate of 7.7 percent. Hispanics, who can be categorized as members of other racial groups for the purposes of the United States Census, have lower unemployment figures than other minorities, at 12.3 percent.

TABLE 3-28. LABOR FORCE, EMPLOYMENT, AND UNEMPLOYMENT FOR CLALLAM COUNTY MINORITY AND NATIVE AMERICAN POPULATIONS IN 2000

	Clallam County					
Category	All Minority Persons[1]	Hispanics or Latinos[2]	Makah[3]	Quileute[3]	Lower Elwha[3]	Jamestown S'Klallam[4]
In civilian labor force	2,643	810	464	122	96	13
Employed	2,266	710	336	95	78	13
Unemployed	385	100	128	27	18	0
Unemployment rate (%)	14.6	12.3	27.6	22.1	18.8	0.0

[1] This includes Blacks, Native Americans, Asians, Native Hawaiian and other Pacific Islanders, persons of some other race, and persons of two or more races.

[2] For purposes of the United States Census, Hispanics or Latinos may be of any race, so they are already included in other applicable race categories in the table.

[3] Data represent Native Americans on reservations reporting only one race. Non-native residents on reservations are excluded from this table.

[4] Because of the small size of the Native American population residing on the Jamestown S'Klallam Reservation and trust lands, the data represent the entire population of the reservation and trust lands, rather than Native Americans alone.

Source: United States Census Bureau 2002

3.7.3.2.2 County Tribal Employment

Native Americans residing on the reservations of Clallam County's four tribes had a labor force of 695 persons in 2000, with 522 of these persons employed (Table 3-28). About two-thirds of the tribal labor force resided on the Makah Reservation, with virtually all of the remaining tribal labor force living on the Quileute and Lower Elwha Reservations. Together, Native Americans on the four reservations had an unemployment rate of 24.9 percent in 2000, much higher than the 7.7 percent rate countywide and the 14.6 percent rate for all minority groups combined in Clallam County. The difference in unemployment rates between Native Americans and the general population in the county may be higher than that reported by the United States Census, because some tribal members may have been available for work, but dropped out of the labor force because of the lack of nearby employment opportunities.

Government employment is important to Native Americans living on the county's four reservations (

Table 3-29). Two industrial sectors linked to government, the public administration sector and the educational, health, and social services sector, generated more than half of all jobs for reservation tribal members in 2000, including 55 percent of the jobs for the Makah Reservation, 46 percent of the jobs for the Lower Elwha Reservation, and 44 percent of the jobs for the Quileute Reservation. Industries related to agriculture, forestry, fishing, hunting, and mining are also important to the reservations, accounting for 19 percent of all job opportunities in 2000.

3.7.3.2.3 Makah Tribe

In 2000, the labor force of Native Americans (primarily Makah and excluding non-native residents) on the Makah Reservation totaled 464 persons, representing 66 percent of the population 16 years old or older (United States Census Bureau 2002). This labor force participation rate was about the same as the rate in 1990 and 1980 (United States Census Bureau in Northwest Area Foundation 2005).

As Table 3-28 shows, 336 Native Americans on the Makah Reservation had jobs in 2000. The census data indicate that 27.6 percent of the tribal labor force was unemployed that year, an unemployment rate substantially higher than the 7.7 percent rate countywide. While relatively high, the tribal unemployment rate suggested by the census data is much lower than unemployment rates reported by the Makah Tribe and the Bureau of Indian Affairs for recent years. Based on the Tribe's estimates of how many of its residents were available for work, but were unemployed, tribal unemployment rates have ranged from an estimated 48 percent in 1991

to 70 percent in 2001 (Bureau of Indian Affairs, Office of Tribal Services, in Northwest Area Foundation 2005).

TABLE 3-29. EMPLOYMENT BY INDUSTRY OF NATIVE AMERICAN RESIDENTS AT CLALLAM COUNTY IN 2000

	Makah Reservation[1]		Quileute Reservation[1]		Lower Elwha Reservation[1]		Jamestown S'Klallam Reservation[2]	
Industry	Number	Percent (%)	Number	Percent (%)	Number	Percent (%)	Number	Percent (%)
Agriculture, forestry, fishing, hunting, and mining	80	23.8	13	13.7	6	7.7	0	0.0
Construction	16	4.8	0	0.0	4	5.1	0	0.0
Manufacturing	0	0.0	5	5.3	3	3.8	1	7.7
Wholesale trade	2	0.6	1	1.1	6	7.7	0	0.0
Retail trade	11	3.3	9	9.5	0	0.0	0	0.0
Transportation, warehousing, and utilities	5	1.5	3	3.2	4	5.1	0	0.0
Information	0	0.0	0	0.0	2	2.6	0	0.0
Finance, insurance, real estate, and rental and leasing	4	1.2	0	0.0	0	0.0	3	23.1
Professional, scientific, management, administrative, and waste management services	7	2.1	4	4.2	6	7.7	0	0.0
Educational, health, and social services	67	19.9	25	26.3	12	15.4	2	15.4
Arts, entertainment, recreation, accommodation, and food services	20	6.0	10	10.5	8	10.3	3	23.1
Other services (except public administration)	6	1.8	8	8.4	3	3.8	2	15.4
Public administration	118	35.1	17	17.9	24	30.8	2	15.4
TOTAL	**336**	**100.0**	**95**	**100.0**	**78**	**100.0**	**13**	**100**

[1] Data represent Native Americans on reservations reporting only one race. Non-native residents on reservations are excluded from this table.

[2] Because of the small size of the Native American population residing on the Jamestown S'Klallam Reservation and trust lands, the data represent the entire population of the reservation and trust lands, rather than Native Americans alone.

Source: United States Census Bureau 2002

Due to the seasonal nature of the reservation's tourist and fishing industries, unemployment is generally much higher during winter months than during the summer (Sullivan 2000).

According to the 2000 United States Census, three industrial sectors of the local economy provided three-quarters of the jobs held by tribal members in 2000. As discussed previously, two sectors associated with government activity, the public administration sector and the educational, health, and social services sector, together generated more than half of the employment opportunities for reservation tribal members (

Table 3-29). Additionally, the industrial sector most closely related to the area's natural resources, the agriculture, forestry, fishing, hunting, and mining sector, provided 24 percent of the jobs held by Native Americans on the reservation. Note that the census, which reported 80 jobs in this sector, may have underestimated the fishing-related employment in this sector. According to Makah Fisheries Management (Svec 2007, pers. comm.), commercial fishing alone currently generates 250 jobs for tribal members, suggesting that commercial fishing may generate about one-third of the jobs held by tribal members. This fisheries-related employment is seasonal in nature.

3.7.3.3 Personal Income and Poverty Levels

The sections below provide information on personal income and poverty levels in Clallam County.

3.7.3.3.1 Clallam County

The income of minority populations in Clallam County is generally lower than that of the countywide population. According to United States Census Bureau (2002) income data, the median household income (household income includes the income of all persons considered part of an individual household) for the overall population in Clallam County was $36,449 in 1999. The median household income was lower for all minority populations other than Blacks and Asians (Table 3-30). For Native Americans and Hispanics, the county's two largest minority groups, the median household income was approximately 24.0 percent lower than it was countywide.

The income differences between Clallam County's minority populations and its countywide population were even greater on a per capita income basis (per capita income is the total income of an area or population averaged across all persons within an area or population). In 1999, per capita incomes for minority populations ranged from $9,593 for Hispanics to $18,072 for Asians, compared to per capita income of $19,517 for the countywide population (Table 3-30). For

Native Americans and Hispanics, per capita income levels were 42.1 percent and 50.8 percent lower, respectively, than countywide per capita income.

TABLE 3-30. INCOME AND POVERTY STATUS OF MINORITY POPULATIONS IN CLALLAM COUNTY IN 1999

RACIAL CATEGORY	MEDIAN HOUSEHOLD INCOME ($)	PER CAPITA INCOME ($)	INDIVIDUALS BELOW POVERTY LEVEL	
			NUMBER	PERCENT
Native American[1]	27,652	11,305	828	26.7
Asian[1]	44,583	18,072	93	11.8
Black[1]	40,893	15,813	33	21.7
Native Hawaiian and other Pacific Islanders[1]	34,167	10,643	21	46.7
Some other race[1]	22,188	8,230	267	36.5
Two or more races	28,177	10,410	382	23.2
Total	NA	NA	1,624	25.1
Hispanic or Latino[2]	27,750	9,593	642	33.0

NA = not applicable.

[1] This includes persons reporting only one race.

[2] For purposes of the United States Census, Hispanics or Latinos may be of any race, so they may already be included in other applicable race categories in this table.

Source: United States Census Bureau 2002

With the exception of the Asian population, all minority populations in Clallam County had poverty rates exceeding the countywide rate of 12.5 percent in 1999. The highest poverty rates were for Native Hawaiian and Other Pacific Islanders at 46.7 percent and Hispanics at 33.0 percent (Table 3-30).

3.7.3.3.2 County Tribal Income

As discussed in Section 3.7.3.3, Personal Income and Poverty Levels, median household income and per capita income were lower for the Native American population in Clallam County than for the general countywide population in 1999. Additionally, the poverty rate for all Native Americans residing in Clallam County, at 26.7 percent in 1999, was higher than the countywide rate of 12.5 percent (Table 3-30).

For those Native Americans living on Clallam County's four tribal reservations, median household and family income were much lower than countywide income levels in 1999. Reservation median household income was from 14.3 to 41.5 percent lower than the county's $36,449 median household income (Table 3-31). Similarly, median family income for reservation families was from 28.2 percent to 50.2 percent lower than the countywide median family income of $44,381.

TABLE 3-31. INCOME AND POVERTY STATUS OF NATIVE AMERICAN RESIDENTS ON RESERVATIONS IN CLALLAM COUNTY IN 1999

CATEGORY	MAKAH RESERVATION[1]	QUILEUTE RESERVATION[1]	LOWER ELWHA RESERVATION AND TRUST LANDS[1]	JAMESTOWN S'KLALLAM RESERVATION AND TRUST LANDS[2]
Median household income ($)	21,316	22,125	31,250	60,625
Median family income ($)	25,893	22,000	31,875	61,875
Per capita income ($)	9,835	9,104	8,082	28,238
Percent of families below poverty level (%)	28.9	34.2	31.1	0.0
Percent of individuals below poverty level (%)	31.3	31.7	33.2	0.0

[1] Data represents Native Americans reporting only one race. Non-native residents at reservations are excluded from this table.

[2] Because of the small size of the Native American population residing on the Jamestown S'Klallam Reservation and trust lands, the data represent the entire population of the reservation and trust lands rather than Native Americans alone.

Source: United States Census Bureau 2002

A larger disparity between tribal and countywide income exists for per capita income. In 1999, per capita income for tribal reservation members ranged from $8,082 for the Lower Elwha Reservation to $9,835 for the Makah Reservation (Table 3-31). These income levels are approximately half the $19,517 in per capita income for the countywide population in 1999. Census income and poverty statistics for the Jamestown S'Klallam Reservation are not discussed in this section, although they are presented in Table 3-31, because of the small number of persons residing on the reservation.

Given the disparity in incomes, poverty rates for tribal reservation families and individuals are substantially higher than for the general countywide population (the poverty rate is the percentage of families or individuals living below the poverty thresholds established each year by the United States Office of Management and Budget). In 1999, the percentage of tribal reservation families with incomes below the federal poverty threshold ranged from 28.9 percent to 34.2 percent, compared to 8.9 percent of families countywide (Table 3-31). For tribal individuals, poverty rates ranged from 31.3 to 33.2 percent, much higher than the countywide poverty rate of 12.5 percent.

3.7.3.3.3 Makah Tribe

Native Americans living on the Makah Reservation have substantially lower incomes and experience higher poverty rates than residents throughout Clallam County. According to the United States Census Bureau, the median household income of Native Americans on the Makah

Reservation was $21,300 in 1999 (Table 3-31), 42 percent lower than countywide median household income. Relative to all reservations in the United States, the median income of tribal households on the Makah Reservation has been falling over the past two decades. In 1979, the median household income of American Indians on the Makah Reservation was 48 percent higher than the median household income of all United States reservations. By 1999, this relationship reversed, with median household income on the Makah Reservation 2 percent lower than median household incomes for all reservations (United States Census Bureau in Northwest Area Foundation 2005).

Similar to household income, the per capita income of Makah Reservation tribal members is lower than per capita income countywide, registering 50 percent of the countywide level in 1999. The disparity in income levels explains the relatively high poverty rates for Native Americans residing on the Makah Reservation. In 1999, 28.9 percent of the Native American families residing on the Makah Reservation fell below the federal poverty level compared to 8.9 percent of all families in Clallam County (Table 3-31). Poverty figures for individuals were similar to those for families, with 31.3 percent of the Makah Reservation's tribal members living below the poverty level compared to 12.5 percent of all individuals in Clallam County.

According to the Makah Tribe (2005a), several families and individuals on the reservation depend on federal assistance, including 52 families receiving temporary assistance for needy families, 62 families receiving food stamps, and 106 individuals receiving medical coupons.

3.7.3.4 Outreach to Minority and Low-Income Populations

Outreach to minority and low-income populations was part of the overall scoping process NMFS conducted for the Makah Whale Hunt EIS. Chapter 1 of this EIS contains a description of the scoping process in Section 1.5.1, Scoping Process, as does the scoping report associated with this EIS (NMFS 2007a).

3.8 Social Environment

3.8.1 Introduction

This section discusses the social environment, the complexity of emotions and attitudes of people and communities potentially affected by the Makah whale hunt. The range of feelings and attitudes, as well as the resulting tensions, is described below in the context of the various groups that have expressed an interest in the hunt.

3.8.2 Regulatory Overview

No specific regulations directly address social tensions in the project area.

3.8.3 Existing Conditions

3.8.3.1 Makah Tribal Members

The Makah Tribe values whales for their ceremonial and subsistence uses, including the spiritual role they play in their culture. According to the *Application for a Waiver of the Marine Mammal Protection Act Take Moratorium to Exercise Gray Whale Hunting Rights Secured in the Treaty of Neah Bay*, the Makah have attempted to revive its cultural traditions for the past three decades (Makah Tribe 2005a). The Tribe believes it must revive these traditions to combat the social disruption resulting from the rapid changes of the last century and a half. The document states that rates of teenage pregnancy, high-school dropout, substance abuse, and juvenile crime indicate that the Makah community is still in flux and that the enormous social disruption caused by epidemics, boarding schools, and federal acculturation policy still exists. To reverse these trends, the Makah have reinstituted numerous song, dance, and artistic traditions. The Tribe currently operates a program to restore the Makah language to spoken proficiency on the reservation. Given the centrality of whaling to the Tribe's culture, the Makah believe that a revival of subsistence whaling is necessary to pursue its spiritual renaissance (Makah Tribe 2005a).

In preparation for the 1999 whale hunt, tribal participants engaged in both spiritual and physical training for the hunt. Overall, Makah tribal members experienced an increase in tribal pride (Bowechop 2004). This revival of Makah whaling rituals and traditional knowledge occurred after a 70-year hiatus (Section 3.10, Ceremonial and Subsistence Resources). Hunters reported that the activities accompanying the hunt strengthened tribal member identity as descendants of Makah whalers (Tweedie 2002). One of the elders who grew up speaking Makah reported that Makah language class attendance swelled after the hunt (Oldham 2003). Many community members were present when the first whale was landed at Neah Bay in 1999, and 80 percent

attended the tribal celebration of the first whale hunt (Makah Tribe 2005a). Most Makah felt that the restoration of whaling had improved social and cultural conditions on the reservation. Subsistence whaling, both in the historic and contemporary contexts of the Makah culture, is further discussed in Section 3.10.3.4, Makah Historic Whaling, and Section 3.10.3.5, Contemporary Makah Society, respectively.

Although most Makah Tribe members support the hunt, some do not. According to a 2001/2002 household whaling survey the Makah Tribe conducted, 93 percent responded that the Makah Tribe should continue to hunt whales, 6 percent responded that the Tribe should not hunt whales, and 1 percent was undecided (Renker 2002; Renker 2007). This survey is described further in Section 3.10, Ceremonial and Subsistence Resources. One Makah Tribe member has publicly opposed the hunt, and spoke at the 1996 annual IWC meeting. She reported encountering harassment and hostility from pro-whaling tribal members (Mapes 1998b). According to newspaper account, other members who did not approve of the hunt were less vocal about their dissent (Mapes 1998c). The article indicated that those who spoke out were criticized for disloyalty to their leaders and for exposing tribal dissention to the outside world. According to Keith Hunter, a Neah Bay resident who is not a Makah tribal member, there has been no opposition to whaling of the sort portrayed by many of the anti-whaling advocates (CERTAIN 2000). Hunter claimed that disagreements, concerns, or differences almost entirely healed, and those remaining disappeared on the day the Makah took the whale.

Many people beyond the reservation do not support whaling, and protests were common during the hunting periods. See Section 1.4.2, Summary of Recent Makah Whaling – 1998 through 2007, and Section 3.15.3.4, Behavior of People Associated with the Hunt, for a more complete description of protest activities. Makah Tribe members have expressed frustration with protesters and others who oppose the whale hunt. They believe that protesters, like missionaries and government Indian agents preceding them, are pushing their cultural values on the Makah people and telling them how and how not to be Makah (Johnson 1999).

The Makah Tribal Council provided financial support to both the whaling captain and whaling crew as they were training for the hunts in 1998 and hunting in 1999 and 2000. In 2002, the Council decided not to provide financial support, leaving it up to whaling families to support any hunts, consistent with tribal tradition. In 2002, at least three families were interested in a hunt, and two were actively training (Mapes 2002). The Makah Tribal Council has not indicated whether it would financially support future hunts if they were authorized.

3.8.3.2 Other Tribes

Many other tribes supported, and continue to support, the Makah's right to hunt whales, in part because they want the federal government to uphold treaty rights. In 1999, the *Peninsula Daily News* reported that thousands of Native Americans from Canada to New Mexico anticipated journeying to Neah Bay for a feast to celebrate the successful hunt (*Peninsula Daily News*, the Associated Press, and *Seattle Times* 1999). The hunt was supported by the Northwest Indian Fisheries Commission, an organization of 20 member tribes in western Washington; the president of the Northwest Indian Fisheries Commission gave a speech at the celebratory feast after the whale was killed (Bowechop 2004). In 2003, the Affiliated Tribes of Northwest Indians passed Resolution 03-13 in support of the Makah whaling treaty rights. In 2004, the National Congress of American Indians passed Resolution MOH-04-025, stating the following:

> . . . go on the record in full support of the right of the Makah to freely exercise their treaty right to hunt whales while supporting the rights of Fishing Tribes to marine mammal management without threats, intimidation, harassment, or interference.

The National Congress of American Indians also expressed support for the Makah after the *Anderson v. Evans* (2004) decision. It called upon the United States government and all of its agencies to "support the efforts of the Makah Tribe and affected tribes to restore its full treaty whaling rights." In a 2005 scoping letter on the DEIS, Honor Our Neighbor's Origins and Rights registered its support of the treaty-protected right of the Makah to pursue whaling. A Puyallup Tribe member supported this idea in an interview with the *Seattle Times* by noting the importance of Makah whaling in the context of tribal rights. He mentioned the importance of solidarity, saying "One of the ways we were conquered was by dividing us" (Hamilton 1999a). Some individual Native American commenters for this DEIS did express opposition to the hunt; a summary of the views of these and other individuals is encapsulated below in Section 3.8.3.3, Other Individuals and Organizations.

Immediately after the successful 1999 whale hunt, anti-whaling activists targeted the Muckleshoot, Puyallup, and Tulalip Tribes for their support of the Makah's whale hunt (Burkitt 1999a). The tribes received verbal threats and insults, including a bomb threat to a tribal school (Burkitt 1999a).

3.8.3.3 Other Individuals and Organizations

This section covers the range of attitudes about Makah whale hunting held by Clallam County residents, Washington State residents, United States residents, foreign nationals, and people affiliated with organizations. Both local and out-of-state residents have expressed support for and

opposition to the Makah whale hunt. This section also covers the attitudes of potential tourists who may or may not choose to visit the area due to their perceptions of the whale hunt.

Although the debate can often be characterized as polar extremes of whaling proponents and whaling opponents, the complicated views cannot be reduced to two simple perspectives (Sepez 2002). Some people believe, for instance, that all whaling, including commercial whaling, is acceptable as long as the whale resource remains at a sustainable level based on scientific, principled management. Some people believe that commercial whaling is unacceptable, but that subsistence whaling for aboriginal cultures is acceptable. Some people believe that whaling for any purpose is unacceptable and should not be allowed. The debate about how to manage whales is about culturally based values (Freeman 1994).

Specific to the Makah's past and proposed whale hunting activities, NMFS has received public comments on the 1997 EA, the 2001 EA, and this DEIS. The commenters can be divided into those who support the Makah's hunting of gray whales and those who oppose any hunting of gray whales. The commenters are not necessarily divided along cultural lines (people from indigenous cultures versus people from western societies). Some Native American commenters and individual Makah Tribe members interviewed in the past and while preparing this DEIS analysis disagree with the hunt. Some commenters who did not identify themselves as Native Americans support the hunt. Commenters who have supported or would support the Makah hunt give many reasons for their support, including, but not limited to, their perception of the established treaty whaling right of the Makah Tribe and federal obligations to the Makah Tribe (Section 1.2.2, Treaty of Neah Bay and the Federal Trust Responsibility), the relative health of the gray whale population (Section 3.4.3.4, Current Status of the Gray Whale Population), and the historical and contemporary cultural meaning ascribed to whaling by the Makah (Section 3.10, Ceremonial and Subsistence Resources).

Commenters who did not or would not support the Makah's hunt of gray whales also gave a multitude of reasons, some of them related to social and economic values attributed to the gray whales. Several people, for instance, commented on the beauty of the whales and the emotions they inspire. Many people oppose the killing of whales because they believe whales are intelligent (comparable in this regard to humans) and have sophisticated forms of community and communication. One review states, "stranger than fiction is fact that there already exists a species of animal life on earth that scientists speculate has higher than human intelligence. The whale has a brain that in some instances is six times bigger than the human brain and its neocortex is more

convoluted" (D'Amato and Chopra 1991). In a letter to the *Seattle Post-Intelligencer* editor, one person wrote ". . . I believe whales and other marine mammals are intelligent, and for lack of opposable thumbs, might be creatures equal to humans on the evolutionary ladder" (*Seattle Post-Intelligencer* 1999). In addition, human-like characteristics of whales, such as humpback whales' complicated communication system, and the strong family grouping of orcas, particularly endear whales to people (Sepez 2002). Some people also believe that whales are sentient beings that should be allowed to exist free from human harm.

People both inside and outside of the United States have said that they value the existence of gray whales in the project area as fellow mammals, and they want to know that whales exist unmolested. Many people (mostly local residents) who watch whales in the action area on a regular basis attach existence values to individual whales that have been identified through photo-identification studies. Many people were also concerned about the pain individual whales experience if struck or killed in a hunt. Some people believe that cruelty is necessarily involved in methods used to hunt whales (Freeman 1994).

After the 1999 hunt, many people expressed remorse and anger about the whale hunt in protests in Seattle and Port Angeles in letters and calls to local and regional newspapers such as the *Peninsula Daily News*, the *Seattle Times*, and the *Seattle Post-Intelligencer*. The *Seattle Times* reported that they received almost 400 phone calls and emails running about 10-to-1 against the hunt within hours of the Makah Tribe's successful kill of a gray whale (*Seattle Times* staff 1999). Many people's comments were reactions to the images of the killing of the whale on the morning television news. Some thought the coverage of the killing was inappropriate for television news (Levesque 1999). Some protesters and comment writers expressed violent feelings and displayed racism towards the Makah.

Some DEIS scoping comments suggested that people would boycott products and not participate in tourism on the peninsula and throughout the state as a result of whaling. They were concerned that whaling would cause economic impacts on hotels, restaurants, stores, and tourist-related businesses. Some people opposed using modern technology for the hunt, suggesting that a traditional hunt should be conducted using traditional technology (Section 2.4.5.1, Hunt Using Only Traditional Methods). Although most letters and calls received by newspapers after the successful 1999 whale hunt opposed the whale hunt, many commenters expressed support for the Tribe and the hunt. One letter said, "It is the right of the Makah to keep their culture alive and if whale hunting is part of it, so be it!" (*Peninsula Daily News* 1999). Some

DEIS scoping letters also expressed support for the hunt, remarking on tourist interest in whaling, cultural diversity, and the importance of upholding treaty rights. One scoping comment indicated that the Pacific Northwest embraces all cultures and practices and that people come to the area because of this diversity.

Organizations that oppose whaling in general include animal-rights and marine conservation organizations, the whale-watching industry, and anti-treaty constituents. Some of these groups are opposed to the Makah whale hunt, while others think that aboriginal whaling is an acceptable form of whaling, if conducted in a sustainable manner. More than 350 groups from 27 countries have expressed opposition to the Tribe's whale hunt (Oldham 2003).

In the 1970s, the popular Save the Whales conservation movement began with the objective of preventing the extinction of whale species (Sepez 2002). Information about whales and whaling was advertised by media releases, films, television programs, aquarium shows, videos, books, magazines, paintings, and whale-watching businesses, among other things (Barstow 1996; Sepez 2002). Over time, stemming from the unsustainable commercial whaling practices in the past, an ideological debate has emerged concerning the appropriateness of any whale hunting (Freeman 1994; Stoett 1997). Whales have become symbolic of the need to protect the natural environment, at least in western societies (Barstow 1996; Stoett 1997).

In 2002, after the IWC renewed the gray whale catch limits, some anti-whaling groups announced they would not obstruct the Makah hunt directly (Watson 2002), and one group expressed concern that opposition to the hunt might be misinterpreted as opposition to treaty rights (Mapes 2002). Most whale-watching tour operators are opposed to whale hunting primarily due to economic reasons. Some scoping comments expressed concerns that a gray whale hunt would affect local and regional whale-watching industry revenues by causing whales to avoid boats. The West Coast Anti-Whaling Society, made up of professional whale-watching tour guides, is one group that has opposed Makah whaling (Hamilton 1999b). More information on the whale-watching industry is available in Section 3.6.3.2.4, Contribution of Tourism to the Local Economy.

While Clallam County residents have expressed the range of attitudes about Makah whale hunting described above, a more intense debate about the issue seems to be occurring in and near Clallam County due to proximity to Neah Bay. This intense debate, which includes strong disapproval of and support for the hunt, is evident in the many DEIS scoping letters sent by Clallam County residents, verbal scoping comments recorded at the Port Angeles DEIS scoping

meeting, letters and calls from Clallam County residents received after the successful 1999 whale hunt, and whaling protests in Port Angeles. Of those Clallam County residents who expressed a view during scoping, more expressed disapproval of than support for the hunt.

A local group called Peninsula Citizens for the Protection of Whales actively opposes the hunt. The group's scoping letter expresses the fear that continued whaling will divide the community, and the many tribes in the area will be drawn into the controversy. Members of the group protested near the Makah reservation border in the spring of 1999 (Porterfield 1999). Another local group, Washington Citizens Coastal Alliance, based in nearby Friday Harbor, sent out a travel advisory to several hundred travel organizations, media groups, and individuals, expressing opposition to whaling (Hamilton 1999b). The advisory warned potential tourists to Neah Bay of recent conflicts and violence stemming from the whaling issue. The *Seattle Times* reported that other activists have said that the controversy was ripping apart rural Clallam County and Washington as a whole (Welch 2001).

Several incidents involving violent or near-violent confrontations between whaling opponents and Tribe members have occurred in Clallam County since the Tribe first announced its intention to hunt whales in 1995. It is difficult to determine which protesters are local residents and which are representatives of anti-whaling organizations based outside the area. An anti-whaling activist meeting in Port Angeles in 1998 was the scene of a near-riot when Makah Tribe members showed up uninvited to support whaling (Peterson 2000). One incident in 1999 involved two animal-rights activists tossing ignited smoke canisters at a tribal motorized support boat and throwing an ignited flare into the water near the boat (Porterfield 1999). Another incident involved a protest boat being pelted with rocks and bottle rockets after a group of protest boats converged inside the Neah Bay Marina (Gottlieb 1999). One man burned the American flag and some tires in a Port Angeles park in protest of the whale hunt (Gottlieb 1999). After the successful 1999 whale hunt, Tribe members and the Coast Guard received emails and phone calls with death threats and anti-whaling messages (Hamilton 1999c). Some Tribe members have been refused service at businesses in Port Angeles (Hamilton 1999c). See Section 1.4.2, Summary of Recent Makah Whaling – 1998 through 2007, and Section 3.15.3.4, Behavior of People Associated with the Hunt, for a more complete description of protest activities.

Other evidence of heightened local tensions can be found in a 2001 letter from the Port Angeles Chief of Police and Clallam County Sheriff to NMFS, asking NMFS not to hold public hearings on the whaling issue in Port Angeles for the 2001 EA. The request was made due to concerns that

violent demonstrations would overwhelm the resources of local law enforcement (Port Angeles Police Department 2001).

3.9 Cultural Resources

3.9.1 Introduction

The following section discusses the cultural resources in the project area that may be affected by the proposed action.

3.9.2 Regulatory Overview

Federal and state laws protect and preserve cultural resources. The United States' first preservation law, the Antiquities Act of 1906, was updated and expanded in 1966 when Congress enacted the National Historic Preservation Act, declaring that "the historical and cultural foundations of the Nation should be preserved as a living part of our community life and development in order to give a sense of orientation to the American people." Thus, the National Historic Preservation Act established a national historic preservation program that has operated as a decentralized partnership between the federal government and the states. The National Historic Preservation Act, amended in 1980 and again in 1992 (16 USC 470 et seq.), identified a leadership role for the federal government in historic preservation. Through a partnership with the states, in addition to relationships with Indian tribes, local governments, and private organizations, the National Historic Preservation Act fosters conditions "under which our modern society and our prehistoric and historic resources can exist in productive harmony." These relationships provide broad participation in national historic preservation programs, while maintaining standards consistent with the National Historic Preservation Act and the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716, September 29, 1983).

Federal agency requirements to consult with Indian tribes are clarified in the Advisory Council on Historic Preservation's regulations, Protection of Historic Properties (36 CFR Part 800), implementing Section 106 of the National Historic Preservation Act. These regulations emphasize participation in this process by state historic preservation officers and the public, including Native American groups. Where the pertinent tribe has taken over all or some functions of the state historic preservation officers, as the Makah Tribe has done, the federal agency must consult with the tribal historic preservation officer for projects occurring on Indian reservations or potentially affecting a tribe's off-reservation traditional cultural properties.

Archaeological resources on federal lands received federal protection under the 1979 Archaeological Resources Protection Act and the 1990 Native American Graves Protection and Repatriation Act. Federal law applies to all federal and Native American lands, and Washington State law applies to all other lands. Washington State Executive Order 05-05 provides for the Department of Archaeology and Historic Preservation to review certain projects not undergoing Section 106 review to determine potential impacts to cultural resources. With respect to cultural resources within the Makah Tribe's traditional territory, the Tribe takes an active role in the documentation and preservation of these resources, including the assessment of potential impacts to its cultural resources.

3.9.3 Existing Conditions

3.9.3.1 National Historical Register Sites

There are three historic sites listed on the National Register of Historic Places near the project area where a whale could be landed (i.e., the Makah U&A waters and shoreline). The first is Quimper's Landing at Neah Bay, which is the site where the Spanish anchored in Neah Bay and laid claim to Cape Flattery in 1790. The anchorage site is in the northeast waters/shore of Neah Bay near Waadah Island. The second is Tatoosh Island, which was a summer home to the Makah Tribe. The Makah landed whales on Tatoosh Island. A lighthouse was erected there in 1857. The third listed site is Wedding Rock Petroglyphs, located on the beach between the Ozette and Sand Point Trails in the coastal strip of the Olympic National Park (i.e., Ozette Triangle). The Wedding Rock Petroglyphs are located in the rocks about the high tide line, and they attract many visitors each year.

3.9.3.2 Archaeological Sites

Around 1750, a substantial section of the Ozette village on the outer coast of the Olympic Peninsula was encased in a spring mudslide. This anaerobic environment preserved wood, bone, textile, and cordage to create unprecedented archaeological preservation. More than a decade of archaeological excavations at this site, beginning around 1970, yielded 55,000 artifacts, 12,000 structural remains, and more than 1 million faunal remains. These archaeological investigations revealed about 2000 years of human occupation along the Olympic Peninsula in the Late Period of the Northwest Coast (Wessen 1981).

3.9.3.3 Other Culturally Important Sites

Of particular assistance in determining the presence and location of traditional cultural properties was the "Makah Traditional Cultural Property Study," prepared for the Office of Archaeology

and Historic Preservation, State of Washington, Olympia, in cooperation with the Makah Cultural and Research Center, Neah Bay (Renker and Pascua 1989). That study recognized the entire Makah traditional territory as a traditional cultural property. For the purposes of the EIS, however, the definition of a traditional cultural property was narrowed to include only those sites known to be directly associated with whaling for which the location has been reported. Makah elders identified First Beach, situated immediately adjacent to Neah Bay, as a site associated with butchering whales. A review of the ethnographic literature did not locate other sites that would meet the criterion of a traditional cultural property for this EIS.

First Beach, situated next to Neah Bay, was where the chief of the Neah Bay village towed his whale for flensing. It was known in the Makah language as *čˀi·ʔawa·ʔiyak*, "place for butchering whales." Renker and Pascua (1989, no. 190) listed this site as a traditional cultural property retaining significance to the Makah Tribe. Other chiefs towed harvested whales to beaches closer to their villages.

There are several, unlisted shell midden sites in the Olympic National Park, and these are actively exposed along eroding beach terraces. There are also unlisted whaling sacred sites, where Makah Tribe whaling families and members would prepare for whaling. The locations of such sites are regarded as private knowledge that is not generally divulged to non-family members. There are no specific known locations that the Tribe uses continually and that could be considered historical sites.

3.10 Ceremonial and Subsistence Resources

3.10.1 Introduction

The following section presents the cultural aspects of the Makah Tribe's proposal to hunt gray whales for subsistence and ceremonial purposes (Section 3.16, Human Health, for further information about the nutritional aspect of subsistence and ceremonial hunting). This section also includes a discussion of the symbolic value of the whale to the Makah people's cultural identity.

3.10.2 Regulatory Overview

The American Indian Religious Freedom Act of 1978 (42 USC 1996) contains the following language:

> . . . it shall be the policy of the United States to protect and preserve for American Indians . . . their inherent right of freedom to believe, express and exercise [their] traditional religions,. . . including but not limited to access to sites, use and possession of sacred objects and the freedom to worship through ceremonials and traditional rites.

Additionally, the Religious Freedom Restoration Act of 1993 (42 USC 2000b) provides protections for religious practice. The statute places the initial burden on a person to establish that religious practices have been substantially burdened. The Makah have asserted that the spiritual and ceremonial practices associated with whaling are protected by these two statutes (Makah Tribe 2006b).

In the Treaty of Neah Bay, the Makah Indian Tribe reserved its right to engage in subsistence activities, including hunting, fishing, whaling, and sealing in its usual and accustomed grounds (Section 1.2.2, Treaty of Neah Bay and the Federal Trust Responsibility). In the Ninth Circuit decision in *Anderson v. Evans*, the Court of Appeals expressly stated that ". . . [w]e need not and do not decide whether the Tribe's whaling rights have been abrogated by the MMPA." The court also noted that ". . . [u]nlike other persons applying for a permit or waiver under the MMPA, the Tribe may urge a treaty right to be considered" during review of the Makah Tribe's request (*Anderson v. Evans* 2004).

3.10.3 Existing Conditions

The Makah call themselves *qwidičča?atx̣,* which is generally thought to mean "residents of the place of rocks and seagulls." They are, however, best known by the anglicized term *máq̓á?a*, which is used by their Klallam neighbors to refer to the Makah Tribe. The Makah Tribe continue to reside on lands within their traditional territory situated on the northwest tip of the Olympic Peninsula, bordered by the Strait of Juan de Fuca and the Pacific Ocean. Tribe members maintain a strong orientation to the sea and the resources it provides.

Both linguistically and culturally, the aboriginal Makah people were closest to the Ditidaht and Nuu-chah-nulth peoples of western Vancouver Island, with whom they shared the occupation of whaling. While ties to these Canadian neighbors continue, the people of the contemporary Makah Tribe participate with other western Washington tribes as members of the Northwest Indian Fisheries Commission, whose mission is the conservation of fisheries dependent upon effective and progressive management (Northwest Indian Fisheries Commission 2005).

3.10.3.1 Makah Archaeological Resources Connected with Whaling

Much of the archaeological and historical evidence of the Makah whaling tradition was obtained through a large excavation of a Makah whaling village (Ozette) that was occupied by the Makah Tribe from 400 B.C. to 1920. Around 1750, a substantial section of the Ozette village on the outer coast of the Olympic Peninsula was encased in a spring mudslide. This anaerobic environment preserved wood, bone, textile, and cordage to create an unprecedented archaeological

preservation. More than a decade of archaeological excavations at this site, beginning around 1970, yielded 55,000 artifacts, 12,000 structural remains, and more than one million faunal remains. These archaeological investigations revealed about 2000 years of human occupation along the Olympic Peninsula in the Late Period of the Northwest Coast (Wessen 1981).

Aboriginal people began moving from interior riverine sites to the bays along the Pacific Ocean around 400 B.C., where they then adapted to a maritime orientation. This adaptation brought about an increase in sea mammal hunting, including whaling, which, along with deep sea fishing, necessitated the development of the large, seagoing canoes described ethnographically by Waterman (1920). An archaeological walking survey of Makah territory, complemented with test excavations at six additional sites representing divergent environmental zones, indicated that all of the investigated sites shared an orientation towards sea mammal hunting that was seen most clearly at Ozette (Friedman 1976:204).

Based on the recovery of whaling equipment and whale bones with embedded fragments of harpoon blades at the Ozette excavation, archaeologists determined that, for at least 1,500 years, the Makah Tribe paddled out to sea to hunt whales. Earlier, as evidenced by butchered whale bone in archaeological deposits, the Makah Tribe harvested drift and stranded whales (Huelsbeck 1994). The skeletal remains of the gray whale and humpback whale were both equally represented and the dominant whale species recorded in the deposits where the whale species could be identified, suggesting that they were actively pursued by Makah hunters. Moreover, the number of whale bones recovered from different areas of the site representing different time periods did not vary, suggesting that whaling remained stable. Artifacts recovered archaeologically indicate that whaling techniques described ethnographically by Drucker (1951) were used prehistorically (Huelsbeck 1994). Canoe fragments, harpoon shafts, harpoon heads, sinew ropes, and wooden plugs from seal skin floats have all been found (Huelsbeck 1994).

Most of the excavated bones identified as whale could not, however, be identified by species due to limitations of the comparative material available (Huelsbeck 1994). From the skeletal material that could be identified, nevertheless, archaeologists concluded that, at Ozette, whales represented much more food than all the other kinds of animals combined (Huelsbeck 1994). Researchers estimated that as much as 85 percent of the pre-contact diet of the Makah Tribe, that is, their diet before the first arrival of Europeans in the late 18th century, could have been composed of whale meat, oil, and blubber (Huelsbeck 1988). Archaeological evidence in the form of roughly cut and gouged bones suggests that the Makah, in addition to rendering blubber for oil, extracted oil from

bones, a practice not reported ethnographically (that is, through interviews with Makah elders) or through observation of their practices. In addition, partially burned bone suggested roasting as a method of cooking the meat (Huelsbeck 1994). Fragments of whale skin were also found inside the remains of houses at Ozette, a finding consistent with Koppert's (1930) remark that whale skin was eaten. While Koppert (1930) thought that the entire whale was used, other reports differed on the extent of carcass used and/or consumed by the Makah (Waterman 1920).

3.10.3.2 Makah Cultural Environment

At the time of the treaty, the Makah Tribe permanently occupied five villages situated on the northwestern tip of the Olympic Peninsula before contact with Europeans: *di·ya·* or Neah Bay; *bi?id?a* or Biheda; *wa?ač̓* or Wayatch; *c̓u·yas* or Tsoo-Yess; and *?use·?iɬ* or Ozette. In addition to these five semiautonomous winter villages, Makah families occupied seasonal sites, such as fishing camps on the outer coast (Friedman 1976; Renker and Gunther 1990).

Anthropologists classify the Makah Tribe within the Nootkan (Nuu-chah-nulth) subdivision of the Northwest Coast Cultural Area, a cluster of societies that share certain traits and trait complexes. Drucker (1951) defines these traits:

- A marine and riverine orientation that permeated not only subsistence practices but ideology and outlook
- An emphasis on fishing and marine mammal hunting, as well as the gathering of shellfish, other marine invertebrates, and plants
- A highly developed woodworking technology
- A tripartite system of social stratification that included nobles, commoners, and slaves
- An emphasis on property, both tangible and noncorporeal
- The integration of rank and kinship as the basis for social interaction

The Makah Tribe's location and wealth in natural resources placed tribal members at the hub of a far-reaching trading network that extended north to Vancouver Island, south to the Lower Columbia River, and east to the tribes of the Strait of Juan de Fuca. Whale oil and other coastal products passed along this network (Swan 1870; Renker and Gunther 1990).

3.10.3.3 Historic Makah Community

The Makah winter village comprised the primary residential community. The people lived in large, shed-roofed, cedar plank dwellings during the rainy winter months when resource harvesting activities were at a low ebb, and ceremonial life was more active. People identified themselves primarily with their winter village, but individuals maintained kinship ties with

several villages, not all of them Makahs. Kin units among the Makah were organized on the basis of non-unilinear descent, meaning that members all acknowledge descent from a common ancestor traced through either males or females. Leadership tended to be controlled by a patrilineal core of elite residents, generally consisting of a father and his sons with their families, resulting in households being quasi-lineages that controlled production, consumption, and resources. Hence, these elite groups of kinsmen were the chiefs who owned the resources and organized the work of others for resource harvest and distribution.

The elite members of Makah society were the titleholders, the chiefs or nobles who held rights to inherited leadership positions. Despite their considerable prestige and ritual authority, however, they held limited political power. Chiefs had influence, but could seldom compel other individuals to act against their will. Commoners and slaves formed the lower two strata of society. The former enjoyed the privileges of membership in their descent group and had access to resources and ceremonial prerogatives, although commoners did not have rights to ranked titles. Slaves, however, obtained through capture or purchase from other tribes, were human property devoid of rights (Drucker 1951; Colson 1953; Renker and Gunther 1990). Such distinctions in rank and status declined following guidelines set forth in the Makah Tribe's 1855 treaty and the establishment of the Neah Bay Indian Agency in 1863. Under the influence of Indian agents who promoted assimilation, the Makah Tribe's pre-contact, visible sociopolitical organization was weakened. In 1879, the community of Neah Bay held its first election for headmen, the result of which was recorded by James Swan, who noted that similar proceedings were soon to be held at the other Makah villages (Goodman and Swan 2003).

3.10.3.4 Makah Historic Whaling

At least seven species of whale are distinguished in the dialects of the Makah Tribe and their Nuu-chah-nulth neighbors (Swan 1870; Sapir 1910 to 1914; Waterman 1920; Densmore 1939; Stonham 2005). From review of the ethnographic record, especially the work of Drucker (1951), whales, from the perspective of the Makah Tribe and neighboring aboriginal groups on the Northwest Coast, differed little from humans: both have human form, live in houses (although the whale's home is at the bottom of the ocean), and travel about in canoes. The aboriginal people believed that the familiar bulbous gray form observed as whale, gray or humpback, was merely a whale spirit riding in its canoe while fishing (Sapir 1910 to 1914). By means of the whaler's ritual supplications, the whale's spirit was enticed to leave its canoe, which allowed the whale's body to be caught (Jonaitis 1999).

Ethnographic reports indicate that Makah Tribe hunters pursued mostly gray whales and humpbacks (Waterman 1920; Drucker 1951), while skeletal remains in archaeological sites suggest that right whales and finbacks may have been taken occasionally, and sperm and orca whale remains probably represent salvaged drift whales (Huelsbeck 1988). The unifying characteristic of those whale species the Makah pursued was a slow swimming speed, enabling their capture by men in canoes. The hunting season for gray whales began in March, when they appeared in numbers off Tatoosh Island on their coastal migration north, and resumed in November during their migration south. Pods of humpback and grays may have remained in the area all summer (Huelsbeck 1994), permitting whale hunting to occur from early spring through the fall.

The killing of whales was the prerogative of titled men among the Makah Tribe (Swan 1870), due largely to the necessary elaborate rituals associated with whale hunting, the cost of outfitting an expedition, and the authority needed to assemble a crew (Drucker 1955). The success of the hunt relied upon the whalers' strict observance of ritual knowledge, which only the elite possessed and which the Makah Tribe believed to be the essential basis of a whaler. Knowledge of and adherence to the rites, along with spiritual assistance received through prayer to the ancestors, was reflected in a chief's wealth. Thus, in Makah theory, the rituals were responsible for one having wealth, and wealth demonstrated the presence and efficacy of a man's spiritual power. Wealthy men married the daughters of powerful chiefs, perpetuating the presence of an elite class and, by selecting spouses from other communities, creating a social and economic network through which wealth, people, and information passed. Drucker (1951) describes the Nuu-chah-nulth groom's harpooning of the door of the bride's house during the marriage ceremony, using an imitation whaling harpoon, complete with floats. The association of whaling with wealth and rank was also evident during marriage ceremonies such as one witnessed at Neah Bay in the 1850s, when the groom's party reenacted a whale hunt upon arrival (Hancock 1927).

In preparation for hunting, Makah whalers trained themselves to acquire spiritual strength and power so that the whale could be killed more easily. Training consisted of ritual bathing, praying, rubbing the skin with boughs or nettles, and imitative performances. Such practices took place at selected, secret locations that were regarded as spiritually powerful places, some of which included elaborate shrines adorned with carved figures and human skulls said to represent the whaler's ancestors (Waterman 1920; Gunther 1942; Drucker 1951; Jonaitis 1999). Each family or extended family had its own secret spot, usually no larger than a room, but kept private from all other families. Even the details of the bather's costume, the prayers, and the type of branches the

whaler used were private knowledge that was passed from one generation to the next according to the rules of inheritance. The absence of centralized dogmatic control of spiritual and ritual practices was characteristic of Makah society. Thus, the practices described in this document and recorded by anthropologists and other early observers as Makah may have been the practices of a particular extended family group, but ritual practice varied from family to family. The widow of one Makah whaler recalled how her husband visited a specific place immediately before the hunt in the early 1940s, and his training continued throughout the whaling season to be ready whenever whales were sighted (Gunther 1942). In one hunting strategy, lookouts were stationed at coastal high points to alert hunters of the presence of a whale.

Chiefs had two methods of obtaining whales: either hunting them from a canoe on the open water and harpooning them, or using ritual to entice them to die and float ashore. A focus of the whaler's ritual activity at his shrine was to entice the whale to relinquish its spirit and allow its body to drift ashore, thereby permitting the chief to avoid the dangers of hunting at sea (Drucker 1951; Jonaitis 1999).

The whale had a special relationship to the noblewomen and, during the hunt, the whaler's wife would act as if she had become the whale. Her movements would determine the behavior of the whale—if she moved about too much, the whale her husband was hunting would be equally active and difficult to spear; if she lay quietly, the whale would give itself to her husband. Towing chants often reflected this association, and the whalers addressed the dead carcass using a term that refers to a chief's wife. His wife greeted the whale when the hunters towed the carcass to shore, and she led the procession to the chief's house (Drucker 1951). This transformation that occurs during the ritual, i.e., noblewoman becoming a whale, has an empirical connection, as the presence of the whale in the village validates the chief's spiritual power, authority, and wealth, including his bond to noblewomen who are themselves descendants of great whalers (Gunther 1942; Drucker 1951; Renker 2002).

Hunting crews were led by the titled nobleman who owned the 30-foot cedar canoe and its specialized equipment and acted as harpooner. There were typically seven other crew members, including a steersman and six paddlers, one of whom was also a diver who fastened shut the whale's mouth after it had been killed. Each of the eight-man crew was physically fit and either possessed hereditary access to the position and its complementary ritual knowledge, or obtained such knowledge through a supernatural encounter (Curtis 1916; Waterman 1920). Each man dressed in special skin clothing adorned with feathers (Sapir 1910 to 1914). A number of canoes

hunted together, each outfitted with harpoons, sealskin floats, harpoon lines of whale sinew and others of cedar, and a variety of knives (Waterman 1920). Several ethnographic reports containing information based on accounts from whalers have described the hunt (Curtis 1916; Drucker 1951). When a whale was sighted from shore, the Makah hunters set out in previously equipped canoes that were kept ready for use. Whales could often be observed close to Umatilla Reef and Swiftsure Bank, near the entrance to the Strait of Juan de Fuca, where the migrating whales would be feeding. A hunt could last for several days and take the hunters far out to sea, a journey that required considerable navigational skills (Waterman 1920).

Curtis' (1916) description of the hunt conveys some of the hunters' specialized knowledge and finely tuned skills that were the necessary complement to the rigorous spiritual training each hunter endured. Yet there was likely no skill more important than that of the chief who wielded the immense harpoon and, only several feet from the whale, thrust it into the flesh of the submerging prey, after the whale's flukes went underwater and could not upset the hunters' canoe. Once harpooned, the Makah hunters threw several other harpoons into the injured animal, until it was finally exhausted. Then the whale hunters began singing to the whale, imploring it to head shoreward as they started the arduous task of towing home their immense catch. When the hunters followed the prescribed rituals, the whale spirit left the body of its host, and the hunters successfully towed the whale to the chief's village for butchering. As they traveled, the hunters continued to sing chants encouraging the whale to move to shore (Curtis 1916; Waterman 1920; Drucker 1951).

First Beach, situated next to Neah Bay, was where the chief of the Neah Bay village towed his whale for flensing. It was known in the Makah language as *čˀi·ʔawa·ʔiyak*, "place for butchering whales." Renker and Pascua (1989, no. 190) listed this site as a traditional cultural property retaining significance to the Makah Tribe. Other chiefs towed harvested whales to beaches closer to their villages.

The villagers hauled the catch as high on the beach as possible. In some communities, all the village children helped pull the whale the last few yards (Drucker 1951). Butchering procedures depended on the species, but ritual and ceremony always accompanied the initial steps as an elderly whaler made the first cut into the whale, now decorated by the Makah with eagle feathers and white down taken from waterfowl, and the men began to strip away square slabs of the valuable blubber. The dorsal section, richest in oil, was reserved for the chief hunter, though he is reported often to have sold or given it away. Choice morsels were reserved for the hunters and for

those leading men who had rights to particular pieces of the whale. The chief whaler, dressed in ceremonial gear, also entertained the villagers with his songs and imitations. He provided the villagers with freshly cooked blubber from his catch and distributed the remainder. The villagers, in turn, sang songs honoring the chief's and the whale's prowess and generosity. For as many as four nights, the chief led the community in ceremonial performances marked by imitations of the whale, the hunt, and songs that praised the whale. Individual whalers owned different songs (Waterman 1920; Swan 1870). Drucker (1951) noted that the Nuu-chah-nulth carried the concept of ownership to "an incredible extreme," with the result that all ceremonial privileges, such as the right to use certain songs and dances, perform certain rituals, or certain acts within them, were owned property.

The Makah probably regarded the whale as a guest in the village in the same way as the Nuu-chah-nulth of Vancouver Island. Thus, once the community had feasted, the hunters had to return the whale's spirit to the sea by casting small pieces of flesh and blubber into the ocean where it could not wash up on shore (Curtis 1916). The whale carcass was then left for the villagers to help themselves (Drucker 1951). This activity was shared by "the entire tribe, great and small, male and female," according to one observer in the 1850s (Hancock 1927), after which the birds and other scavengers picked at the remains on the beach (Waterman 1920). Thus, once the chief had directed the removal of all the blubber, to be eaten fresh or rendered into oil, the villagers took most of the flesh, also for consumption, in addition to the bones and baleen, as needed.

Drift whales ─ those whales that drifted to shore after death ─ were reported to the beach owner by messengers, who were paid for the find. The drift whales were examined to identify any signs of ownership, indicated by specific marks on any harpoon heads embedded in the whale's flesh, or on seal skin floats attached to the harpoon. Whales that had been identified as lost after being harpooned, or that had been cut free when bad weather threatened the hunters' return home, belonged to the hunter, unless another chief's mark was identified. The villagers would congregate on the beach to strip the whale's blubber for their respective chief, after which the people would help themselves to the meat and blubber, again leaving the carcass with most of the bones (Drucker 1951).

Meat that was decayed, which sometimes occurred with drift whales, or whales caught too far from shore on which the flesh began to rot, was left on the beach along with the bones. The villagers took the bones from the beach only when they could serve some purpose; thus, the skeleton with any remaining morsels of meat remained on the shore or was washed out to sea

(Waterman 1920; Drucker 1951). Blubber, however, seldom deteriorated to the extent that it could not be used, if only for technological purposes, and it was not consumed (Waterman 1920; Drucker 1951).

Whale products provided enough blubber and oil for the aboriginal village, as well as a surplus of oil to be traded with neighboring tribes (Lane 1972). An account of exchange included in the journal of John Jewitt, a crewman from an American vessel taken captive by the Nuu-chah-nulth chief Maquinna in 1803, noted that Maquinna's trade with neighboring tribes was "principally train oil," and from the Makah he received "great quantities of oil" and whale sinew (Jewitt 1993). The oil was stored in boxes specially made for the purpose or in bladders or stomachs of marine mammals and certain large fish (Curtis 1916). Whale oil was a standard condiment served with meals, typically used as a dip for dried foods such as salmon and berries (Drucker 1951). Whale oil was also thrown on central fires to fuel the blaze during rituals, and at least one visitor to the area in the mid-1800s observed shell lamps in which whale oil was burned (Drucker 1951). The Makah Tribe made offerings to the supernatural world by burning feathers and whale oil, an act accompanied by prayers from the head of the household (Curtis 1916). In the 1840s, Makah traders provided whale oil to the Hudson's Bay Company's Fort Victoria for shipment to England (e.g., Fort Victoria Journal, December 7, 1846). Additionally, Makah craftsmen used bones and baleen as raw material for tool manufacture and bones as building material (Huelsbeck 1994).

The ethnographic literature is inconsistent regarding the consumption of whale meat, the dark flesh found under the thick layer of blubber (Waterman 1920). Stories recorded by Edward Sapir in the early 1900s tell of Nuu-chah-nulth villagers boiling fresh whale meat, drinking the broth (Arima et al. 2000), and giving feasts of meat and blubber (Sapir 1910 to 1914). Drucker (1951) confirmed Curtis' (1916) earlier report that the whale flesh could be both sun and smoke dried, although statements by Drucker's Nuu-chah-nulth consultants indicate that the meat was dried in smaller quantities than the valuable blubber. So rich was the partly dried blubber that pieces of it were given to suckling newborns until the child's mother could produce enough milk, generally by boosting her own nutrition with extra servings of blubber (Curtis 1916). Swan (1870) reported that only the vertebrae and offal were left unused. Among the whale bone artifacts recovered from the Ozette site are spindle whorls, bark shedders and beaters, cutting boards, clubs, wedges, and tool handles (Huelsbeck 1994). Drucker (1951) also reported the historic use of whale bone for such implements.

Historical and ethnographic accounts provide only rough calculations of the numbers of whales taken annually. The catch of 15.99 and 36.9 tons of blubber was reported and likely a similar amount of meat, depending upon whether the whales were Pacific grays or humpbacks, respectively (Huelsbeck 1988). Another source, writing specifically of the Makah Tribe, estimated that an average whaler might take one or two whales a year, but that a skilled and fortunate hunter might catch as many as five in the same period (Densmore 1939). This is a higher estimate than the numbers harvested between 1889 and 1892 when the entire Makah Tribe (including all whalers) averaged 5.5 whales a year (Huelsbeck 1988).

Reassessments of the role of whaling in aboriginal society indicate that whaling had great economic and social significance (Huelsbeck 1994; Renker 2002) and was not simply a "symbol of chieftains' greatness," with "little economic importance," as anthropologist Philip Drucker (1951) once described whale hunting, in light of the few whales caught by Nuu-chah-nulth men he interviewed in the mid-1930s. Ceremonies, music, and dance associated with this occupation, based on chiefly ownership and rank, held a central role in the maintenance of the Makah social system. A titled family maintained its standing by hosting ceremonies, particularly intervillage potlatches, performing hereditary songs, displaying owned prerogatives, and giving away food and gifts, all of which required great wealth. Even before a successful hunt, whaling chiefs held potlatches at which they made gifts of sticks said to represent strips of blubber to be given at a later date (Drucker 1951). The hereditary privileges owned by whalers and displayed at significant events were games and songs associated with the whale (Goodman and Swan 2003), among them a performance in which the dancers wore gear and imitated the motions of a whale (Densmore 1939).

3.10.3.4.1 Cessation of the Hunt

Historical and ethnographic records indicate that the Makah Tribe hunted whales until the 1920s when this practice went into abeyance. However, this period represented the conclusion of a gradual decline in whale hunting that had taken place since the 1855 Treaty, when 30 Makah canoes hunted together, and each canoe was said to have processed 1,000 gallons of oil (Swan in McDonald 1972). Swan (1870) noted that, even in the 1850s, the Makah Tribe was whaling less than in the past, but he could provide no clear explanation for the decline.

An account of one of the last Makah Tribe whale hunts was reported to the Victoria Colonist in 1905, largely due to the observer's fascination with the Makah Tribe's use of new technology for whaling. In that hunt, 60 Makah hunters in six large canoes stalked a whale. Once the main

harpooner hit the prey, his fellow hunters thrust a large number of iron-tipped harpoons into the injured animal. A steam-powered commercial tow boat then pulled the whale into Neah Bay for butchering (cited in Webb 1988).

By 1916, Curtis (1916) observed that the Makah Tribe had recently revived the practice of whaling. It is clear, however, that the hunt had been untenable for a number of years and had ceased completely by the 1920s. By the time of the last Makah whale hunt, a constellation of factors ─ social, economic, and biological ─ had contributed to the Makah's cessation of the hunt until 1998 (see also Section 1.1.4, Summary of Makah Tribe's Historic Whaling Tradition). It was not the first time that the Makah Tribe interrupted a marine-based occupation, only to resume it when conditions improved. Makah witnesses appearing before the British Commissioners investigating the pelagic fur seal industry in the 1890s reported "for about twenty years the hunting was practically given up" because of the loss of lives at sea while hunting (cited in Crockford 1996). When conditions improved, the Makah Tribe resumed this activity in the early 1900s.

Recent research by Jennifer Sepez (2001) reveals that some Makah families continued to use whale meat and oil after the 1920s, when the hunt was discontinued. However, Sepez hypothesized that the likely source would have been from beached whales, whales caught in fishing nets, or possibly aboriginal whale hunts that continued to occur in Canada in the 1930s. At this time, British Columbia canneries sometimes processed whale meat obtained by aboriginal hunts (Webb 1988).

3.10.3.4.2 Factors Responsible for Discontinuation of the Hunt

Robert L. Webb's (1988) history of commercial whaling documents a steady decline in all species of whale that became the target of commercial whalers. Historical evidence indicates that the bay-whaling, which occurred in the lagoons of Mexico and Baja California in the 1840s, and the shore-based commercial whaling that began off the California coast in 1851 significantly reduced the once-healthy stocks of migrating ENP gray whales along the western coast of Washington. One observer estimated that, around the mid-1850s, 1,000 whales could be seen each day between December and February making their southern migration, suggesting to Scammon (1874) that whales migrating along the coast of California likely numbered about 30,000 a season. When Charles Scammon published his first edition of *The Marine Mammals of the North-Western Coast of North America* in 1874, only 20 years later, he estimated that the number of migrating gray whales did not exceed 10,000 whales.

With the development of the darting gun around 1870, which replaced the iron harpoon hurled by manual strength from the bow of a whaleboat, it became possible for commercial whalers to kill humpback whales (Webb 1988). This placed the industry in direct competition with the Makah Tribe, who hunted this species along with the gray whale.

The new whaling methods included steam-powered chaser boats on the sea and oil-fired steam rendering plants on shore, making easier, faster hunts possible and providing diverse new products from the raw materials. Although whale oil now competed with less costly petroleum products and vegetable and mineral oil, new ways of processing the oil kept it in demand and facilitated a renewed interest in whaling on the Northwest Coast in the early 1900s (Webb 1988). Humpback whales found in inlets and bays were hunted, along with blue and finback, and a new factory-ship technology permitted a resurgence of the gray whale hunt. Over a 10-year period, whale stocks dwindled. Thus, when the Makah Tribe and their Nuu-chah-nulth neighbors on Vancouver Island attempted to hunt whales in the early 1900s, few whales remained in the local waters (Webb 1988).

When World War I began, the government urged the public to consume whale meat without much success, as most Americans did not have a taste for the meat, although it appears that the Makah Tribe continued to enjoy it, and they consumed some whale meat processed by Canadian canneries (Goodman and Swan 2003). By the 1930s, with whale stocks almost entirely depleted, the whaling countries began to see the need to control the numbers of whales being taken. At a London conference in 1937, member countries adopted the International Agreement for the Regulation of Whaling, which applied stringent controls on the numbers and species of whales being killed. The gray whale became protected, along with right whales (except for a few taken by permit), by those countries participating in the agreement (Webb 1988). Commercial hunts depleted stocks of humpback whales as well, but international agreements did not protect this species until 1965 (Webb 1988).

Government policies, as Jennifer Sepez (2001) discussed in her doctoral thesis on the Makah Tribe's subsistence economy, affected both subsistence and commercial hunting efforts by regulating activities and creating incentives or disincentives. Historians and biologists agree that, other than regulations that protected the United States market for whale products, almost a century of commercial whaling occurred without regulation. This lack of regulation was viewed as responsible for the near-extinction of whale stocks on the Northwest Coast. Nevertheless, as reviewed below, it appears that, in addition to the decline in whale stocks, the Makah's increasing

involvement in the pelagic fur sealing industry also contributed to the Tribe's cessation of the whale hunt.

The skills that made the Makah successful whale hunters also made them valuable participants in the pelagic sealing industry of the nineteenth century. This commercial industry was an outgrowth of the Makah Tribe's aboriginal subsistence and fur-trade sealing efforts. By the 1860s, commercial sealing, relied substantially upon a contracted, aboriginal wage-labor force with the keen knowledge of navigation and watercraft needed to succeed at sealing. The shore-based hunt was considered dangerous, as the hunters followed the seals far from land in open canoes. In 1865, the Indian Agent at Neah Bay began chartering schooners to assist the Makah in their offshore hunts (Lane, cited in Crockford 1996). By the mid-1870s, the schooner owners benefited from the near-abandonment of the aboriginal people's shore-based seal hunt, as more men signed on to work from schooners and hunt seals (Crockford 1996).

The pelagic seal hunt relied upon certain elite tribal men continuing in their role as administrators of community economic activities. Whereas these men formerly organized the harvest and distribution of local resources, they now organized crews for the schooners. However, the more equitable distribution of the proceeds equalized the relative ranking of the participants, as the trade economy elevated the resource beyond the level of subsistence and put greater wealth directly in the pockets of crew members (Crockford 1996; Goodman and Swan 2003). Commoners were now ostensibly equal to chiefs, with opportunities available to them as individuals. Thus, the titled class could no longer expect the privileges that aboriginal whaling had helped them maintain, except in ceremonial potlatches and social networks. By 1875, sealing for furs was the Makah Tribe's chief form of income. By 1893, Makah Tribe members owned 10 sealing schooners. These vessels earned a healthy income for their aboriginal owners, but set these men apart from those who did not share in the profits of the new economy. Eventually, over-harvesting and government regulations led to diminished profits and, ultimately, the end of the seal hunting industry. In 1897, the United States government signed an international convention that effectively banned pelagic seal hunting by its citizens, and the once-successful Makah hunters were left waiting for compensation for their lost business, which they believed had been secured to them by treaty. As late as 1957, Murray (1988) reports the Makah Tribe was still appealing to Washington for payment due to losses incurred because of the 1897 law and the seizure of a Makah sealing schooner operating in Alaska. Shooting harbor seals for food continued through the 1990s, long after the hunting of fur seal ceased, as seal oil provided the Makah Tribe with fat that was rendered into oil and used as a condiment (Sepez 2001).

Government agents among the Makah Tribe made considerable, yet ineffective, efforts to promote self-sufficiency through agriculture on the reservation. Some agricultural opportunities became attractive to the Makah Tribe, especially because crop production provided cash, was open to all members of society, and, in the case of the hop and berry fields, permitted families to remain together while they worked as wage laborers. Unlike occupations such as sealing, in which only men were hired, and several Makah men became affluent, whole families could be employed on farms for low wages. Government agents also encouraged Makah children to adopt new values introduced through Christianity and education. In the 1870s, the United States government made potlatching, bone games, and other ceremonial activities illegal, as these activities were regarded as primitive and backwards, resulting in the Makah Tribe's loss of hosted occasions that advanced and recognized the status of leading whaling families (Goodman and Swan 2003). By the early 1900s, the Makah Klukwali (wolf ceremony), and Tsayak (curing ceremony), secret societies involving dramatic reenactments that had been performed by such families, had faded from public view (Goodman and Swan 2003). These secret societies either relocated to offshore islands or adopted a European-like façade to avoid interference by American authorities.

Another direct effect of government policy occurred in 1879 when the first election of chiefs or headmen took place at Neah Bay, followed by elections in the other Makah communities (Goodman and Swan 2003). It is likely that the community elected men of high rank, thus undermining the Indian agents' efforts to equalize the position of all Makah Tribe members. Introduction of the dominant American society's values, including the ideal of equality among all persons, was an expressed goal of United States government Indian assimilation policy in the late nineteenth century (Renker 2002; Goodman and Swan 2003). Yet the Indian agents' attempts to displace the authority, and consequently diminish the acquisition of wealth that accompanied chiefly positions, including that of the titled men who once carried out the whale hunt, took its toll on the community's recognition of traditional leadership. In the absence of the hereditary system, disagreements arose among those still claiming chiefly descent who expected recognition of the rights that flowed from these inherited positions (Goodman and Swan 2003). Despite changes in leadership positions, Makah families of high status kept alive some of the practical and ritual knowledge associated with the whale hunt, even in times of inactivity, although the relative influence of these families within the community declined with the changing economy (Drucker 1951; Goodman and Swan 2003). Drucker found similar retention of whaling knowledge among the Nuu-chah-nulth (1951). In the mid-1930s, he found that the chiefs of one

group passed down "both ritual and practical features of the [whaling] complex" to four generations without whaling, before their resumption of the hunt. According to Renker (2007), this transfer of whaling knowledge within Makah families has continued to the present day. The Tribe's 2007 needs statement explains as follows:

> …the Makah desire to reinvigorate the whaling tradition never dissipated. Families passed on whaling stories, traditions, and secrets from generation to generation. Whaling designs and crests still decorated public buildings and private homes. Accounts of Makah whalers were read again and again. Whaling displays in the Makah Cultural and Research Center and other museums kept visual scenes in the heads and hearts of Makah people. (Renker 2007)

3.10.3.5 Contemporary Makah Society

Several post-contact factors (that is, influences brought about after the arrival of the first Europeans in the late eighteenth century), including epidemic disease and mandatory schooling, resulted in consolidation of the five traditional villages into the single community situated at Neah Bay where most of the on-reservation Makah population now resides. The Neah Bay community primarily consists of single-family dwellings, including mobile homes and Housing and Urban Development houses, with housing for seniors located in the center of the village across from the Senior Citizens Center. The churches, schools, public health facilities, Makah Cultural and Research Center, and a large community center where revived potlatches, bone games, and other community functions are held are located in the community of Neah Bay.

Since 1931, Neah Bay has been connected with communities to the east by road on the Olympic Peninsula, although Makah life remains oriented to the sea. Subsistence and commercial salmon and halibut fishing have remained central to the Makah economy, especially after the cessation of the pelagic sealing industry at the end of the nineteenth century, due to the reservation's proximity to some of the biggest halibut fisheries on the Pacific coast (Colson 1953; Sepez 2001). From the 1950s through the 1970s, Makah men worked as loggers cutting timber from the reservation and nearby hills (Colson 1953).

The Makah Air Force Base, established in the area in the 1940s, closed in 1988. Its facilities are now occupied by tribal agencies and Tribal Council offices (Goodman and Swan 2003). Notwithstanding personal preference, a chronic housing shortage at Neah Bay now requires some tribal members to live in neighborhoods outside of Neah Bay, specifically Wa'atch, Baadah, Pacific Beaches, Diah't, and a housing development at Eastern Bayview (Sepez 2001).

The lineage group, or Makah family, is the fundamental element of contemporary intratribal identity, according to Sepez (2001), who notes that it is also the basic social unit in which cultural

traditions are passed between generations. Families hold divergent views of tradition, especially in spiritual and ceremonial activities, but also in the types of natural resources harvested and the amounts consumed. Most households, however, consume local subsistence foods during the year (Sepez 2001).

Logging that sustained the community relatively prosperously in the mid-twentieth century has now declined, although the Tribe operates Makah Forestry Enterprise, an expanding company engaged in forest management both on and off the reservation. Fishing, which had also declined, is now providing a higher total income than in the recent past, due to the development of trawl fisheries. Apart from these industries and a few small business enterprises, government is the largest employer in the area. Makah members no longer work in agriculture, because the hop and berry fields of western Washington turned into residential areas. Tribal artists produce jewelry, silk screen prints, and clothing with aboriginal designs for sale in local shops.

In response to the 1934 Indian Reorganization Act, the Makah Tribe wrote a tribal constitution and created the *Makah Tribal Council*, which replaced the former system of chiefs as the daily political arm of the Makah Tribe. Any enrolled member of the Tribe who resides on the reservation is now eligible to run for office, regardless of the class, rank, or status of particular ancestors (Goodman and Swan 2003). Other government policies were also reversed by the 1934 statute, particularly the previous practice of allotting tribal land to individuals. The act also supported Indian religious freedom and promoted a revival of Makah culture (Goodman and Swan 2003). Congress enacted the American Indian Religious Freedom Act in 1978 to further protect and preserve American Indians' inherent right to freedom to believe, express, and exercise their traditional religions (Trope 1994). This act was followed the next year by the Archaeological Resources Protection Act of 1979, which specifically mandates that the American Indian Religious Freedom Act be considered in the disposition of archeological resources. Subsequent legislation, the Native American Graves Protection and Repatriation Act of 1990, mandated the return of Makah and other tribes' sacred objects, objects of cultural patrimony, human remains, and associated funerary objects from federal agencies and federally funded museums (and universities) (Thornton 1994).

Makah Days, initially started in 1926 to celebrate the extension of American citizenship to American Indians, have evolved into a major three-day event held each August. The event celebrates Makah culture and attracts hundreds of visitors, both aboriginal and non-aboriginal. Months of community preparation culminate in a cultural festival highlighting traditional foods,

dancing, singing, and games, in addition to more contemporary events such as a parade, fireworks, and sporting events (Tweedie 2002). For this occasion, families share their less prestigious songs and offer training in dancing to non-family members. The songs and dances are used for public performances that, along with displays of athletic excellence, generate feelings of Makah solidarity in friendly opposition to other tribes, reinforcing the Makah Tribe's identity (Bates 1987).

Traditional Makah ceremonials that had declined by the 1950s have had a resurgence, beginning in the 1960s, due to the diligence of a small group of elderly Makah women who were well trained as children and retained knowledge of ceremonial affairs. They guided a new generation of Makah Tribe members who valued the cultural traditions of their people and began hosting community events (Goodman and Swan 2003). This coincided with the archaeological recoveries at the ancient Ozette site, which provided a material foundation for the revitalization of cultural activities. The Ozette investigations provided an important impetus for renewed respect of and interest in the knowledge of Makah elders who worked cooperatively with archaeologists in identifying artifacts. These individuals also provided the necessary guidance to establish the Makah Cultural and Research Center, a tribally owned and operated institution committed to the support of Makah cultural activities and the interpretation of the Ozette artifacts (Erikson 2002). The Makah elders decided to showcase the hunting of whales and seals in the Makah Museum's displays (Sepez 2001).

A number of clubs devoted to cultural activities also began in the 1950s and 1960s, including the Makah Club, the Sla-hal Club, the Makah Arts and Crafts Club, the Hamatsa Club, the Makah Canoe Club, and the Warrior's Club (that honored tribal members who served in the United States military). The revaluation of Makah traditions that occurred during this time provided an impetus for families to bring out songs and dances that had not been performed in decades (Erikson 2002). Federal funds made supplementary cultural programs possible, including a comprehensive summer program with funds for elders to develop classes in traditional crafts, music, and the Makah language (with a Makah language K through 12 program in the schools) (Erikson 2002:111 to 119). The resurgence of these programs has provided new outlets for Makah traditions; community events are now common occasions for singing and dancing, and the museum provides ongoing educational programming (Erikson 2002:168-171).

Potlatching increased in the 1960s, along with the resurgence in cultural awareness. Among the Makah tribal members, this activity appears to fluctuate with economic times. When better

economic prospects returned with an improved United States economy in the 1990s, several families hosted potlatches, some costing as much as $15,000 per ceremony (Goodman and Swan 2003). Ceremonial affairs may lack the complexity of former events, Goodman and Swan (2003) observe, yet many potlatch elements described in the nineteenth century can still be seen today as singers perform family-owned songs, young people receive ancestral names, guests participate in group dances, and the hosts serve great quantities of traditional native foods. Many of these songs and dances are those passed down among high-status whaling families and are used to publicly display their family wealth gained and maintained through generations of whaling.

Some of the five Christian denominations that established churches in Neah Bay have a history of intolerance towards aboriginal spirituality, while others have recognized the compatibility of Christian beliefs and Makah spiritual life. For traditionally minded Makah, a spiritual life is tied to the lands and waters of their territory, remote places devoid of human activity where private cleansing rituals can take place without intrusion, and initiates can draw near to the supernatural part of the world. Individuals perform rituals and seek proficiency in whatever endeavor they undertake by strengthening their relationship with particular spirits (Drucker 1951). The arduous requirements of whaling have led to the rejuvenation among some Makah hunters of whaling rituals, which are based on private family knowledge (Braund et al. 2007).

3.10.3.5.1 Makah Whaling

The cultural role of whaling is vividly demonstrated in the archaeological record and in the ethnographic accounts of the twentieth century that have been summarized above. These published accounts now supplement the Makah Tribe's oral traditions as they prepare for the contemporary whale hunt and consider past traditions for future manifestations of their culture. Many traditions related to whaling have waned, however, since the Makah Tribe's cessation of the hunt in the 1920s. Nevertheless, some of those individuals taking a leading role in revitalizing this occupation are from whaling families of high status who trace their ancestry to men who formerly hunted whales (Tweedie 2002). All this occurs at a time when the Makah Tribe is actively revitalizing its language and cultural traditions. According to Renker (2007), "Makah people had never stopped educating their children about their respective familial whaling traditions." Furthermore, the public school included a whaling curriculum, and the Makah Cultural and Research Center supported whaling education efforts. Renker (2007) noted, "While non-Makahs perceived a large temporal gap in the whaling history of the Tribe, tribal members saw continuity. Many individuals were patiently waiting for the whaling traditions to be taken from storage and implemented in reality."

The day in 1997 that the IWC acted on the United States' request on behalf of the Makah Tribe was marked on the Makah Reservation with celebrations, including giving tribal employees a half-day off and 30 local vehicles forming an impromptu parade, some of the cars and trucks appropriately decorated and horns blaring. An anthropologist observing the event later wrote, "It seemed that the entire village lined the parade route" (Tweedie 2002). The celebration continued the following week with a community potlatch at which tribal singers performed victory songs.

Support for the 1999 and 2000 hunts was subsequently confirmed in a household whaling survey compiled in 2001 and 2002 by the Makah Tribe. Surveyors canvassed the opinions of 35 percent of the on-reservation population concerning their views on the Tribe's resumption of whaling (Table 3-32). The expressed purpose of the survey was to address concerns of some non-tribal citizens who believed that the Makah Tribe did not support whaling and wasted the whale products received from the 1999 hunt. Anthropologist Ann Renker Ph.D., a Northwest Coast specialist with research experience among the Makah, designed the survey with input from the Makah Cultural and Research Center. Dr. Renker also analyzed the results of the surveys, administered by a team of trained Makah members. Of the 217 households of enrolled Makah members randomly selected and contacted for the study, 159 households agreed to participate. Four selected household heads were not interviewed due to their vocal public opposition to the hunt. Nevertheless, the survey instrument for each of these individuals was marked negative for all questions regarding support of the hunt or use of whale products and, thus, was included in the tabulation of results representing the views of 163 households. All respondents were at least 21 years and enrolled Makah members residing on the reservation. The respondents' confidentiality was maintained by using numbered surveys, keyed to a master list of households used for administration purposes, but not released to Dr. Renker during her analysis of the results. The Makah Cultural and Research Center holds the original surveys under restricted access. Dr. Renker's analysis is made available in report form for this DEIS assessment.

TABLE 3-32. MAKAH ATTITUDES TOWARD WHALE HUNTING

ATTITUDE	RESPONSE BY PERCENT (%)[1]
Makah Tribe should continue to hunt whales	93
Makah Tribe should not hunt whales	6
Undecided	1

[1] Survey had 163 respondents; percentages were rounded to the nearest whole number.
Source: Renker 2002.

As explanations of the interests and goals driving continuance of the whale hunt, Makah Tribe members' comments were placed into four categories during the survey review (Table 3-33). The

survey noted that 46 percent of respondents cited treaty rights to support the whale hunt (Renker 2007). For many Makah Tribe members, treaty rights, including the explicit right to hunt whales, have become an integral part of their cultural identity. The 150th anniversary of the signing of the Treaty of Neah Bay in 2005 was accompanied by a large community-wide potlatch and an essay contest for local high school students, which was sponsored by the Makah Tribal Council (Renker 2007). Thus, treaty rights play a significant role in Tribe members' present cultural identification with whaling.

Reasons given by the 7 percent of respondents not supporting the hunt, according to Bowechop (2005a), focused on "the timing of the hunt, feeling that the Tribe should wait for a more appropriate time," and "the inequality of women's involvement in the actual hunt."

TABLE 3-33. MAKAH REASONS FOR SUPPORT OF WHALE HUNTING

REASONS FOR SUPPORTING WHALE HUNTING	RESPONSE BY PERCENT (%)[1]
Treaty rights	46
Better nutrition or the desire for a traditional diet	35
Maintenance or restoration of cultural heritage or traditions	36
Moral or spiritual benefits that could be derived from the hunt	20

[1] Percentages are rounded to nearest whole number.

Source: Renker 2002.

The results of the survey reported in Renker (2002) were supported in an independent survey conducted by anthropologist Jennifer Sepez in connection with research undertaken for her doctoral thesis. In her random sample survey carried out in 1998, Sepez (2001) found that 73 percent of households planned to eat whale obtained from future hunts, but she cautioned that many household residents who did not plan to eat whale themselves explicitly stated that they supported the effort on behalf of those households with residents who wished to do so. Moreover, some household members clarified that, while they would not cook whale products themselves, they would consume whale if it were served at community feasts. Looking to the future, the Tribe's 2002 household whaling survey indicated that 87 percent surveyed desired whale meat as part of their regular diet, and 72 percent voiced a desire for whale oil (Renker 2002). Hence, both studies independently confirmed an expressed preference for this traditional food among the Makah Tribe.

The Tribe conducted the household whaling survey following the 1999 kill of a gray whale that was towed to Front Beach at Neah Bay for butchering. Seventy-nine percent of the survey respondents watched television coverage of the whale being taken. A larger number, 81 percent

of the 163 respondents, met the hunters on the beach when the whale was brought ashore. An estimated 1,400 tribal and non-tribal people witnessed the arrival of the whale and its hunters to Neah Bay. People traveled to Neah Bay from other communities to participate in the festivities and camped or stayed with relatives during festivities associated with the successful hunt (Renker 2002).

When asked about the positive benefits to be derived from continuing the hunt, 52 percent of the respondents reported a correlation between the hunt and a better lifestyle (Renker 2002). They viewed the hunt as a vehicle to reinforce traditional Makah values, such as pride, self-esteem, and male responsibility, in addition to combating the contemporary problem of substance abuse (Renker 2002, Braund et al. 2007). As preparation for the 1999 and 2000 hunts, Makah whalers reported enduring intense physical and spiritual training, which culminated in a deep bond between whalers (Braund 2007). Such preparation is considered a private affair among the Makah families (Braund et al. 2007). In some cases, whalers identified individuals who underwent major life changes as a result of participating in the whale hunt (Braund et al. 2007).

The Tribe's 2007 needs statement indicates that the lack of active whaling in the community since the 1999 and 2000 hunts had already negatively affected Makah youth by denying them role models in the form of active whalers. It contains the following passage: "[T]he lack of whaling made it harder for Makah youth to find role models among whalers and removed an incentive for young men to focus on the physical and spiritual requirements necessary to a training regimen" (Renker 2007).

As in the past, the killing of a whale is a focal event in which many Makah people are directly or indirectly involved. Table 3-34 lists some of the activities involved in the 1999 whale hunt, with a tally of the numbers or percentages of Makah Tribe members involved in each activity, based on data obtained during the household whaling survey and contemporary ethnographic literature (Renker 2002; Bowechop 2004, 2005a). Some individuals are counted in more than one category in Table 3-34

While only four canoes of men participated directly in towing the whale ashore in 1999, 38 percent of the Makah surveyed reported that they had participated in ceremonial activities connected with whaling since the 1999 hunt.

TABLE 3-34. NUMBERS AND PERCENTAGE OF PARTICIPANTS IN THE 1999 MAKAH WHALE HUNT

ACTIVITY ASSOCIATED WITH 1999 HUNT	NUMBERS/PERCENTAGE OF PARTICIPANTS
Members of Whaling Commission	23 Makah men representing "all major families"
Preparation of equipment, including canoe	2 Makah men, plus Nuu-chah-nulth mentors who built canoe, and 20 to 25 people making equipment
Training for hunt crew	18 to 20 Makah men
Whale hunt crew	1 canoe (1 head harpooner, 7 men) and 1 chase boat (5 people), all Makah
Towing crew	5 canoes (main canoe and 4 support canoes) and 1 fishing boat; about 60 people, 4 canoes from supporting Northwest tribes
Attendance on beach	1,400 people, mostly Makahs
Butchering	100 people, mostly Makahs
Distribution crew	50 Makahs
Consumption of meat/oil	81% of household whaling survey respondents
Attendance at post-hunt community feast	95% of household whaling survey respondents; "Thousands of other friends and relatives joined our tribe." Approximately 3,000 people total
Attendance at parade	79% of household whaling survey respondents; about 400 people total
Participation in post-hunt ceremonials	38% of household whaling survey respondents
Use of bones	Approximately 60 school children, mostly Makah
Use of baleen	8 Makah hunters

Source: Bowechop 2004 (413), 2005a.

Considering that 43 percent of the respondents also stated that the hunt fostered Makah and intertribal unity, the hunt appeared to be a means of bolstering social accord within the community and provided some positive support for the physical and mental health of the Makah Tribe.

The hunt also provided the opportunity for the revival of Makah whaling rituals and traditional knowledge after a 70-year hiatus (Braund et al. 2007). Hunters reported that the spiritual and physical training, the new-found whaling knowledge and skills gained from the experience, and the activation of inherited whaling customs and attitudes from older Makah members (obtained orally and through the ethnographic collaboration of previous generations) strengthened tribal member identity as descendants of Makah whalers (Tweedie 2002). Whaling songs and rituals also resumed following the 1999 hunt, with more people participating in family songs and sharing traditional knowledge (Braund et al. 2007).

Reintroduction of whaling activities also facilitated a specific vocabulary, now mostly in English, but some in the Makah language, that encapsulates context-based traditional ecological knowledge that once was widespread in the community (Bowechop 2005a). Without engaging in

the hunt, this knowledge lay dormant in the memories of the elders in a few families and in the ethnographic accounts of previous generations. Bowechop (2005a) reports a gradual increase in the attendance of language and cultural classes, with the highest attendance corresponding with the resumption of the whale hunt.

The whale hunt provided new experience-based educational opportunities that went beyond the current efforts of the Makah Cultural and Research Center to recover the language, crafts, and Makah ecological concepts that Sepez (2001) explains are offered in schools and at summer camps and underlie and sustain the elders' ecological teachings. The quest for knowledge relating to the ancient activity of whaling reached beyond the whaling crew and community children, for the majority of respondents in the Makah household whaling survey reported a desire to learn more about preparing whale products and using whalebone. They expressed a willingness to share such information with other Makah Tribe members (Renker 2002). Seventy-six percent of Makah households expressed a desire for whale bones, presumably to revitalize certain crafts. The Makah Tribal Council, however, decided to offer the 1999 whale hunt bones to the local school for a bone preservation project. Instructors taught Makah students how to clean skeletal remains and reassemble the whale skeleton for museum display. Early in December 2005, with the reconstruction completed, the whale skeleton was hung in the Makah Cultural and Research Center. Approximately 60 students participated in this project (Bowechop 2005a).

Participation in the 1999 hunt also allowed residents to experience a connection to the past that would not otherwise have been possible (Braund et al. 2007). The connection to their whaling ancestors and to the physical environment also renews Makah cultural and historical identity as whalers (Braund et al. 2007). Renker (2007), discussing the importance of ceremonial activities and practices related to the whale hunt in enhancing the spirituality of Makah Tribe members, wrote "…MWC [Makah Whaling Commission] members share the opinion that the ceremonies which must occur before a hunt, and the clean/sober lifestyle that hunters and their families must have, are a critical part of the Makah Tribe's spiritual profile." She also referred to the Makah whale hunt as "a manifestation of the spiritual connection between Makahs and their Creator." Renker (2007) later suggested that because the activity of whaling is so closely linked with physical, spiritual, and ceremonial obligations, the lack of whaling, especially after already being reintroduced to Makah people in recent years, is harmful to the spirituality of the Makah Tribe. Renker (2007) wrote the following:

> Additional whale hunts bring important ceremonial obligations, because spiritual preparation is an obligation of the whaling crew members and their respective family

> members. Now that almost half of the Makah Tribe's members participate in ancient religious ceremonies, the lack of an active hunt makes it impossible for certain spiritual rituals to be performed. A spiritual void of this nature is devastating for Tribal members, and the connection between unhealthy social behaviors and the inability to practice traditional rituals is common in the writings of noted American Indian authors (Deloria 1973, Josephy 1982).

Renker's tribal survey found that 81 percent of the respondents consumed whale products (blubber, meat, or oil) obtained from the 1999 hunt, although 87 percent would like to have these products available in the future (Renker 2002). Sepez (2001) also quantified the consumption of whale products obtained from the whale taken during the 1999 hunt. The whale provided roughly 2,000 to 3,000 pounds of meat and 4,000 to 5,000 pounds of blubber, most of which was consumed at the community potlatch. Community households received approximately 1.8 pounds per capita distribution of blubber. Together with the estimated 0.55 pound of meat, Sepez calculated that the whale products consumed in 1999 equaled about 2.4 pounds per capita.

Members of other tribes attended the community's celebrations in 1999 witnessing the proceedings and sharing food – necessary components of traditional ceremonials by which a group establishes its status with other groups. When the Makah Tribal Council hosted the community potlatch after the 1999 hunt, the individual whalers received public recognition for their proficiency and commitment, and the Makah, as a tribal group, reaffirmed itself as people of wealth and history who maintain a relationship with the resources of their territory (Bowechop 2004). Within the cultural framework of the Makah people, no other activity besides the whale hunt and community feast is considered to embody such powerful metaphoric expression. Symbols are made meaningful through experience and action, and the whale is the Makah Tribe's symbol for cultural pride and independence. The Makah Tribe regarded the hunt as a means to revitalize and transfer its cultural knowledge associated with the activity.

The resumption of the hunt also provided the Makah Tribe with an opportunity to highlight the relationship with the related Nuu-chah-nulth people of British Columbia, Canada. Both engaged in hunting whales and practiced highly complex rituals believed to ensure the success of the hunt. Makah whalers traveled to Vancouver Island for several weeks before participating in the 1999 hunt to learn whaling techniques and traditions from knowledgeable Canadian elders. Some tribal members from Alaska and British Columbia attended the Makah Tribe's celebration of the 1999 kill (Braund et al. 2007).

In 2006, six years after the last attempt by Makah whalers to hunt whales, the Makah Tribal Council commissioned a second whaling survey to gather information about residents' attitudes

toward participation in whaling, including the actual hunt, ceremonial activities, and consumption and use of whale products. The 2006 survey was designed to follow the same methods used during the 2001 survey. The results of this survey are discussed in the Tribe's 2007 needs statement (Renker 2007).

Support for Makah whaling remained high in 2006, with 88.8 percent of respondents indicating that they supported the continuation of the Makah Tribe's efforts to hunt whales (Renker 2007). This percentage had decreased slightly since 2001, when 95.6 percent of respondents voiced support for the whaling efforts. However, the percentage of respondents opposing the effort to hunt whales increased by less than one percentage point, to 4.0 percent. The remaining respondents were unsure about whether whaling efforts should continue, citing reasons such as financial burdens on the village due to legal efforts, concerns about "racial animosity" which rose during and following the 1999 and 2000 hunts, and the effect of whaling efforts on fishing quotas and treaties.

Most respondents who supported whaling viewed the whaling efforts as being positive for the Makah Tribe (Renker 2007). They attributed the whaling efforts with helping to restore or maintain heritage and ceremonies, as well as increasing tribal unity and encouraging healthy living among youth.

A high percentage of respondents (80.3 percent) continued to desire whale products for consumption or use. Respondents also expressed interest in learning more about the butchering, processing and use of whale products (Renker 2007.).

One area in which positive responses increased significantly from 2001 to 2006 was in regards to participation in ceremonial activities (Renker 2007). The percentage of respondents participating in ceremonial activities rose from 25.8 percent in 2001 to 41.5 percent in 2006. Regarding this outcome Dr. Renker stated the following:

> The HWS II (Household Whaling Survey II) attests that the ceremonial aspects of the Makah whale hunt are once again becoming a standard part of the life of a majority of Tribal members, even when the Tribe is prevented from hunting because of outside legal struggles (Renker 2007,53)

3.10.3.5.2 Makah Subsistence Consumption

An overview and analysis of contemporary Makah subsistence foraging, focusing on hunting, fishing, and shellfish collecting, indicated that the Makah people continue to rely on their U&A resource harvesting areas for a significant portion of their diet (Sepez 2001). The survey documented the use of approximately 80 species, with most of the diversity concentrated in the

marine resources. While the author of the study was reluctant to rank the resources in terms of importance ─ largely due to the inability of statistics to discern nonquantifiable qualities of resources that make them important ─ harvesting and consumption patterns did emerge from the data.

Using household surveys from a randomly selected sample as the basis for her analysis, Sepez (2001) found that 99 percent of the households indicated some type of consuming of local resources for subsistence purposes during the study period. Fully 71 percent of households engaged in harvesting resources, while 94 percent received resources harvested by another household, indicating that sharing resources was a common practice among tribal members. Table 3-35 presents the percent of households using local resources obtained directly or through exchange during the 1997 and 1998 study period.

TABLE 3-35. PERCENTAGE OF HOUSEHOLDS USING LOCAL RESOURCES DURING 1997 TO 1998

FOOD RESOURCE	PERCENTAGE OF HOUSEHOLDS (%)
Halibut, salmon, clams, crab	76 – 100
Mussels, deer, elk, goosenecks, seal, salmon eggs, barnacles	51 – 75
Steelhead, lingcod, olive shells, chitons, octopus, rockfish, smelt, blackcod, herring eggs, grouse	26 – 50
Urchins, lingcod eggs, local cow, petrale sole, trout, tuna, bear, scallop, oysters, sole/flatfish, sea cucumber, squid, sturgeon, true cod, shrimp, rabbits, abalone, duck, pigeon, skate, sea lion, small gastropods, wolf eel	1 – 25
Goose, porpoise, sea anemone, sea otter, sea turtle, shark, whale[1]	

Source: Sepez (2001).

[1] Resources currently used, but not included in the survey

Table 3-35 represents reported local use of the resource. The survey found that the widest range of households uses marine resources. Further analysis indicated that fish accounted for 55 percent of meat and seafoods in the Makah diet, a figure that highlights the cultural significance of marine resources when compared to the average 7 percent of meat and seafoods that occupy the diet of other Americans (Sepez 2001).

Sepez (2001) concluded in her study of Makah subsistence that the tribal members' preference for fish and other resources produced through subsistence channels was specific to the type of food being chosen, but that several social and economic factors influenced the role of subsistence in the contemporary tribal lifestyle:

- Perception of subsistence foods as free for the taking
- Link with cultural identity
- Perception that seafoods taken from other places are unclean or mistreated
- Pleasure in undertaking subsistence activities
- Sense of connection to the local environment and to those who used the resource in the past

Makah members articulated similar statements when asked about their desire for whale products (Renker 2002). No food is more symbolic of the traditional Makah culture than whale, for its consumption serves as a metaphoric reminder of the wealth, history, and social structure of the community (Braund et al. 2007).

The Tribe's 2007 needs statement provides a detailed account of current health issues present within the Makah's and other American Indians' communities and discusses the potential nutritional benefits of consuming whale products, suggesting that a return to eating whale could lead to better overall health of Makah Tribe members, both physically and spiritually (Renker 2007).

Sharing food in contemporary Makah society, Sepez (2001) observes, is "an accepted and expected aspect of subsistence" and recognizes a traditional obligation for generosity, particularly extended to those in need. Within a complex system of reciprocity and redistribution, sharing bolsters one's status within the community and serves to enact one's tribal identity. Table 3-36 charts the percentage of Makah harvesters who shared part of their gains during the 1997 to 1998 study year. Seal meat and oil emerged as the resources most likely to be distributed during the time of the survey, with all hunters of seal reporting distribution of the meat or rendered oil. Sepez (2001) notes that the resource column lists items in descending order of percent of harvesters giving some portion away.

TABLE 3-36. PERCENTAGE OF HARVESTERS OF EACH RESOURCE WHO GAVE AWAY SOME PORTION, 1997-1998

RESOURCE	PERCENTAGE OF HARVESTERS (%)
Seal	100
Halibut, black cod, smelt, octopus, clams, salmon, gooseneck barnacles, fish eggs	99 – 67
Crab, elk, mussels, deer, steelhead, scallops, chitons, ling cod	66 – 34
Olive shells, barnacles, rockfish, grouse, urchins	33 – 1
Trout	0

Source: Sepez (2001).

3.10.3.5.3 Symbolic Expression of Whaling

In both traditional and contemporary Makah society, depictions of the whale and the whale hunt are very meaningful. These symbols were once used only on the property of elite members of Makah or Nuu-chah-nulth society and, therefore, appeared on items such as dance screens or curtains narrated visually with images celebrating the lineage's history, memorial posts to commemorate a chief's greatness, twined whalers' hats decorated with motifs of whaling scenes, wooden images used in ceremonials, and small personal amulets or charms imbued with spiritual power (Black 1999). Chiefs have also tattooed whales upon their chest (Koppert 1930). The traditional view is focused primarily on the relationship between humans and whales, the transformation of the whale into wealth, and the physical features underpinning the metaphors of strength, courage, and generosity.

Ethnomusicologist Frances Densmore photographed a dance curtain containing the large image of a thunderbird carrying a whale, along with other images, hanging in front of one of the walls of the Neah Bay community hall where dances were performed for Makah Days in 1926 (Densmore 1939). James Swan, a New England pioneer who lived among the Makah in the 1860s, was impressed by a painting of a thunderbird on a chief's house at Neah Bay. He recorded the Makah Indians' description of thunderbird as a supernatural giant who killed whales with lightning fish tied around his waist, then carried them back to the mountains to eat (Quimby 1970). According to Janine Bowechop, current Executive Director of the Makah Cultural Research Center, a commonly held Makah belief is that during a time of starvation, Thunderbird brought a whale to the Makah people to eat, then showed them how to hunt whales.

The symbolic use of whales within contemporary Makah society continues to be important. As Renker (2007) wrote:

> Whales are everywhere on the reservation. They are the dominant art icon in Neah Bay and adorn T-shirts, jackets, jewelry, signage, and a good deal of the public art in the village, including images inside and outside the public school, as well as the Tribe's buildings. Makah children "doodle" whale images on their school papers and folders, and create serious artwork with whales, thunderbirds, and wolf masks for local art contests.

Statements made by Makah participants after the 1999 hunt suggest that the contemporary whalers' association with the whale retains some of the qualities described in the ethnographic literature (Tweedie 2002), but the symbolic use of whales and whaling has extended beyond an association of a chief with his wealth to that of the community as a whole. Symbols of this traditional discourse that were rooted in the practice and experience of the elite now inform the

contemporary model of tribal self-sufficiency. The cessation of the whale hunt and its associated privately owned rituals and ceremonials, along with changes in the traditional Makah social organization, resulted in lessening the direct relationship between the whale and the whalers. Subsequent emergence of the whale as a secular image nevertheless represented the loss of a former way of life, one in which physical and mental strength brought glory and wealth to the chiefs and, thus, to the community at large. Whale hunting in the current discourse possesses symbolic properties and qualities that make it a potent vehicle for the strength of Makah identity, sovereignty, and cultural revitalization. Hence, resumption of the hunt, as Janine Bowechop (2004:412) concluded in her essay, *Contemporary Makah Whaling*, was necessary to help her people become healthier and stronger and to close the gap between the past and the present.

3.11 Noise

3.11.1 Introduction

The following section documents noise-related issues pertaining to the proposed Makah whale hunts. Included are discussions of relevant noise-related policies and jurisdictions, sensitive noise receptors in the human environment, and background noise conditions near the project area. Key parameters for analysis include ambient noise levels in the project area and the distance between sensitive receptors and noise-producing project activities. See Section 3.5.3.3, Sensitivity of Wildlife to Noise and Other Disturbance, for a discussion of the potential for disturbance to wildlife and key wildlife use areas, such as seabird rookeries and haulouts for marine mammals.

Noise is generally defined as unwanted sound (EPA 1971). Sound level is expressed in units called decibels (dB). The dB scale quantifies sound levels relative to a reference point of 0 dB, which is defined as the threshold of human hearing and is roughly equivalent to the sound of a mosquito flying 10 feet away. To account for the large range of sound pressures the ear can detect, the dB scale is logarithmic. A 10-dB increase in sound level is perceived as a doubling of loudness. The ear is not equally sensitive to sound at all frequencies or musical pitches; two sounds of equal intensity (i.e., with equal dB values) may be perceived as having different loudness levels if they have different frequencies. Very high-pitched whistles demonstrate the relative sensitivity of the human ear (as compared to the ears of other species) at certain frequencies; dogs readily hear these sounds, but they are nearly inaudible to humans.

Sound frequency is measured in terms of cycles per second, or hertz (Hz). The human ear is most sensitive to sounds in the frequency range of 1,000 to 5,000 Hz. To account for this sensitivity, a process called frequency weighting is often used in sound descriptions. The most widely used

system is A-weighting, in which noise in the frequencies of maximum human sensitivity factors more heavily than other frequencies in determining the overall noise level. Decibel values in this system are commonly denoted as dBA. Most noise regulations use the A-weighted scale to define acceptable limits for noise levels. See Section 3.5.3.3.4, Marine Mammals and Underwater Noise, for a discussion of the frequencies at which the ears of marine mammals are most sensitive.

3.11.2 Regulatory Overview

The OCNMS management plan provides no specific direction regarding noise (NOAA 1993). Control of noise is, however, consistent with Sanctuary goals of resource protection and compatible public use. Regulations governing OCNMS prohibit the operation of motorized aircraft less than 2,000 feet above the Sanctuary and within one nautical mile of the shoreline. In addition, FWS recommends a 200-yard exclusionary zone around islands in the Washington Island National Wildlife Refuges to avoid the flushing of nesting seabirds by boat and other vessel traffic.

The Olympic National Park, under federal jurisdiction, is managed consistent with enabling federal legislation to ". . . conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (National Park Service Organic Act, 16 USC 1). The control of noise by park authorities is relevant to leaving the natural and cultural resources and values of the park unimpaired. Noise control is particularly germane in portions of the park designated as wilderness; this includes the park area along the Pacific Ocean coastline. Specific regulations prohibit the operation of "motorized equipment or machinery in a manner that exceeds a noise level of 60 decibels measured on the A-weighted scale at 50 feet; or, if below that level, makes noise which is unreasonable, considering the nature and purpose for which the area was established" (36 CFR 2.12). The Wilderness Act does not establish noise regulations, but it implies that noise should be minimized in designated Wilderness areas to achieve "outstanding opportunities for solitude" (Public Law 88-577).

State of Washington noise regulations in WAC 173-60-040 are in effect statewide. Clallam County has no separate noise regulations and is subject to state standards. Maximum permissible environmental noise levels vary, depending on the land use categories of the noise source and the receiving property. Maximum permissible noise levels range from 55 to 60 dBA for residential properties, 57 to 65 dBA for commercial uses, and 60 to 70 dBA for industrial areas.

WAC 173-60-050 specifies exemptions from maximum permissible noise levels in certain cases, including the following:

- Sounds created by the discharge of firearms on authorized shooting ranges [Exemption applies only from 7:00 a.m. to 10:00 p.m.]
- Sounds originating from forest harvesting and silvicultural activity [Exemption does not apply near residential and recreational areas from 10:00 p.m. to 7:00 a.m.]
- Sounds originating from aircraft in flight
- Sounds created by emergency equipment and work necessary in the interests of law enforcement or for health safety or welfare of the community
- Sounds created by safety and protective devices where noise suppression would defeat the intent of the device or is not economically feasible
- Sounds created by the discharge of firearms in the course of hunting

3.11.3 Existing Conditions

The following sections identify sensitive noise receptors in the project area, followed by a discussion of existing noise levels in the two media of noise transmission (air and water) in the project area. The discussion in this section focuses on sensitive noise receptors in the human environment. The sensitivity of wildlife to noise and other disturbance is discussed in Section 3.5.3.3.

3.11.3.1 Sensitive Noise Receptors in the Human Environment

Sensitive noise receptors include facilities and activities for which excessive noise may cause annoyance, increased stress, loss of business, or other adverse effects. Examples of sensitive receptors include residential areas, hospitals, schools, performance spaces, and businesses. Open space is also noise-sensitive if excessive noise would adversely affect potential recreational use of the space. Nearly all portions of the project area sustain residential or recreational uses, with maximum permissible noise levels between 55 and 60 dBA. Businesses in Neah Bay and the offices of the Makah Tribal Center meet the criteria of commercial property, while timber harvest areas would be considered industrial sites.

3.11.3.1.1 Olympic Coast National Marine Sanctuary

Staff at OCNMS have identified noise as a management issue for the Sanctuary, particularly with regard to disturbance of humans and wildlife (Parrish et al. 2005). Noise associated with aircraft overflights has been identified as a primary concern, but the extent of overflights within the Sanctuary is not known. It is also unclear whether, or how much, disturbance to Sanctuary-

protected wildlife results from overflights (Parrish et al. 2005). OCNMS staff report that overflights occur primarily during the summer and that visitor complaints are rare (Parrish et al. 2005).

3.11.3.1.2 Makah Reservation

Sensitive noise receptors on the reservation occur primarily along trails and shoreline areas used for recreation by residents and tourists. Cape Flattery is a Makah Tribe designated wilderness area. South of Cape Flattery, the Pacific coastline is largely wooded; some inland areas are managed for timber harvest. There is little or no human settlement north of Wa'atch Point. The Makah Tribal Center on the north side of the Wa'atch River supports residential, administrative, and commercial uses. Areas farther south include low-density residential development, with several roads near the shoreline. South of Anderson Point to the Olympic National Park boundary, the shoreline is characterized by rocky bluffs and small pocket beaches. Primitive roads and trails provide recreational access.

3.11.3.1.3 Olympic National Park

Within the Olympic National Park, the shoreline is a designated wilderness area accessible only by foot. In most portions of this area, the total number of users is restricted by a wilderness permit system. A trail and boardwalk connect the parking area at Lake Ozette to the shoreline at Cape Alava and Sand Point. The number of visitors to this area is restricted only by the capacity of the parking lot. Because the coastal shoreline portion of the park is a designated wilderness area, this entire area of the park is a sensitive noise receptor.

3.11.3.2 Existing Noise Levels

The following sections describe the baseline conditions of the acoustic environment in the project area, including atmospheric and underwater noise. Particular attention is given to sources of noise associated with a whale hunt, namely, aircraft (e.g., news helicopters and other aircraft observing the hunt and associated activities), and vessel traffic. Section 3.5.3.3, Sensitivity of Wildlife to Noise and Other Disturbance, addresses existing levels of noise and disturbance at marine mammal haulouts and seabird colonies in the project area. Where available, information from the previous hunts is included to provide a background for subsequent analysis of the potential effects of the alternatives.

3.11.3.2.1 Atmospheric Noise

The primary sources of ambient sound in the area are natural, mostly wind and waves. Natural quiet found in wilderness recreation areas is characterized by the absence of human-made noise,

which creates conditions that allow visitors to enjoy the intermittent sounds of animals, wind, water, and other natural sources.

In addition to natural sounds, human activities are a source of noise in the project area. Near Cape Flattery, people hear the Tatoosh Island foghorn. The acoustic environment in the area of the Makah Tribal Center is likely characteristic of residential and small town centers, with ambient noise levels ranging from 50 to 65 dBA. Settings where people congregate, such as commercial areas, school playgrounds, and sports fields, are additional local sources of noise. Throughout the area, the most pervasive noise source is traffic on local roads. Noise from individual automobiles and trucks can range from 70 to 90 dBA. Sirens of emergency vehicles are likely the loudest noise source; they produce noise at approximately 130 dBA at 100 feet. The occurrence of such noise is infrequent, irregular, and primarily affects areas next to arterial roads. Noise sources associated with active logging operations include chain saws (110 dBA) and other equipment (80 to 110 dBA). Most timber harvest units associated with the Makah logging operations are located away from residences to avoid noise impacts. However, the Makah Forest Management Plan (Makah Tribe 1999) does not mention noise as an issue to be addressed during logging operations.

Another source of noise in the area is airplane traffic, particularly near the three airports in western Clallam County (Section 3.13.3.3, Air Traffic). The most heavily used airport in the area is the Forks Municipal Airport, which receives an average of approximately 40 operations every day (Washington Department of Transportation 2002a). Noise from aircraft taking off and landing is unlikely to be a major issue in the U&A, however, because the airport is more than 15 miles away from the southern extreme of the U&A. The Quillayute Airport, which has less than 10 takeoffs and landings per week, on average, is approximately 9 miles away from the southern extreme of the U&A. The Sekiu Airport, which has approximately 20 takeoffs and landings per week, is immediately adjacent to the portion of the U&A within the Strait of Juan de Fuca and approximately 20 miles from the Pacific Ocean portion of the U&A.

In their study of overflights in west coast National Marine Sanctuaries, Parrish et al. (2005) gathered information about small, private, general aviation airplanes and helicopters. Such aircraft, typically flown by private pilots for sightseeing purposes, have the potential to disturb humans and wildlife by flying low over Sanctuary waters (Parrish et al. 2005). Other types of aircraft that may occur in the area include regularly scheduled tourist flights, such as those provided by National Park tour concessionaires, and Sanctuary-permitted or Sanctuary-owned

research flights. Military and Coast Guard flights also occur over the area (Parrish et al. 2005). During field studies at Tatoosh Island in the summer months (June, July, and August) of 1997 through 2003, researchers from the University of Washington documented 106 instances in which aircraft violated overflight regulations by flying below 2,000 feet within 1 mile of shore in the Sanctuary. The frequency with which violations occurred ranged from approximately 0.1 to 0.75 per hour (Galasso 2005).

During the previous whale hunts, media helicopters and other aircraft likely created elevated noise levels. The Coast Guard used helicopters to enforce the exclusion zone around tribal vessels actively engaged in the hunt (Section 3.14.3.1, Coast Guard). During the successful hunt, three television news helicopters were present throughout the day (United States Coast Guard 1999a). No information is available to document noise levels associated with those sources. OCNMS regulations that require motorized aircraft to fly at least 2,000 feet above certain portions of the Sanctuary probably limited the effects of aircraft noise on residents and recreational users near the hunt. Only one instance of an aircraft failing to observe these regulations was reported during the previous hunts (Section 3.13.3.3, Air Traffic).

Other noise sources associated with the previous hunt included marine vessels used by the whale hunters, protesters, and law enforcement personnel (Section 3.13.3.2.3, Marine Traffic During the Previous Hunt). Most hunt-related activities took place well offshore, and vessel noise was likely inaudible to sensitive receptors in Olympic National Park and OCNMS. To avoid disturbance to resting and breeding birds and marine mammals, the Makah gray whale management plan prohibited the initial strike of a whale within 200 yards of Tatoosh Island or White Rock between May and September. All three strike attempts occurred 1 to 2 miles offshore (NMFS 1999). Increased vessel traffic was likely audible to local residents near the marina and Coast Guard station at Neah Bay and at Clallam Bay, where most protest vessels moored.

3.11.3.2.2 Marine Noise

Marine environments can be noisy. Natural noise sources include wind, waves, precipitation, earthquakes, lightning strikes, and surf. Biological sounds include whale songs, dolphin clicks, fish vocalizations, and the clicking of crustaceans (Urick 1983; National Research Council 2003). Noise sources associated with human activities include commercial shipping, geophysical surveys, oil drilling and production, dredging and construction, sonar systems, and oceanographic research (National Research Council 2003).

Open ocean ambient noise levels estimated from sound data collected in portions of the South Pacific with relatively low levels of human activity suggest that low-frequency sound levels range from 40 to 50 dB (relative to 1 microPascal at 1 meter[9]) in calm seas (Cato and McCauley 2002; National Research Council 2003). In areas of the Pacific Ocean where commercial shipping is more prevalent, measured ambient sound levels have ranged between 80 and 90 dB (Andrew et al. 2002; McDonald et al. 2006). A variety of natural processes increases these levels: precipitation on the ocean surface contributes sound levels up to 35 dB across a broad range of frequencies (Nystuen and Farmer 1987); an increase in wind speed from 5 to 10 knots causes a 5-dB increase in ambient ocean noise across most frequencies. The highest dB noise levels generally occur in nearshore areas where the sound of surf can increase underwater noise levels by more than 20 dB a few hundred meters outside the surf zone across a frequency band from 10 to 10,000 Hz (Wilson et al. 1985; National Research Council 2003).

Among noise sources associated with human activity, surface shipping is widely considered the most widespread source of low-frequency (5 to 1,000 Hz) noise in the oceans (Wenz 1962; Simmonds and Hutchinson 1996; National Research Council 2003). Although there are no data that provide an assessment of long-term trends in ocean noise, increases in commercial shipping during the past 50 years imply a gradual increase in noise levels from shipping traffic. This relationship is complicated, however, by technology changes that have resulted in quieter ships during the same period (National Research Council 2003). Puget Sound experiences a concentration of commercial shipping in and out of United States ports, with the ports of Seattle and Tacoma collectively representing 9 percent of 20-foot-equivalent container traffic in 2003 (United States Army Corps of Engineers 2004). The OCNMS has designated a large portion of the project area as an area to be avoided. Under this voluntary ship traffic management program, vessels are advised to stay clear of this area if they carry cargoes of oil or hazardous materials or if they exceed 1,600 gross tons (Section 3.1.1.1.3, Current Issues, Area to be Avoided, for more information).

[9] Relative sound intensities (i.e., decibel values) in water are not directly comparable to relative sound intensities in air. This is primarily because the reference intensities used to compute sound intensity are different in water and air. A standard reference intensity must always be used when comparing relative intensities to one another. For underwater sound, the intensity of a sound wave with a pressure of 1 microPascal at 1 meter from the source point is used as the reference intensity. In air, however, the reference intensity is 20 microPascals at 1 meter.

Owing to the physics of underwater sound propagation, small vessels do not contribute substantially to ocean ambient noise on a global scale, but they may be important local sound sources in coastal areas. In 2000, approximately 210,000 motor boats were licensed in Washington State (Washington Interagency Committee for Outdoor Recreation 2002), with the majority likely operating near heavily populated areas surrounding Puget Sound. The National Research Council (2003) lists scientific vessels operating in a given area for days with stops and starts driven by data collection needs as a source of 160 to 190 dB. Received sound levels for whale-watching boats measured at approximately 91 meters ranged up to 127 dB across a broad band of frequencies (315 to 2,500 Hz) (Au and Green 2000). Erbe (2002) documented increased sound levels for high-speed operation. Small powerboats may have peak sound intensities of 145 to 150 dB in the 350 to 1,200 Hz band (Barlett and Wilson 2002). Fishing vessels also have moderate sound levels. According to Figure 3-12, vessel traffic associated with commercial and recreational fishing is heaviest and, therefore, probably loudest, from May to August in the project area.

3.12 Aesthetics

3.12.1 Introduction

This section discusses aesthetics as visual resources associated with the project area, a place where the Pacific Ocean, beaches, rocky tidepools and headlands, and adjacent forested wilderness meet. In the designation documentation for the OCNMS, Congress described the area as "one of the more dramatic natural wonders of the coastal United States, paralleling the majestic splendor of such terrestrial counterparts as Yosemite National Park and the Grand Tetons," (50 FR 24586, 24604, May 11, 1994). Key visual resources in the project area include natural landscapes and seascapes, wildlife, and tangible cultural resources and historic artifacts.

Peoples' opportunities to view past and proposed Makah whale-hunting activities in the project area are described by detailing access points where hunting and landing of a whale might be seen. Annual numbers of visitors and primary seasons of viewing are also described. Because whale hunts would take place offshore, and because the Makah practice exercises in 1998 and hunts in 1999 and 2000 were highly covered and televised events, most opportunities for viewing the hunt and hunt-related activities would occur through the media, including newspapers and television. For this reason, this section also describes media coverage of the previous hunts, along with public response to that coverage.

3.12.2 Regulatory Overview

As noted in Section 3.1, Geographically Based Management in the Project Area, several federal and tribal managed areas occur and overlap within the project area. These include the Olympic Coast National Marine Sanctuary, the Washington Islands National Wildlife Refuges, the coastal strip of the Olympic National Park, and the Makah and Ozette Indian Reservations (Figure 1-1). Because of their proximity to the project area, these management areas provide possible vantage points to whaling activities under each of the alternatives. The laws and regulations governing the management of these areas include recognition of the importance of aesthetic resources. In some cases, specific policy or management documents expand upon the aesthetic qualities that lend importance or value to the managed areas.

The National Marine Sanctuary Act, and NOAA's implementing regulations under which the Olympic Coast National Marine Sanctuary is designated and managed, include aesthetic values as important to the sanctuary concept. Sanctuary resources are defined as "any living or nonliving resource that contributes to the conservation, recreational, ecological, historical, educational, cultural, archeological, scientific, or aesthetic value of the Sanctuary," (16 USC 1432(8), 50 CFR 922.3). Section 3.1.1.1, Olympic Coast National Marine Sanctuary, describes the multiple-use nature of the Sanctuary, NOAA's regulations establishing prohibitions on certain uses of the Sanctuary, and the biological and historic characteristics of the Sanctuary that give it particular value as identified by the OCNMS designation document. Aesthetic resources of the Sanctuary that give it particular value include its remoteness, its undeveloped character, and its marine life, as well as tangible, historical resources including Indian village sites, ancient canoe runs, petroglyphs, and Indian artifacts (59 FR 24586, 24604, May 11, 1994; NOAA 1993).

The National Park Service Organic Act, governing the management of all national parks including the Olympic National Park, states that the fundamental purpose of national parks is "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations" (16 USC 1). The National Park Service has not developed a visual resource policy or management system for public lands under its jurisdiction; however, the overriding management purpose in a park is preservation of all significant resources, including the scenery (National Park Service 1996). Both the National Park Service and Ecology manage the aesthetics of the shoreline under federally granted Coastal Zone Management Act authority. The Coastal Zone Management Act identifies beaches as aesthetic resources of the nation (16 USC 1451(b)). Washington State's Shoreline Management Act

establishes a program to coordinate the protection and development of the state's shoreline, preserving to the greatest extent possible the public's opportunity to enjoy the physical and aesthetic qualities of state natural shorelines (RCW 90.58.020). The Makah Tribe also has a coastal zone management plan for reservation shorelines.

Approximately 70 percent of Olympic National Park's coastal strip, including 36,000 acres mostly north of the Hoh River, is designated as wilderness (National Park Service 2008). Under the Wilderness Act of 1964 (Public Law 88-577), wilderness areas are managed for the "preservation of their wilderness character" for current and future generations of Americans (16 USC 1131). Both natural and cultural resources are contributing elements to the Olympic National Park Wilderness (National Park Service 2008). The principles applied to federal wilderness areas also apply to management of the Washington National Wildlife Refuges, which are all designated as wilderness areas, except for Destruction Island in the Quillayute Needles National Wildlife Refuge. Other protective regulations are described in Section 3.1.1.2, Washington Islands National Wildlife Refuges. Reservation lands along the shoreline around Cape Flattery are also designated wilderness.

Living marine resources within the project area, including but not limited to whales and other marine mammals, are also protected by federal and state statute and regulation as aesthetic resources. The Whaling Convention Act, for instance, includes the finding that whales are a unique marine resource of great aesthetic and scientific interest to mankind and notes that the protection and conservation of whales are of particular interest to citizens of the United States (16 USC 916 note, Public Law 96-60, Aug. 15, 1979). The MMPA also includes the congressional finding that "marine mammals have proven themselves to be resources of great international significance, aesthetic and recreational as well as economic" (16 USC 1361(6)).

3.12.3 Existing Conditions

The following sections describe the key visual resources in the project area, vantage points into the Makah U&A, and estimates of the number of visitors to these areas every year. Following the discussion of potential direct viewing opportunities is a summary of media coverage of previous hunts.

3.12.3.1 Visual Resources in the Project Area

The sea stacks, pillars, and islands that make up the Washington Islands National Wildlife Refuges within the Olympic Coast National Marine Sanctuary are a visual resource of statewide significance, representing the remote and rugged nature of the Olympic Peninsula's coastline

(FWS 2007). The islands rise out of the ocean in a variety of shapes and forms and are varying distances from the shoreline; formations in the foreground often appear as flat-topped cliffs rising out of the water, while formations in the background appear as clusters of often fog-shrouded stacks (FWS 2007). Many of the islands have vegetation, including small trees and shrubs, particularly the larger islands (such as Ozette Island). Other smaller islands have extensive steep grassy slopes or vegetated ledges (FWS 2007). The islands also provide views of hauled-out sea lions and harbor seals, migrating and feeding gray whales, minke whales, and sea otters, among other species (Section 3.5.3.1.2, Common Species off Washington Coast). Many species of seabirds are visible in the marine waters, off the coastal headlands and islands, and along the shore, including raptors, gulls, cormorants, common murres, petrels, auklets, and puffins, among others (Section 3.5.3.2.1, ESA-Listed Species, and Section 3.5.3.2.2, Non-Listed Marine Birds and Their Associated Habitats, for more information on marine birds that occur in the project area).

In the Olympic National Park, more than 650 archaeological sites document 10,000 years of human occupation, while historic sites reveal clues about the 200-year history of exploration, homesteading, and community development in the Pacific Northwest (National Park Service 2008). Maritime archaeological sites include stratified shell midden deposits and petroglyph sites and represent one of the Olympic National Park's most important and threatened classes of archaeological resources. Threats include coastal erosion and visitor use. Past mitigation at these areas has included excavation, bank stabilization, and revegetation (National Park Service 2008). Public education and interpretation, coupled with increased monitoring and ranger patrols, aims to curb the impacts of visitation and tidal debris on the coastal petroglyph sites, particularly at Wedding Rocks, a site on the beach near Cape Alava (National Park Service 2008).

3.12.3.2 Vantage Points and Viewing Opportunities

Visitors can view the portion of the Makah U&A in the Strait of Juan de Fuca from the land by vehicle at several locations along Highway 112, including the towns of Sekiu, Clallam Bay, and Neah Bay. In contrast, vehicle-based viewing opportunities for the Pacific coastal portion of the U&A are limited to a few sites on the Makah Reservation, mostly in the Sooes and Hobuck Beach area of Makah Bay. No roadways offer views of the southern portion of the Makah U&A. The La Push/Rialto Beach area is approximately 8 miles south of the Makah U&A. The only scenic driving opportunity along the coast of the Olympic Peninsula is an 8-mile stretch of United States Highway 101 in the Kalaloch area, which is more than 30 miles south of the Makah U&A (National Park Service 2008).

Most of the land-based viewing access in the project area is from hiking trails and beaches (where camping opportunities exist), including the Cape Flattery Trail and Hobuck and Sooes Beaches on the Makah Reservation. The Olympic National Park also provides hiking and backpacking access to 50 miles of beaches with views of the islands. The Ozette/Shi Shi portion of the Olympic National Park, including the Point of Arches, is the most visible and photographed place in the Olympic National Park coastal strip. Many visitors also access the beach for 2.9 miles of the 9-mile Cape Alava and Sand Point Trails on the Ozette Indian Reservation (National Park Service 2008).

Part of the Makah U&A is visible to OCNMS visitors. NOAA (2006) reports that more than 3 million people visit the north Washington coast every year, drawn by the beautiful scenery and the pristine wilderness, as well as opportunities to view wildlife and challenge themselves in a natural environment. Similarly, the Olympic National Park has attracted an average of 3.2 million recreation visitors a year since 1990, mostly from June through September and peaking in July and August (National Park Service 2008). Hiking and boating trips provide viewing opportunities to the Makah U&A.

In 2005 and 2006, the Makah interpreters hosted more than 15,000 visitors on the Cape Flattery Trail. They addressed coastal issues, Makah culture, and natural history within the area (NOAA 2006). In 2004, the Makah interpreter recorded an average of 169 visitors per day in July, 189 visitors per day in August, and 93 visitors per day for September. An estimated 5,000 to 7,000 people annually attend Makah Days in Neah Bay. This is a celebration of Makah identity and features a parade, street fair, canoe races, children's races, traditional dancing, a salmon bake, and fireworks (Tizon 1998a).

Previous authorized hunts in 1999 and 2000 occurred within the Makah U&A and OCNMS, along and adjacent to the coastal area of the Olympic National Park. Whale hunting activities were visible from Ozette Island, Cape Alava, and Sand Point to Father and Son Rock, the Point of the Arches, and Spike Rock near the Ozette Reservation and Shi Shi Beach (Gosho 1999) (Section 1.4.2, Summary of Recent Makah Whaling — 1998 through 2007, for more information about the locations of the 1999 hunt). People on trails and beach vantage points of the Olympic National Park may have viewed the hunts, including the May 17, 1999, killing of a gray whale. The possibility that some viewers were caught unaware is extremely unlikely because May is not a peak visitor month, the hunts were well-advertised in the media, and the weather conditions were poor (Gosho 1999) at least some of the time. People on the shores of Neah Bay on the

Makah Reservation could view the whale being towed to shore and flensed. These activities were also visible to protesters, enforcement personnel, and tribal members in vessels surrounding the hunts. Most of those viewing the whaling activities on the shore within the Makah Reservation were tribal members who supported the hunt and had favorable reactions. As reported by the *Seattle Times*, Makah Tribe members in Neah Bay considered the visual effects of the hunt as ". . . cause for celebration, a triumphant embrace of tradition and heritage, a culture's central symbol giving itself up for the kill" (Sorensen 1999).

During the May 1999 whale hunts, news reports indicate that vehicular access to State Route 112 paralleling the Strait of Juan de Fuca was blocked by protesters and tribal police for about 2.5 hours (Mapes and Solomon 1999a). Such blockages may have interrupted access to visual resources on the Olympic Peninsula. Traffic volumes on the land were otherwise normal (Section 3.13.3.1.2, Vehicle Traffic Patterns During the 1999 Hunt).

3.12.3.3 Media Coverage of Previous Authorized Hunts

The practice exercises, whale hunts, and associated protest activities that occurred in 1998, 1999, and 2000 were the focus of intensive media coverage in the region, including Seattle. In late summer and autumn of 1998, approximately 50 representatives of media organizations from all over the world arrived at Neah Bay to watch the Makah Tribe hunt whales (Mapes 1998a). Media coverage became an issue during the Makah Days celebration in August 1998, when its representatives crowded in front of tribal dancers, disrupting the formal welcoming ceremony (Clarridge 1998). From June 1998 to June 1999, whale-hunt-related news stories abounded in local newspapers. The *Seattle Post-Intelligencer* published 77 news items and three editorials on the topic during that period. The *Seattle Times* published 76 news items, 11 columnists' commentaries, and eight editorials during the same timeframe. Such intense attention was largely limited to the region, however. During the same period, the *New York Times* published 16 news items with the words 'Makah' and 'whale,' the *Los Angeles Times* published 13 related news items, and the *Washington Post* published three related news items.

Media coverage resumed when the Makah resumed hunting activities in April of 2000, but with less intensity than for prior hunts. Between April 1 and December 31, 2000, the *Seattle Post-Intelligencer* published 13 news items and one editorial about the hunt, protests and protesters, and associated legal actions. The *Seattle Times* published 15 news items and one editorial on hunt-related topics during the same period. As before, the hunt received considerably less attention outside of the Pacific Northwest. The *New York Times* published two hunt-related news

items from April through December of 2000, the *Los Angeles Times* published four, and the *Washington Post* published a single hunt-related news item.

News of the Makah Tribe's successful hunt on May 17, 1999, received attention in local print and broadcast media. Locally, the Seattle *Post-Intelligencer* printed five photographs showing the whale in the water or on the beach; the *Seattle Times* printed four photographs, and the *Peninsula Daily News* printed seven photographs. At least two local television stations, KING-TV and KOMO-TV, sent helicopters to collect video footage of the hunt and subsequent activities. KING, KOMO, and KIRO-TV all extended their morning news shows to cover the story of the successful hunt, which occurred shortly before 7 a.m. (Levesque 1999). KCPQ, which did not have a morning news show at that time, interrupted regular programming with occasional updates. Northwest Cable News network, a sister station of KING-TV, ran near-constant footage and commentary on May 17, and 10 hours of live broadcast of the previous day's unsuccessful hunt (Levesque 1999; McFadden 1999).

Nationwide, the story of the successful hunt received considerably less attention. Most newspapers simply published the Associated Press wire story. There was no international Web site coverage by well-known news sources such as the *London Times*, *Le Monde*, *Asahi Shimbun*, and the *Japan Times* (Barber 1999). The story was broadcast on nationwide television, however, accompanied by commentary by Peter Jennings, ABC Network, and Tom Brokaw, NBC Network. Some observers characterized the images of the dying and dead whale as brutal and suggested that footage of the whale killing would pose a public relations problem for the Makah Tribe (Sorensen 1999).

Local newspaper reader response to the hunt was substantial. The *Seattle Times* received nearly 500 letters on the topic during the latter half of May 1999, nearly one-third of the total number of letters received for that month (Anderson 1999). On the day following the successful hunt, the *Seattle Post-Intelligencer* received more than 50 e-mail messages and more than 100 telephone calls voicing opinions about the hunt (Barber 1999). The *Peninsula Daily News* also reported an unusually large volume of letters and devoted a special letters page to the topic on the Friday following the hunt (Brewer 1999). KING-TV reported that the issue generated three or four times the normal volume of phone calls and e-mail messages related to a news story (Levesque 1999).

The news director at KIRO-TV chose not to broadcast images of the actual killing of the whale because some viewers had said they did not want to see explicit footage (Levesque 1999). Nearly all public response focused on the issue of killing the whale. Only a few comments offered

reactions to images of the event, for example, "I can't believe you think most of the population in Western Washington is remotely interested in viewing the graphic video" (Levesque 1999).

The *Seattle Post-Intelligencer* published excerpts of some telephone and e-mail messages received in response to their coverage of the whale hunt (*Seattle Post-Intelligencer* 1999). While most responses expressed support for or protest against the hunt, some included reactions to published images. One commenter expressed disgust at the image of Makah whalers jumping on the carcass of the whale. Another stated that the hunt of a whale should not be broadcast on television. One letter to the editor read "tonight I refuse to watch any news program for fear I will see another replay of the Makah hunt" (*Seattle Post-Intelligencer* 1999).

Of more than 30 letters published in the *Peninsula Daily News* on Friday, May 21, two contained reactions to images of the hunt. One writer described the television footage as "the most disgusting sight" she had ever seen. Another expressed the opinion that the graphic coverage should prompt viewers to express their objections to their congressional representatives (*Peninsula Daily News* 1999).

A Google search indicated about 710 instances of media coverage in the 20 days following the September 8 unauthorized hunt, the majority in the first few days afterward. Media outlets all over the country reported the event, often using Associated Press information. Follow-up coverage included reports on the Tribe's apology and trip to Washington, DC. The *Los Angeles Times*, *Washington Post*, and *New York Times* each ran one or two stories. Most of the coverage emanated from western Washington media. Seattle TV stations provided live reports from Neah Bay for the first few days. The *Seattle Times* had the most extensive coverage, with Lynda Mapes writing several in-depth articles. The *Times* also asked for reader feedback; 93 comments with a wide range of views were posted in response. The *Seattle Post-Intelligencer* and Port Angeles *Peninsula Daily News* ran multiple stories about the kill and activities following it. Other regional media had less extensive coverage. As news interest waned, there were several editorials and opinion pieces published, also with a wide range of views expressed.

Some anti-whaling Websites that were active during the earlier authorized hunts are no longer in existence or are not current. The Humane Society of the United States., Whale Police, Sea Shepherd, and Animal Welfare Institute posted press releases on their Websites condemning the September 8 whale kill. The few blogs covering this issue linked to or extracted from various media reports on the Internet, with limited commentary. Views seemed to be about equal between

condemnations of the kill and of whale-hunting in general, and support for tribal rights and culture.

3.13 Transportation

3.13.1 Introduction

The following section documents several transportation-related issues pertaining to the Makah whale hunt. Transportation resources near Neah Bay include federal and state highways, marine vessels, and airports. Key parameters for analysis include the patterns of highway, marine vessel, and air traffic near Neah Bay.

3.13.2 Regulatory Overview

At the federal level, the Federal Highway Administration within the Department of Transportation is responsible for the management of the national highway system, which includes United States Highway 101 near Neah Bay (23 USC 101). The national highway system consists of interconnected urban and rural principal arterials and highways that serve major population centers, international border crossings, ports, airports, public transportation facilities, other intermodal transportation facilities, and major travel destinations; meet national defense requirements; and serve interstate and interregional travel (23 CFR 470A).

The Federal Highway Administration is responsible for stewardship and oversight of the federal-aid highway funds allocated to Washington State. The Washington State Department of Transportation is the state agency responsible for delivering these federal-aid funds. Under the Statewide Multi-Modal Transportation Plan (RCW 47.06), the Washington Department of Transportation is responsible for developing a statewide multi-modal transportation plan in conformance with federal requirements. The highway system includes both state and federal highways.

In the marine environment, the Washington State Department of Transportation has the responsibility to oversee the national transportation system, which includes the marine transportation system (49 USC 101). The Coast Guard is responsible for enforcement and administration of laws governing vessels, cargo, and passengers. The Coast Guard has established a permanent RNA along the northwestern Washington coast and in a portion of the entrance to the Strait of Juan de Fuca (33 CFR 165.1301). Within the RNA, a moving exclusionary zone restricts the movements of vessels near a Makah vessel that is actively engaged in a whale hunt. Coast Guard restrictions for marine vessels engaged in whale hunting activities are described in

greater detail in Section 3.1.1.3, Coast Guard Regulated Navigation Area, and Section 3.15.2.1, Vessel Safety Regulations and Authorities.

The International Maritime Organization has designated a formal area to be avoided for the OCNMS. Vessels advised to stay clear of this area include all ships and barges carrying cargoes of oil or hazardous materials and all ships 1,600 gross tons and larger (Section 3.1.1.1.3, Current Issues, Area to be Avoided, and Section 3.2.3.3, Spill Prevention).

Air traffic safety is the responsibility of the Federal Aviation Administration. In addition, regulations for the management of the OCNMS prohibit flying motorized aircraft less than 2,000 feet above certain portions of the Sanctuary (Section 3.1.1.1.2, Designation and Regulatory Overview [OCNMS]). These include all areas within 1 nautical mile of the coastal boundary of the sanctuary, as well as areas within 1 nautical mile of any of the islands that constitute the Flattery Rocks, Quillayute Needles, or Copalis NWRs (15 CFR 922.152). These prohibitions do not apply to activities in response to emergencies threatening life, property, or the environment, or those for valid law enforcement purposes.

3.13.3 Existing Conditions

3.13.3.1 Highway Vehicle Traffic

Primary access to the isolated community of Neah Bay is via State Route 112, a narrow, winding highway that parallels the Strait of Juan de Fuca through rolling, forested terrain. An alternative route is along the closest primary highway, United States Highway 101, to Sappho and then north on a separate highway (State Route 113) that ends at State Route 112 (Figure 3-2). In recognition of its outstanding scenic, recreational, and cultural qualities, State Route 112 has been designated as a national scenic byway by the United States Secretary of Transportation.

3.13.3.1.1 Typical Vehicle Traffic Volume Patterns

The Washington State Department of Transportation conducts traffic counts occasionally on State Route 112 at the boundary of the Makah Reservation. The most recent traffic counts were conducted in 2001 and 2004. Annual average daily traffic volumes at that location were 940 vehicles and 1,200 vehicles, respectively (Washington Department of Transportation 2005a).

The closest permanent, full-time automated data collection station is located on United States Highway 101, near the State Route 113 turnoff to Neah Bay. Data from this station provide an indication of highway traffic patterns and trends near Neah Bay. Daily traffic counts at that station vary with the day of the week, with Fridays typically 10 percent higher than average and Sundays 10 percent below average (Washington Department of Transportation 2005a). In addition,

traffic counts show a strong pattern of seasonal variability, with the highest daily averages occurring during the summer months and the lowest occurring in winter. Although actual values vary from year to year, the overall pattern remains consistent (Table 3-37, Figure 3-11).

Visitation data for the Cape Flattery Trail and the Makah Museum may serve as indirect indicators of the amount of vehicle traffic on the Makah Reservation. In 2004, a natural resource interpreter at the Cape Flattery Trail recorded visitor numbers in July, August, and September. The interpreter was present from roughly noon until 6:00 p.m.; visitors who arrived before and departed after the counting period were not counted, so these data represent an underestimate of actual visitation. Based on these data, the trail received an average of 169 visitors per day in July, 189 per day in August, and 93 per day in September (Bowechop 2005b). More than 60 percent of the annual visitors to the Makah Cultural and Research Center/Makah Museum arrive during June, July, and August (North Olympic Peninsula Visitor and Convention Bureau 2005c). Additional information about tourist visitation to the Makah Reservation can be found in Section 3.6.3.2.4, Contribution of Tourism to the Local Economy.

3.13.3.1.2 Vehicle Traffic Patterns During the 1999 Hunt

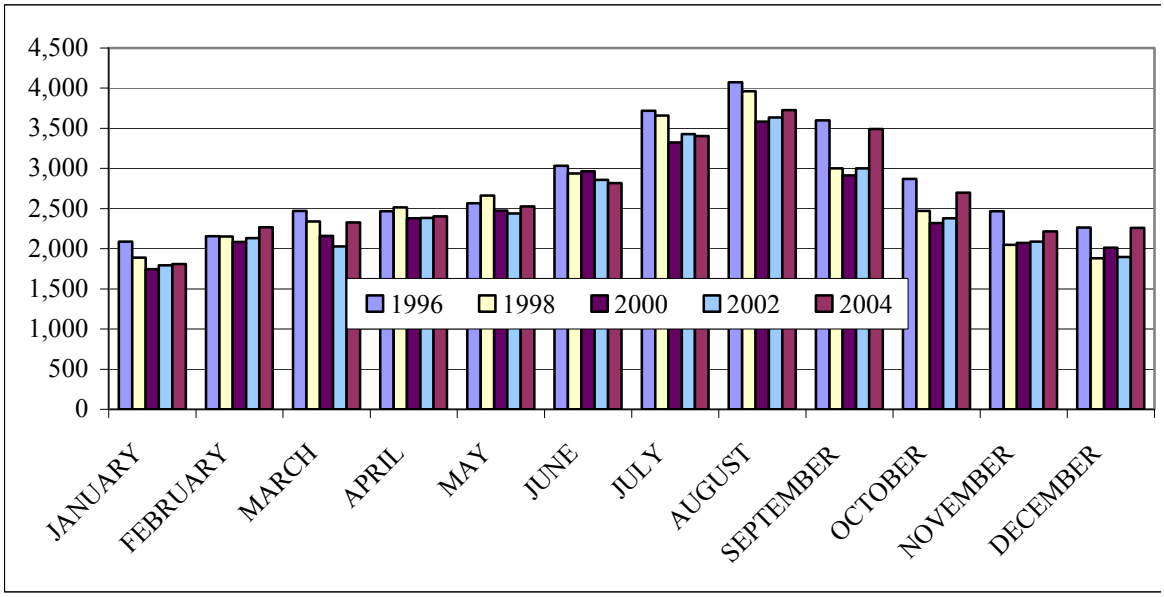
News accounts of the 1998-1999 whale hunts described one occasion on which highway traffic was affected by activities associated with the hunt. Two days before the successful hunt on May 17, 1999, traffic on State Route 112 was stopped for approximately 2.5 hours after the highway was blocked by protesters and tribal police (Mapes and Solomon 1999a). No other highway blockages are described in news accounts or law enforcement records from the previous hunt, although Coast Guard records mention the occurrence of weekly protests on State Route 112 at the Makah reservation boundary (United States Coast Guard 1999c). See Section 3.14.3.2, Police, for a discussion of traffic stops near Neah Bay.

Automated traffic count data Highway 101 for the month of May 1999 do not indicate any anomalous spikes in traffic volume during the days surrounding the events of May 17, 1999. Traffic volume data for that date, along with May 22, the date of the Tribe's celebration of the successful hunt, are denoted in bold font in Table 3-38. Two trends are evident in the data. First is a steady increase in traffic volumes throughout the month, peaking on Memorial Day weekend (May 31). Second is the weekly pattern described above, wherein Friday volumes typically exceed those on Sundays. This pattern is evident in the data from the months of May 1998, 1999, and 2000; Friday volumes typically exceed those of the subsequent Sunday by at least 15 percent (Washington Department of Transportation 2005b)

TABLE 3-37. AVERAGE WEEKDAY TRAFFIC COUNTS ON HIGHWAY 101 NEAR STATE ROUTE 113, 1995 TO 2004

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
January	1,987	2,088	2,153	1,889	2,064	1,746	1,993	1,793	1,865	1,809
February	2,052	2,158	2,417	2,152	1,972	2,084	2,047	2,133	2,117	2,266
March	2,587	2,472	2,286	2,338	2,323	2,159	2,236	2,030	2,097	2,329
April	2,715	2,466	2,365	2,516	2,245	2,380	2,289	2,383	2,282	2,402
May	3,234	2,565	no data	2,663	2,572	2,477	2,409	2,439	2,402	2,527
June	3,730	3,032	no data	2,939	2,984	2,967	2,821	2,857	2,829	2,818
July	3,988	3,720	no data	3,657	3,584	3,323	3,409	3,426	3,366	3,403
August	3,379	4,072	no data	3,962	3,838	3,582	3,722	3,635	3,626	3,728
September	2,787	3,600	no data	3,000	2,401	2,915	3,040	3,003	2,922	3,490
October	2,363	2,870	no data	2,473	2,299	2,320	2,401	2,381	2,304	2,698
November	no data	2,466	no data	2,049	2,114	2,073	1,979	2,087	2,108	2,217
December	no data	2,265	no data	1,883	2,103	2,012	1,867	1,896	2,079	2,259
Annual Average	**N/A**	**2,784**	**N/A**	**2,633**	**2,566**	**2,535**	**2,573**	**2,542**	**2,515**	**2,665**

Source: Washington Department of Transportation 1997, 1999, 2000, 2001, 2002b, 2003, 2004, 2005a, 2005c.



Source: Washington Department of Transportation 1997, 1999, 2001, 2003, 2005a.

Figure 3-11. Average Weekday Traffic Counts on Highway 101 Near State Route 113, 1996 to 2004

TABLE 3-38. DAILY TRAFFIC COUNTS ON HIGHWAY 101 NEAR STATE ROUTE 113, MAY 1999

WEEK NUMBER	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1							2,340
2	2,002	2,376	2,393	2,420	2,382	2,618	2,422
3	2,143	2,432	2,458	2,486	2,530	2,764	2,558
4	2,318	2,465	2,502	2,635	2,680	3,159	3,221
5	3,161	2,994	2,647	2,782	2,954	3,431	3,446
6	3,569	3,150					

Source: Washington Department of Transportation 2005b.

Note: Bold font indicates the dates of the successful hunt (May 17, 1999) and the subsequent celebration (May 22, 1999).

This pattern does not hold true on Memorial Day weekends, when Sunday volumes can approach or even exceed those of the preceding Friday. The only other exception to this pattern occurs during the weekend of May 21 to 23, 1999, when Sunday traffic exceeded traffic on the preceding Friday, although barely. This anomaly may be attributable to many factors, such as weather, and may also reflect trips by participants attending the May 22 feast and celebration.

3.13.3.2 Marine Vessel Traffic

Marine vessels that travel to Neah Bay may find moorage at the Makah Marina, where more than 200 fishing vessels (commercial and recreational) and pleasure craft can anchor. In addition, several thousand large vessels pass by Neah Bay each year on their way through the Strait of Juan de Fuca to ports in Canada and the United States.

3.13.3.2.1 Fishing Vessel Traffic

The amount of marine vessel traffic associated with commercial fishing activity can be estimated by counting commercial fish tickets for vessels that land at the Neah Bay Marina. Both tribal and non-tribal fishers are required by law to complete a fish ticket when they land their catch. Rarely, catch from a single trip might be listed on two tickets. In other cases, a vessel may engage in day-fishing trips for several days and then make a single landing. Statistically, these two circumstances offset one another and do not occur frequently enough to affect the overall total counts (Culver 2005).

Estimates of vessel traffic associated with recreational fishing are based on vessel counts conducted by the Washington Ocean Sampling Program. Between mid-April and October, sport fishing vessels are counted either leaving the port (between 4:30 a.m. and the end of the day) or entering the port (between 8:00 a.m. and dusk). Due to a processing error, no data are currently available for 2002 (Culver 2005).

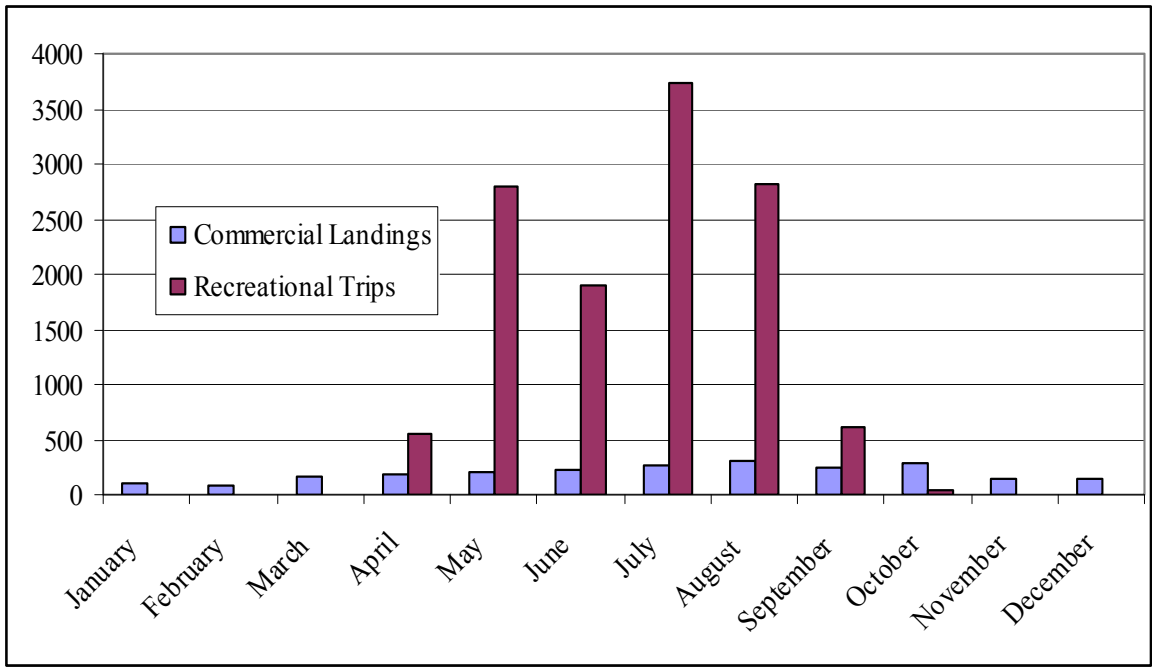
Between 1997 and 2004, total boat trips at Neah Bay showed an average annual increase of approximately 6 percent Table 3-39). Most vessel traffic at Neah Bay is associated with recreational trips, which account for at least 80 percent of all boat trips in all years. In most years, the peak of recreational fishing activity occurs in the month of July (salmon fishing season), with a secondary peak during the halibut season in May (Figure 3-12). Recreational fishing trips decrease dramatically in September, and commercial trips exceed recreational trips by October (WDFW 2005c; WDFW 2005d). On average, approximately 83 percent of all boat trips (commercial and recreational) occur during the months of May, June, July, and August. The five-month period from November to March accounts for less than 5 percent of all trips. Five percent of all trips occur in April, 6 percent in September, and 2 percent in October.

TABLE 3-39. RECREATIONAL FISHING BOAT TRIPS AND COMMERCIAL FISHING VESSEL LANDINGS AT NEAH BAY, 1997 TO 2004

	1997	1998	1999	2000	2001	2002	2003	2004
Recreational Trips	10,519	11,633	10,909	12,057	13,062	NA[1]	13,396	15,388
Commercial Landings	2,517	1,950	2,335	1,833	2,170	2,414	2,711	2,945
TOTAL	**13,036**	**13,583**	**13,244**	**13,890**	**15,232**	**NA**	**16,107**	**18,333**

[1] No recreational fishing trip data are available for 2002.

Source: WDFW 2005c, 2005d.



Source: WDFW 2005c, 2005d.

Figure 3-12. Average Monthly Levels of Marine Vessel Traffic at Neah Bay, 1997 to 2004

3.13.3.2.2 Offshore Vessel Transits

Ecology produces annual reports of the number of entering transits by various vessel types. An entering transit is defined as the passage of a vessel from sea or from Canadian waters into Washington State waters, regardless of destination (Ecology 2005a). The data collected by the department identify commercial fishing, cargo, and passenger vessels 300 gross tons and larger, as well as tank ships and tank barges transporting oil of any tonnage. Entering transits at the Strait of Juan de Fuca provide a measure of the amount of marine traffic near the Makah Tribe's U&A. From 2002 to 2004, Ecology reported roughly 4,500 to 4,700 entering transits annually via the

Strait of Juan de Fuca (Table 3-40). This averages to approximately 12 to 13 large vessels per day, with cargo and passenger vessels comprising more than 80 percent of entering transits. Personnel at the Canadian Coast Guard's Tofino Station have observed very little seasonal variability in traffic volume, except in the case of fishing vessels (Smolders 2005).

TABLE 3-40. VESSEL TRANSITS USING THE STRAIT OF JUAN DE FUCA, 2002 TO 2004

VESSEL TYPE AND DESTINATION	2002	2003	2004
Cargo and Passenger Greater than 300 Gross Tons			
Washington Port	1,724	1,699	1,462
Canadian Port	2,193	2,303	2,231
Tank Ships and Barges			
Washington Port	529	567	596
Canadian Port	60	55	66
Commercial Fishing			
Washington Port	45	35	18
Canadian Port	85	23	5
Factory Fishing			
Washington Port	69	69	79
Canadian Port	1	1	29
TOTAL	**4,706**	**4,752**	**4,486**

Source: Ecology 2003b, 2004, 2005a.

The Tofino Station provided an estimate of approximately 40 to 50 vessel transits per day in the Strait of Juan de Fuca (entering and leaving), which equates to 20 to 25 entering transits. Based on a comparison of this estimate with the values reported by Ecology, approximately half of the daily transits are vessels less than 300 gross tons and not transporting oil.

3.13.3.2.3 Marine Traffic During the Previous Hunt

In the fall of 1998, as the Makah Tribe attempted to implement the first season of its hunt, several protest vessels began a two-month occupation of Neah Bay to prevent the taking of a whale. From late September to late November, more than 15 protest vessels trailed any boat that left the Neah Bay marina (Dark 1999). Most of the protest vessels moored each night in Sekiu, a half-hour boat ride away (Mapes 1998a). The Sea Shepherd Conservation Society anchored the 180-foot *Sea Shepherd III* and the 95-foot cutter *Sierenian* outside Neah Bay and publicized plans to use a 27-foot former Norwegian military submarine painted to resemble a full-grown orca whale (Mapes 1998a; Tizon 1998b). The number of protest vessels was smaller when the hunt resumed the following spring; approximately a dozen boats returned to Sekiu (Mapes and Solomon 1999b).

3.13.3.3 Air Traffic

Three airports serve Neah Bay and the western portion of Clallam County. Closest to Neah Bay is the Sekiu Airport, approximately 20 miles east on Highway 112. The Washington Department of Transportation (2002a) provides an estimate of approximately 1,000 annual operations at the airport. The airport has a visual approach slope indicator system, which is a set of lights that provide visual descent guidance information during the approach to a runway.

The Forks area, approximately 30 air miles from Neah Bay (50 miles by highway), has two public access airports. The Forks Municipal Airport, located on the south edge of the City of Forks, has a 2,400-foot paved runway and receives approximately 13,550 annual operations (Washington Department of Transportation 2002a). The Coast Guard uses the airport as a refueling station for its helicopters. The airport is also used by emergency medical air transport helicopters that service the Forks Community Hospital (Newkirk and Casavant 2002). The Quillayute Airport is a former Naval Auxiliary Air Station located approximately 10 miles west of Forks. It receives approximately 450 annual operations (Washington Department of Transportation 2002a). Neither the Forks nor the Quillayute Airport has an approved instrument approach that would allow flights to proceed in most weather conditions (Newkirk and Casavant 2002).

Experience from the 1999 hunt indicates that media aircraft can operate at altitudes more than 2,000 feet above water. On the day of the successful hunt, three television news helicopters were present throughout the day; according to Coast Guard accounts of the day, the aircraft were very helpful and observed all safety precautions (United States Coast Guard 1999a). The only problem with aircraft occurred on one day in 1998 when a seaplane operated by protest groups made several passes lower than 2,000 feet over the area of the hunt. Operators of the aircraft were subsequently contacted by the Coast Guard, and the activity did not recur in 1999.

3.14 Public Services

3.14.1 Introduction

The following section documents several public-service-related issues pertaining to the Makah whale hunt. Key parameters for analysis include staffing and occurrence rates of incident responses for local law enforcement agencies, including the Coast Guard and police. Also included is a discussion of public health facilities near Neah Bay.

3.14.2 Regulatory Overview

No specific regulations pertain directly to the establishment or maintenance of public services in the project area.

3.14.3 Existing Conditions

3.14.3.1 Coast Guard

The Coast Guard maintains Station Neah Bay, a small boat station within the Makah Indian Reservation. The station is staffed by 32 active-duty personnel; equipment includes two 47-foot motor lifeboats and one 25-foot response boat (United States Coast Guard 2008). The station also features a helicopter landing pad with fueling facilities. The station's area of responsibility extends from the Strait of Juan de Fuca east to Pillar Point and south to Cape Alava. The station responds to approximately 100 search and rescue cases a year, primarily during the summer, when sports fishers and tourists are present in greatest numbers (United States Coast Guard 2004). The station's crew is also responsible for maritime law enforcement in the area, conducting approximately 200 safety boardings per year.

During the previous Makah whale practice exercise in 1998 and hunts in 1999 and 2000, Coast Guard personnel were responsible for ensuring the safety of persons and vessels near the hunt. To this end, the Coast Guard enforced an RNA and a 500-yard moving exclusionary zone around tribal vessels actively engaged in the hunt. This MEZ was designed to keep protesters, reporters, and spectators out of the area where life and property would face the greatest risk of endangerment from an injured or pursued whale or a round from a .50-caliber rifle. See Section 3.1.1.3, Coast Guard Regulated Navigation Area, and Section 3.15.2.1, Vessel Safety Regulations and Authorities for more information about operation of the RNA and MEZ in prior hunts. The Coast Guard used helicopters, a cutter, and several utility boats and Zodiacs to enforce the exclusion zone (Mapes and Solomon 1999b). In October and November of 1998, two additional 41-foot utility boats were made available, if needed, but no extra personnel were placed on duty (Mapes 1998d). In May 1999, the Coast Guard cited the operators of four protest boats for grossly negligent operations and/or MMPA take violations, and three of the vessels were taken into federal custody (NMFS 1999; United States Coast Guard 1999c; United States Coast Guard 1999d). In April 2000, a Coast Guard utility boat responded to a protest vessel that was violating the exclusionary zone around a Makah canoe engaged in the whale hunt. See Section 1.4.2, Summary of Recent Makah Whaling – 1998 through 2007, and Section 3.15.3.4, Behavior of People Associated with the Hunt, for more details about protest activities.

3.14.3.2 Police

The Makah Tribal Police have jurisdiction over crimes and infractions committed by Native Americans from any tribe on reservation lands. In addition, the tribal police have the authority to detain non-Indians for violations of law occurring on the reservation until they can be turned over to the appropriate authority (county, state, or federal). See Section 3.1.2.1, Makah Tribal Departments and Agencies, for a description of the tribal police department and Section 3.1.2.2.1, Makah Public Safety Program, for a description of the Tribe's emergency management plan. In 2005, Makah Public Safety responded to emergencies in the following ways:

- Tribal dispatchers, including 911 calls, received 26,815 calls.
- Provided 341 ambulance transports, including transportation to outlying hospitals and response to local emergencies (including vehicular accidents).
- Took 3,330 police calls.
- Provided 341 ambulance transports, including transportation to outlying hospitals and responses to local emergencies (including vehicular accidents).

Non-tribal law enforcement activity in the area is conducted by the Clallam County Sheriff's Department, which has one sergeant and four deputies stationed at Clallam Bay. The patrol division of the Sheriff's Department is responsible for police patrols in all unincorporated areas of Clallam County, responding to calls for service made by citizens in need of police assistance, and actively seeking out crime and traffic offenders. The closest deputy lives approximately 20 to 30 minutes from Neah Bay, which would be the minimum amount of time required to respond to an unanticipated law enforcement need. The Washington State Patrol oversees traffic safety compliance on roads and highways in the area. Two state troopers patrol the northwestern portion of the Olympic Peninsula, from the western end of Lake Crescent to the Quinault Indian Reservation (George 2005a). This area includes approximately 70 miles of United States Highway 101; 70 miles of State Routes 110, 112, and 113; and numerous local and other roads.

In 2003 and 2004, the Clallam County Sheriff's Department conducted an average of approximately 150 traffic stops annually in the western portion of the county, including State Route 112 and Highway 101 west of Lake Crescent, neither of which are on the Makah Reservation. Approximately 15 percent of the calls for service received by the patrol division typically come from that part of the county, which has about 10 percent of the county's population (Snover 2005). The Sheriff's Department has not had to respond to any calls for disturbance of the peace or similar problems since 1999.

The Washington State Patrol has more-detailed data available for policing activities conducted by state troopers (Table 3-41). From 1997 to 2004, state troopers conducted an annual average of more than 1,000 traffic stops on the 36 miles of state and federal highway closest to Neah Bay. This area includes United States Highway 101 between Forks and the turnoff for State Route 113, State Route 112 west of Sekiu, and the entire length of State Route 113. The sharp increase in traffic stops on State Route 113 in 1999 could be related to the Makah whale hunt (George 2005b). In addition to conducting traffic stops, state troopers responded to an average of more than 50 collisions in this area each year. In most years, more than half of these collisions occurred on the 15-mile stretch of State Route 112 between Sekiu and the Makah Reservation boundary, which had an average annual rate of 1.8 collisions per mile. The corresponding rates for United States Highway 101 and State Route 113 were 1.5 and 0.9 collisions per mile, respectively.

A law enforcement task force was assembled to ensure public safety during the previous hunts in 1998, 1999, and 2000 (Section 3.15, Public Safety, for more information about the task force). The task force was prepared to deploy any combination of 14 law enforcement agencies, from the Clallam County Sheriff's Department to the Royal Canadian Mounted Police. Ships, boats, planes, helicopters, squad cars, and the National Guard were prepared to participate, if necessary. The task force prepared for a worst-case scenario of 15 days of police protection, costing $160,000 in overtime, equipment, and supplies (Mapes 1998d). Despite serious concern about conflicts between protesters and whaling supporters, the full strength of the task force was never needed.

TABLE 3-41. NEAH BAY AREA TRAFFIC STOPS AND COLLISIONS, 1997 TO 2004

	1997	1998	1999	2000	2001	2002	2003	2004
State Route 101 Mileposts 192-203								
Traffic stops	608	954	831	851	770	683	829	682
Collisions	20	14	15	21	20	15	16	9
State Route 112 Mileposts 0-15								
Traffic stops	139	184	103	91	75	61	78	103
Collisions	28	37	28	24	23	30	28	21
State Route 113 Mileposts 0-10								
Traffic stops	103	133	251	122	110	181	164	156
Collisions	10	9	13	7	10	12	4	4
TOTAL								
TRAFFIC STOPS	**850**	**1,271**	**1,185**	**1,064**	**955**	**925**	**1,071**	**941**
COLLISIONS	**58**	**60**	**56**	**52**	**53**	**57**	**48**	**34**

Source: Washington State Patrol 2005.

The Clallam County Sheriff's Department did not find that the hunt and associated activities imposed a substantial burden on department staff (Snover 2005). Particular concern preceded the celebration of Makah Days in August 1998. There were rumors that up to 20,000 anti-whaling demonstrators might attend to disrupt the tribal community festival. Washington Governor Gary Locke mobilized 800 members of the National Guard to ensure public safety. By the end of the festival weekend, there had been no demonstrations and few protesters (Mapes 1998d). The following year, $825,000 of the state general fund was allocated to reimburse costs associated with this activation (Washington State Senate 1999).

3.14.3.3 Local Medical Facilities

The Sophie Trettevick Health Center on the Makah Reservation has three permanent providers, who are Indian Health Service employees – two medical doctors and one nurse practitioner. The clinic focuses on primary care and has x-ray services and a pharmacy. The normal hours of operation are Monday through Friday, from 8:00 a.m. to 5:00 p.m. After-hours and emergency services are provided be emergency responders via 911 calls, 24 hours per day, seven days per week. Emergency response includes stabilization and transport to the closest appropriate facility. Airlift NW (Seattle) can be called in, and patient destination is determined by the emergency responder. If Airlift NW is not available, the Coast Guard may provide transport. For emergencies on the water, the Coast Guard is the responder.

Although the health clinic provides day-to-day care service to tribal members, it will treat anyone with life or limb-threatening injuries. Injured non-Indians patients are stabilized and transported to an appropriate facility. The clinic has a memorandum of agreement with the Coast Guard to provide services and with Clallam Bay Fire District 5 to provide mutual assistance in emergency situations. The clinic has a Comprehensive Emergency Management Plan (2005) that dovetails to the Makah Comprehensive Management Plan (Section 3.1.2.2, Makah Tribal Porgrams and Management Plans).

The closest 24-hour medical facility is the Forks Community Hospital, approximately 50 miles away. This is a Level 4 trauma care facility; patients with life-threatening injuries are stabilized and transported by Airlift Northwest or ambulance to more advanced trauma facilities, if necessary. The closest Level 3 trauma care facility (a facility with the resources for emergency resuscitation, surgery, and intensive care for most trauma patients) is at Olympic Medical Center in Port Angeles, 71 miles from Neah Bay and 58 miles from Forks. The closest Level 1-2 trauma care facility, which supports the full availability of specialists and can provide back-up resources for the care of exceptionally severe injuries, is Harborview Medical Center in Seattle, 120 air miles away.

3.15 Public Safety

3.15.1 Introduction

Aboriginal subsistence whale hunting is an inherently dangerous activity. The 2006 IWC Whale Killing Methods Workshop Report indicated, for example, that fatal accidents are not uncommon in Arctic aboriginal subsistence whaling hunts; between one and six people die annually in the Alaska and Chukotka Native hunts, combined (IWC 2007a). Five factors in the local environment may affect public safety: location of the hunt; weather and sea conditions; behavior of the targeted species (the gray whale); number and behavior of people associated with the hunt (including protesters); and hunting equipment, including vessels and weapons.

3.15.2 Regulatory Overview

3.15.2.1 Vessel Safety Regulations and Authorities

Any Makah whale hunt would occur within the EEZ of the United States, where the Coast Guard has enforcement authority over vessel safety under the Ports and Waterways Safety Act (33 USC 1221 et seq.). The Coast Guard has established an RNA in the Strait of Juan de Fuca and adjacent coastal waters of northwest Washington (33 CFR 165.1310) to enforce vessel activities near any Makah whale hunt and reduce the danger of loss of life and property from any hunt. See Section

3.1.1.3, Coast Guard Regulated Navigation Area, and Figure 3-1, for information about location of the RNA in relation to the project area. When the Coast Guard finalized the RNA after the 1999 hunt had occurred, it specifically found that "[t]he uncertain reactions of a pursued or wounded whale and the inherent dangers in firing a hunting rifle from a pitching and rolling small boat are likely to be present in all future hunts, and present a significant danger to life and property if persons or vessels are not excluded from the immediate vicinity of a hunt" (64 FR 61209, Nov. 10, 1999).

Within the RNA, a MEZ is activated when one Makah whale hunt vessel displays an international numeral pennant 5. The whale hunt vessel may be the canoe or the chase boat; the MEZ extends 500 yards around the vessel. The zone operates between sunrise and sunset, when surface visibility exceeds 1 nautical mile (33 CFR 165.1310(b)). The MEZ is deactivated upon sunset, when visibility is reduced to less than 1 nautical mile, or when the Makah hunt vessel takes down the international numeral pennant 5 (33 CFR 165.1310(b)). No person or vessel may enter the MEZ when it is activated, except for the authorized Makah whale hunt vessel, an authorized media pool vessel preauthorized by the Coast Guard, or another vessel or person authorized by the Coast Guard (33 CFR 165.1310(c)), such as the observer vessel. The authorized media pool vessel must maneuver to avoid positioning itself between whales and hunt vessels, out of the line of fire, at a prudent distance and location relative to the whale hunt operations, and in a manner that avoids hindering the hunt or path of the whale in any way (33 CFR 165.1310(f)(3)). The media pool vessel must operate at its own risk, but in accordance with safety and law enforcement instructions from Coast Guard personnel (33 CFR 1310(f)). The regulation does not affect normal transit or navigation in the RNA. The Makah whalers must provide specific broadcasts on a marine radio channel (Channel 16 VHF-FM), starting one half hour before they begin whale-hunting operations and continuing every half hour until hunting activities end. The broadcasts advise mariners of the 500-yard exclusion area and urge them strongly to remain even further away from whale hunting activities as an additional safety measure (33 CFR 1310(e)).

The Coast Guard's regulations are consistent with the International Maritime Organization's guidelines for preventing collisions at sea (1972 Convention on the International Regulations for Preventing Collisions at Sea) and meet the goals of IWC Resolution 2006-2. At the 58th Annual Meeting on St. Kitts, the IWC adopted Resolution 2006-2 on the Safety of Vessels Engaged in Whaling and Whale Research-related Activities, recognizing concerns about confrontations at sea and ports related to whaling activities. The IWC and contracting governments acknowledged the right to legitimate and peaceful forms of protest and demonstration, but agreed and declared that

the IWC and contracting governments do not condone any actions that are a risk to life and property relative to confrontations related to whaling between vessels at sea.

3.15.2.2 Weapon Safety Regulations and Authorities

For Makah tribal members on the Makah Reservation or hunting in the Tribe's U&A, Title 10 of the Makah Law and Order Code, Weapons Control Ordinance, governs the possession and use of weapons. Adults may possess weapons on the reservation, provided that individuals do not carry their weapons with intent to assault another, do not threaten to use or exhibit weapons in a dangerous or threatening manner, and do not use weapons in a fight or quarrel (Section 10.5.01). Weapons also must not be concealed; loaded and carried in a vehicle on a public road; discharged from, upon, or across any public highway (Section 10.5.01); and not possessed or discharged in any closed area (Section 10.5.02). Juveniles from 16 to 18 years of age may possess weapons after completing a weapons training course and receiving a weapons safety certificate from the chief of the Makah Tribal Police (Section 10.2.01).

Under the proposed action and in the past hunts, the Makah Whaling Commission has also established certification guidelines and a certification process for whaling captains, harpooners, riflemen, divers, canoe paddlers, and other whaling team members. The guidelines and certification process ensure that every whaler has received adequate training to perform his assigned role on the team. Certification of riflemen includes a demonstration of proficiency and accuracy under simulated hunting conditions. Under the proposed action, and in past hunts under the 2001 Gray Whale Management Plan, the rifleman (onboard the Makah chase boat) cannot discharge a weapon until authorized to do so by a Makah safety officer (a diver or a Makah member also on board the Makah chase boat). There are three safety factors:

1. The safety officer has the authority to determine whether visibility is less than 500 yards in any direction, in which case the whaling captain suspends the hunt.
2. The safety officer would not authorize the rifleman to discharge the weapon unless the barrel of the rifle was above and within 30 feet or less from the target area of the whale.
3. The safety officer would determine whether the rifleman's field of view is clear of all persons, vessels, buildings, vehicles, highways, and other objects or structures that if hit by a rifle shot could cause injury to human life and property.

Off the Makah Reservation (including on the territorial sea), or for non-Indians on the Reservation, the laws of Washington State apply to weapon possession and use. The Revised Code of Washington (3.1 RCW 9.41.270(1)) contains the following language:

> [i]t shall be unlawful for any person to carry, exhibit, display, or draw any firearm, dagger, sword, knife or other cutting or stabbing instrument, club, or any other weapon apparently capable of producing bodily harm, in a manner, under circumstances, and at a time and place that either manifests an intent to intimidate another or that warrants alarm for the safety of other persons.

3.15.2.3 Other Safety Regulations and Authorities

For Makah Tribe members on the Makah Reservation or hunting in the Tribe's U&A, several different provisions of Title 5 of the Makah Law and Order Code, Criminal Code, prohibit acts such as assault, harassment, trespass, criminal mischief and injury to public property, which could apply to disruptions associated with protest activities. Section 3.1.2.1, Makah Tribal Departments and Agencies, describes the Makah Public Safety Department, which is responsible for enforcing the Tribal Code, and Section 3.1.2.2, Makah Tribal Programs and Management Plans, describes the Makah Tribe's law enforcement programs. Off the Makah Reservation, or for non-Indians on the reservation, the laws of Washington State apply to such activities. The Revised Code of Washington prohibits a similar suite of criminal activities that could be associated with protest activities.

3.15.3 Existing Conditions

3.15.3.1 Location of the Hunt

The bulk of the Makah U&A lies along the geographically remote and isolated Washington coast, but an arm of the U&A extends into the Strait of Juan de Fuca, in United States waters from Neah Bay to Tongue Point near Port Angeles (Figure 1-1, Project Area). The portion of the U&A along the Strait of Juan de Fuca is less remote and is bordered by public lands, communities, and State Route 112, which runs parallel to the shoreline for nearly the entire length of the Strait portion of the U&A. A few points of State Route 112 closely hug the shore. The current Coast Guard RNA is smaller than the U&A, and the portion of the RNA that extends into the Strait stops just past the Makah Reservation (Figure 3-1, Designated and Managed Areas).

3.15.3.2 Weather and Sea Conditions

3.15.3.2.1 Relevance of Weather and Sea Conditions

The IWC has recognized that prevailing weather conditions in association with relatively small vessels and traditional hunting techniques may diminish the efficiency of aboriginal subsistence whaling (see, for example, IWC Resolution 2001-2, IWC Resolution 2004-3). Seasonal and weather variations in the local environment where aboriginal hunts occur also affect the safety of whale hunts, including locating, striking, and killing the whale; recovering the whale; and towing it back to a butchering location. In its Report on Weapons, Techniques, and Observations in the Alaskan Bowhead Whale Subsistence Harvest, the United States reported that fall bowhead hunts occur under conditions that include high winds, rough seas, and ice-choked waters and stated that fatal accidents are a fact of the hunt under such treacherous conditions (Alaska Eskimo Whaling Commission 2006). The weather and sea conditions in the project area can also be treacherous, as described further below.

Dangerous weather and sea conditions for the Makah historic whale hunts are evident in their traditional equipment design, such as 36-foot-long and five-foot-wide canoes designed for seaworthiness and ability to travel great distances offshore (Arima 1983; Renker 2002) and in their statements before the British Commissioners in the 1890s, where tribal members reported that pelagic seal hunting was "practically given up" for about 20 years due to loss of lives at sea while hunting (Section 3.10.3.4, Makah Historic Whaling, Cessation of the Hunt, citing Crockford 1996). During the 1998 training exercises and the 1999 to 2000 Makah whale hunts, no weather-related accidents or fatalities occurred. All hunts occurred in late April and May, when weather and seas generally begin to improve in the Makah U&A. On May 11, 1999, the Makah suspended one of their four days of hunting for that year after less than 2 hours of hunting, due to inclement weather conditions (Gosho 1999; NMFS 1999). During the fall/winter of 1999/2000, the Makah Tribal Council did not issue any whaling permits because weather conditions were unsuitable.

Relevant weather and sea-state parameters for the project area and proposed action include air temperature, sea temperature, fog and precipitation, wind speed, and wave height. Air temperature is important to hunting safety because ocean water can freeze on deck (generally at 28.5°F [-1.9 °C]), potentially causing equipment to be slick or otherwise hampered. This could lead to injuries or reduce the accuracy and efficiency of the harpooner and rifleman. Sea temperature may also be relevant to determining the risk of hypothermia if a person involved in or protesting the hunt enters the water (for example as the result of a boat overturning or other

accident). Fog and precipitation can reduce visibility, creating a potential for vessel collisions or reducing the accuracy of the harpooner or rifleman. Beattie (2001) recommended a minimum visibility standard of 500 yards in all directions during the Makah hunts, to eliminate problems with boats entering the 500-yard MEZ (Section 1.4.2, Summary of Makah Whaling — 1998 through 2007, for information about the many boats that have been associated with past Makah hunts). The Makah included this 500-yard visibility recommendation in their proposed action. Wind speed can also affect the accuracy of the harpooner or rifleman.

Wave height can affect vessel operations and stability, as well as visibility and orientation of the whale, all of which can influence the accuracy of the harpooner or rifleman. Beattie (2001) recommended that the Makah hunts institute a 30-foot distance limitation between the rifleman and the whale and require that a rifleman only fire at a downward angle, based on concerns about sea swell as it relates to accuracy (i.e., missed shots) and ricochets. The Makah's proposed action includes the 30-foot distance limit and downward firing angle. In a later report again examining the safety and guidelines for the Makah hunt, Graves et al. (2004) concluded that shots fired at or below a certain angle will not produce ricochets, "whether the water surface is glass smooth or rough with waves" (Section 3.15.3.5.2, Weapons Associated with the Hunt, Secondary Killing Methods).

3.15.3.2.2 Description of Weather and Sea Conditions in the Project Area

Sea temperature by month is displayed in Figure 3-13, Sea Temperatures at Cape Elizabeth Buoy from June 1987 through December 2001. Significant wave height (the average of the highest one-third of all wave heights recorded during 20-minute sampling periods) by month is displayed in Figure 3-14. Air temperature, precipitation, visibility, and wind information are displayed in Table 3-42, Climatological Data from Tatoosh Island. Winds in the project area are strongest from October through March (with monthly averages ranging from 14.1 to 17.4 knots), tapering off from April through August, and beginning to increase again in September (monthly averages during this period range from 8.9 to 12.2 knots) (Table 3-42). Variations in both air and sea temperature follow a seasonal pattern, with a moderate range from average monthly highs to average monthly lows. Air temperature drops steadily from September through January and February, with warming beginning in March and continuing through August. The range in average monthly temperature is 41.4° F (5.2° C) in January and 56.2° F (13.4° C) in August. Sea temperature follows a similar pattern, ranging from a low around 8° C (46° F) in January and February to 14° C (57° F) in August. Significant wave height increases during the fall and winter

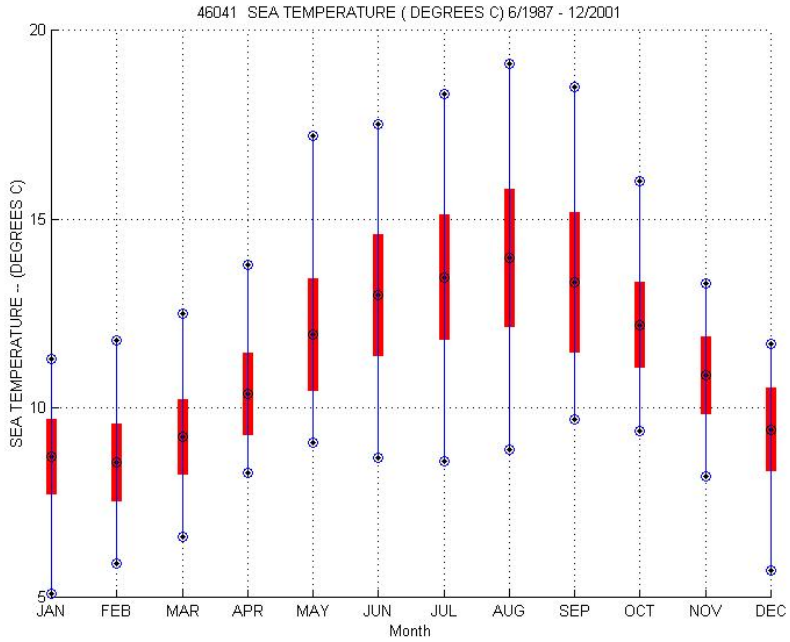
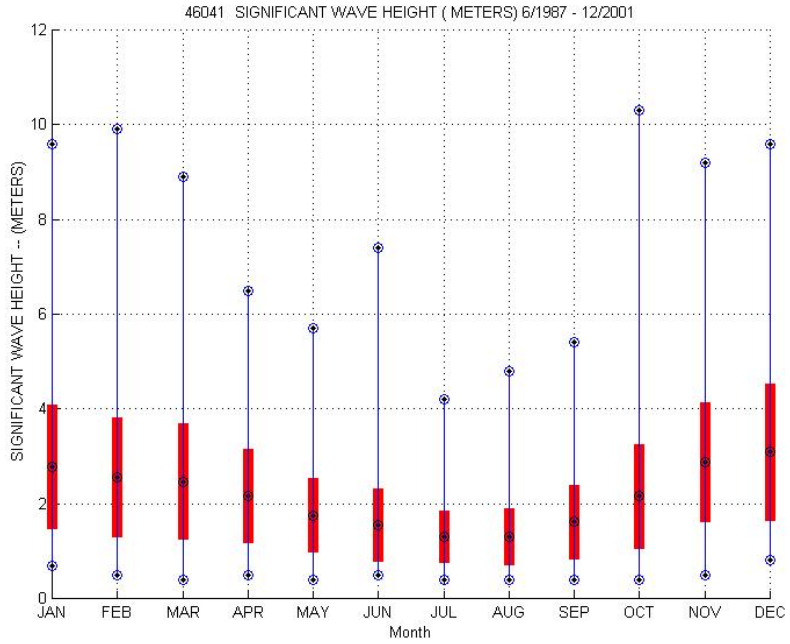


Figure 3-13. Sea Temperatures at Cape Elizabeth Buoy from June 1987 through December 2001



Source: NOAA National Data Buoy Center 2007a.

Figure 3-14. Significant Wave Height at Cape Elizabeth Buoy from June 1987 through December 2001

Source: NOAA National Data Buoy Center 2007b.

months. The range of average significant wave heights is also moderate (from around 6 feet in the summer months to around 13 feet in the winter months), but the period of time from October through March has greater variability within months, showing periods of significant wave heights exceeding 30 feet (October). There are more days of fog in July through September than the rest of the year, while precipitation (the other factor affecting visibility) is lowest from April through October.

TABLE 3-42. CLIMATOLOGICAL DATA FROM TATOOSH ISLAND, WA (48°23'N, 124°44'W, 115 FEET ELEVATION)

Weather Elements	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Yrs Of Record
Temperature (Degrees F)														
Mean	41.4	43.3	43.5	46.9	50.6	53.4	55.4	56.2	55.1	52.0	47.3	44.1	49.1	18
Mean daily maximum	44.7	46.9	47.4	51.0	54.6	57.2	59.2	60.1	59.5	55.9	50.8	47.4	52.9	18
Mean daily minimum	37.6	39.2	39.1	42.4	46.1	49.2	51.1	51.8	50.2	47.7	43.3	40.3	44.8	18
Extreme -highest	57	63	66	69	74	82	80	76	80	70	64	61	82	18
Extreme -lowest	14	20	25	33	37	43	46	45	43	36	19	14	14	18
Precipitation														
Mean amount (inches)	10.93	9.59	7.91	5.48	2.63	2.59	2.06	2.35	3.38	8.65	11.52	12.52	79.62	18
Greatest amount (inches)	20.02	21.16	14.80	10.20	6.10	6.31	6.05	4.78	7.04	13.65	22.17	16.81	101.64	18
Least amount (inches)	1.84	4.23	2.94	0.68	0.87	0.47	0.03	0.18	1.18	2.50	4.47	7.25	68.70	18
Maximum amount-in 24 hours (inches)	2.93	2.74	2.68	3.05	1.64	2.18	1.50	2.14	1.95	3.80	3.76	3.28	3.80	18
Mean number of days with precipitation	25	22	24	20	19	19	18	19	16	20	23	26	251	18
Wind														
Percent of observations with gales	6.09	3.59	1.21	1.01	0.19	0.07	0.02	0.02	0.28	2.06	3.87	5.49	2.32	19
Mean wind speed (knots)	17.4	15.9	14.1	12.2	10.3	9.1	8.9	8.9	10.4	14.1	16.6	17.4	12.9	19
Visibility														
Mean number of days with fog	11	11	9	9	10	14	18	21	17	13	10	12	155	18
Percent of observations with visibility less than or equal to ½ mile	0.96	0.74	0.46	0.67	2.73	4.97	9.50	15.12	9.81	3.96	0.95	0.43	4.19	19

*Sea level pressure is station pressure reduced to sea level.
T = trace (not measurable) of precipitation.
MISS or (blank) is a missing value.
Source: NOAA's National Climatic Data Center, National Environmental Satellite, Data & Information Service

3.15.3.3 Behavior of the Gray Whale

Early whalers referred to gray whales as 'devil fish' and 'hard head' because gray whales were reported to attack whaling skiffs when harpooned, frequently causing a loss of human life (Henderson 1984). During the IWC's 2003 workshop on whale killing methods, the Russian delegate emphasized the aggressive behavior of gray whales (IWC 2004c). The violent struggles of a struck whale can result in vessels being capsized, persons on vessels being knocked into the water (Alaska Eskimo Whaling Commission 2006), or individuals becoming entangled in the lines fastened to the whale. Even postmortem movements of a whale may be dangerous. Towing a dead whale also presents hazards, particularly if the whale is not well moored to the vessel (e.g., Alaska Eskimo Whaling Commission 2006). While the Makah hunts in 1998 through 2000 did not result in any fatal accidents, hunting disasters did occur in prior whaling days. Arima (1983) reported that, "[t]he dangerous [moments of the hunt] lasted until all the line and floats were . . . out because someone could get caught in a loop or the canoe could be capsized or smashed in the first violent struggles of the whale before it sounded."

3.15.3.4 Behavior of People Associated with the Hunt

Based on experience in the 1998 Makah training exercises and the 1999/2000 hunts, any future Makah whale hunting will likely generate some degree of public interest that may involve public protests and the media. For additional information, see Section 1.4.2, Summary of Recent Makah Whaling – 1998 through 2007, and Section 3.12.3.3, Media Coverage of the 1998 through 2000 Hunts.

Before the Makah began the gray whale hunt in 1998, law enforcement authorities had advance notice of likely protests and conflicts between those protesting and those supporting the hunt. Prior to the hunt, the Makah Tribal Council directed the Makah Police Chief to form a task force of Makah departments (including the Police Department and Health Clinic) and off-reservation public safety resources (including Washington State Patrol, Clallam County Sheriff Department, Coast Guard, FBI, Department of Defense, other tribal police departments, etc.) to recommend a strategy to address any potential public disturbance related to whale hunts. The strategy called for close coordination of tribal, state, and federal authorities, including the military (Public Services, Section 3.14.3.2, Police, for more detail). The following discussion summarizes the protest activities and conflicts before and during the 1998 to 2000 whale hunts, including law enforcement response.

In 1998, the Makah whaling crew began to prepare for a hunt scheduled to start October 1, 1998. On August 25, 1998, the Makah Tribal Council passed Tribal Resolution 189-98 stating that protest vessels were not to dock at Neah Bay. This meant that protesters were not to attempt to disembark from vessels. A flotilla of protest vessels began to arrive before October 1, anchoring offshore in Neah Bay near Waadah Island. It included zodiacs, kayaks, a few larger boats belonging to the Sea Shepherd Conservation Society, and a two-person Norwegian Navy surplus submarine, painted like an orca and intended to deliver orca calls into the water to scare gray whales away. Federal and state officials advised the Sea Shepherd Conservation Society that noise emitted by the orca sub might constitute harassment under the MMPA (*Victoria Times Colonist* 1998). Others moored in nearby Sekiu, away from the reservation. The Sea Shepherd Conservation Society coordinated volunteers to conduct scouting trips up and down the coast in 15 boats, watching for the whaling canoe (Mapes 1998e). A British Columbia whale-watching charter organization representing 10 firms also appeared on October 1 (Mapes 1998e). By October 8, the protest vessels had deployed twice in reaction to a false alarm that the Makah were hunting whales (Mapes 1998e).

On November 1, 1998, one of the protesting organizations (Sea Shepherd Conservation Society) notified the Makah Tribal Council and law enforcement officials that a staged demonstration would take place. Coast Guard and Clallam County Sheriff's Office personnel remained at the Coast Guard base in Neah Bay, but stayed in contact with Neah Bay Police, who took the lead according to the previously agreed-upon task force structure (Buckingham et al. 2006). The M/V *Sirenian*, one of the larger boats, was steered up near the boat dock, and several zodiacs, kayaks, and jet skis approached and sped around inner Neah Bay. The protest boats played killer whale vocalizations over a loudspeaker and blew air horns (Mapes 1998f), shouted at tribal members onshore, and displayed protest banners. Crowds of Makah tribal members assembled on the waterfront, in cars, and on the shore, exchanging insults and honking horns; several members beat tribal drums, danced, and sang songs (Mapes 1998f; Shukovsky 1998a). Some Makah youths ran out on the docks with firecrackers and rocks, throwing them at the protest vessels, breaking a window on the *Sirenian*. Three protesters in a zodiac attempted to dock the vessel (to accept a dinner invitation from a Makah member); someone pushed one of the protesters off the dock into the water, without injury (Lacitis 1998; Mapes 1998f). Neah Bay Police subsequently detained all three protesters (Mapes 1998f). Tribal members and the police confiscated the zodiac; a fourth protester waded ashore to retrieve the zodiac and was arrested. The Neah Bay Policed turned all the detained individuals over to the Clallam Bay Sheriff's Department. The protesters all gave

voluntary statements and were released without charges (Mapes 1998f). The tribal police established order on shore, and the crowd dispersed. Clallam Bay Sheriff's Department and the Federal Bureau of Investigation conducted investigations in the following days (Mapes 1998f; Shukovsky 1998b).

A group of 30 protesters attempted a simultaneous vehicle protest on State Route 112, but Neah Bay Police stopped the protesters at the reservation boundary (Mapes 1998g). On November 5, Jean-Michel Cousteau visited the Makah Reservation and asked the Makah not to hunt; the visit was cordial by all accounts (Shukovsky and Barber 1998). On November 11, 1998 protest vessels mobilized, but were responding to a false report that the Tribe was hunting and had killed and landed a whale (United States Coast Guard 1998). Talks between the leader of the Sea Shepherd Conservation Society and the Makah Tribal Council took place on November 24, 1998. Sea Shepherd reportedly assured the Makah that motivations were not racial, and the Makah reportedly assured Sea Shepherd that they did not intend to sell whale meat to Japan (Denn 1998). All the protest vessels left by November 26, 1998 (The *Edmonton Journal* 1998). A second group of anti-whaling activists offered the Tribe monetary compensation in lieu of whaling (Denn 1998b), but Tribe did not accept the offer (Denn 1998c).

The spring 1999 hunt began on May 10, 1999, and continued over four nonconsecutive days (May 10, 11, 15, and 17) in the coastal portion of the Makah U&A south of Cape Flattery (Section 1.4.2, Summary of Recent Makah Whaling, for a more complete description of hunting locations). On May 10, 1999, the hunt was disrupted by vessel-based protesters who maneuvered between the two Makah vessels and the whales. Protesters tried to scare the whales, and they also fired flares and smoke flares at the Makah whaling party vessels (NMFS 1999; Sunde et al. 1999; United States Coast Guard 1999a). Because most of the hunting occurred south of the Coast Guard's RNA, a 500-yard MEZ around the Makah vessels was not in effect (NMFS 1999). Coast Guard officials detained two of the protesters and subsequently cited them for grossly negligent operation. The Clallam County sheriff arrested them for reckless endangerment (NMFS 1999; Sunde et al. 1999; United States Coast Guard 1999a). On May 11, the Makah whaling captain called off the second hunt shortly after it began due to inclement weather.

On May 15, 1999, protest vessels operated around the whalers much of the day. Two protest vessels encountered whales. One vessel ran over the top of a whale and temporarily stunned it, while another vessel hit the flukes of a diving whale beside the Makah canoe (NMFS 1999). The Coast Guard cited four vessels for grossly negligent operations and/or MMPA infractions and took three of the vessels into federal custody (NMFS 1999). On May 17, 1999, the fourth and final day of the hunt, no protest vessels attempted to disrupt the hunt (United States Coast Guard 1999b). The Makah crew successfully landed a whale on that day. Local and regional anti-whaling activists engaged in various acts of protest after the successful 1999 hunt. Activities ranged from peaceful candlelight vigils in Seattle (Burkitt 1999b), to protests on Washington State Route 112 at the Makah Reservation boundary. The leaders of some activist groups encouraged more direct action, such as being arrested, using lock boxes (barrels filled with concrete), and lock downs (use of chains, pipes, etc. to lock individuals together) (United States Coast Guard 1999c).

Before the spring 2000 hunt began, protesters arrived, patrolling the coast in a 38-foot retired Canadian search-and-rescue vessel, equipped with two jet skis and carrying some of the activists who had been charged in 1999 with negligently operating a motorized vessel (Welch and Morris 2000). A group of 30 protesters also blocked road access to the Makah Reservation for about an hour in early April (Welch and Morris 2000). The spring 2000 hunt began on April 17, 2000, and covered seven nonconsecutive days (April 17 and 20; May 6, 7, 10, 12, and 29) in the coastal portion of the Makah U&A south of Cape Flattery (Section 1.4.2, Summary of Recent Makah Whaling, for a more complete description of hunting locations). All hunts occurred within the Coast Guard's RNA and MEZ (Gearin and Gosho 2000), unlike spring 1999 hunts, because the southward boundary of the RNA had been extended by final rule on November 10, 1999 (64 FR 61209). During the first two days of hunting (April 17 and 20), protesters disrupted the hunts (Gearin and Gosho 2000). On April 21, Coast Guard personnel boarded two protest vessels and issued warnings (United States Coast Guard 2000). One of the vessels entered the 500-yard MEZ on three occasions subsequent to the Coast Guard advisory and was intercepted and again warned by the Coast Guard (United States Coast Guard 2000). On at least one of these three entrances into the MEZ, the vessel entered the 500-yard MEZ at high speed and was intercepted within 50 yards of the Makah's canoe (Gearin and Gosho 2000). Two individuals on jet skis also entered the MEZ, making high-speed charges at the Makah canoe (United States Coast Guard 2000). The Coast Guard intercepted both jet skiers. One jet ski operator ran into a Coast Guard vessel and sustained shoulder injuries; Coast Guard personnel retrieved the individual from the water, placed

the person under arrest, and transported her to Olympic Memorial Hospital (United States Coast Guard 2000). The Coast Guard also intercepted and arrested the second jet ski operator, transferring the individual to the Clallam County Sheriff's Office (United States Coast Guard 2000). On the five remaining hunting days (May 6, 7, 10, 12, and 29, 2000), one to three protester vessels were present during hunting, but they did not enter the MEZ to disrupt whale hunting.

3.15.3.5 Hunting Methods

3.15.3.5.1 Vessels Associated with the Hunt

The Makah traditionally hunted whales from large canoes approximately 36 feet long and more than 5 feet wide. Carvers made the canoes from a single cedar log. Currently, the Makah propose to make the initial approach and strike the whale in their traditional hunting canoe. A more modern chase vessel (a small skiff equipped with an outboard motor) would follow the traditional canoe. The second vessel would provide a platform for Tribe members (a rifleman, safety officer, and observer) who would assist in the hunt by killing a struck whale, finding a struck and lost whale, or towing a killed whale to shore. The driver of the chase boat would maneuver the rifleman to the harpooned whale to deliver a rifle shot at distances less than 30 feet from the target area.

3.15.3.5.2 Weapons Associated with the Hunt

Traditionally, the Makah used wooden harpoons with mussel shell tips to strike whales. The harpoon was attached to sealskin floats and lines made of sinew and cedar to secure whales. A long wooden lance was used to kill whales. After contact with American whalers, the Makah began to use iron harpoon heads and accept tows from commercial steamers. The Makah propose to hunt gray whales using a toggle-point steel harpoon, with a rope and floats attached, to strike and secure the whale and a .50 caliber rifle to kill it. This EIS also examines striking whales with a hand-thrown darting gun with either a black powder or penthrite explosive projectile, as well as killing whales with a black powder explosive projectile fired from a shoulder gun.

Primary Weapons Used to Strike (and Potentially Kill) Whales

Toggle-point Harpoon

A toggle-point harpoon is a wooden or metal shaft with a movable point (head) and is usually attached to a line (rope) and float. When the harpoon is thrust into a whale, the point twists horizontally (toggles) under the animal's skin. Pulling on the attached line secures the harpoon to the whale. The harpoon probably would not kill the whale, but it would be used initially strike and secure it with the line and floats. The Makah used a toggle point harpoon with a stainless

steel point to strike and secure the whale during the 1999 hunt, and their proposal is to continue using this method of striking whales.

Darting Gun (with toggle-point harpoon plus black powder or penthrite explosive projectiles)

A darting gun is a primary weapon some subsistence hunters use to strike and potentially kill whales. It is thrown by hand and consists of a steel toggle-point harpoon (connected to a line and floats) with a barrel attached to hold an explosive projectile (also referred to as a grenade, explosive charge, super bomb, and bomb lance) (O'Hara et al. 1999). A more extensive discussion of the types of explosive projectiles used in whaling follows. The steel harpoon serves the same purpose as the toggle-point harpoon described above, attaching a line and floats to the whale. The explosive projectile has a time-delay fuse designed to detonate after penetrating the whale; it is intended to stun or potentially kill the whale in conjunction with the first strike. Whales not killed by this first strike are killed using secondary weapons (another strike with the darting gun or the shoulder gun).

Secondary Weapons Used to Kill Whales

For most aboriginal whale hunts, secondary weapons (defined as those following the primary strike) are required to kill the whale. Secondary methods used by subsistence hunters include making additional strikes with the darting gun, shooting high caliber rifles, or firing explosive projectiles from a shoulder gun. The IWC encourages hunters to use secondary weapons for animals that move or in other ways show any signs of life as a routine precaution (IWC 2007a). The IWC has identified the appropriate target area for whales killed with rifles as the brain case (brain and upper neck) and, in emergencies, the heart. For whales killed with explosive projectiles, the appropriate target areas are the thorax and neck (IWC 2007a).

High-Caliber Rifle

Several aboriginal subsistence whalers and some commercial whalers use rifles as the secondary killing method. In 1997 and 1999, the Makah Whaling Commission contracted with Dr. Allen Ingling, a University of Maryland veterinarian with a background in ballistics, to choose the optimal weapons for hunting gray whales. The Tribe's goal was to provide safe conditions for humans and to employ a humane, effective, and efficient method of killing gray whales once attached to a line and floats. Dr. Ingling and the Makah investigated the performance of several firearms, including the Garand 30'06, Winchester .458 Magnum, Weatherby .460 Magnum, State Arms and LAR .50BMG, and the .577 A-Square Tyrannosaur. Participants assessed the weapons

for efficiency, safety, and humaneness by testing the depth of penetration of bullets in a water tank and evaluating weight, recoil, and loading ease (Ingling 1997; Ingling 1999). All of the weapons could kill a whale, based on test results, but participants selected the highest caliber rifles, the .50BMG and .577 A-Square Tyrannosaur, as the best options (Ingling 1999), primarily because the bullets would penetrate deeper in water, allowing a larger margin of error in targeting. The Tribe ultimately used the .577 A-Square Tyrannosaur in the 1999 hunt, because it was 6 pounds lighter that the .50BMG, it had a 3-round rather than single-shot capacity, and its shots penetrated deeper into the water.

In NMFS' 2001 EA (NMFS 2001a), reports indicated that no data on ricochet were available from the Army's .50BMG Field Manual (United States Army 1991). During a public comment period, NMFS received a report from Kline Engineering Company (Kline 2001) that assessed ricochet data, ricochet probability, and modeled trajectories for .50 caliber M33 rounds fired against sand. Kline (2001) concluded that no firings should be conducted within 6,670 yards from shore and advised that a ricochet could travel almost 1,860 yards off the line of fire. Subsequent to the Kline report, Beattie Natural Resources Consulting assessed the public safety of the 1999 hunt, specifically, the potential for injury or death from rifle fire to non-participants in the hunt. Beattie (2001) disagreed with Kline's earlier conclusions about a safety zone, but agreed there was a potential for missed shots to ricochet. Beattie (2001) made the following recommendations to enhance public safety of the hunt in the Strait of Juan de Fuca:

- Riflemen should have to use either a .50 caliber or .577 caliber rifle as the primary rifle.
- A rifleman should not shoot if the intended target is more than 30 feet from the muzzle of the rifle [to ensure that misses do not occur and to reduce the possibility of a ricochet].
- A rifleman should fire only at a downward angle [because a harpooned whale could surface at the top of a swell while the chase boat was in a position toward the middle of the trough or swell. In that situation, firing a shot might result in the unimpeded travel of the projectile toward the boundary of the MEZ, should the shot miss the whale and water].
- The Makah Whaling Commission should use simulated hunting conditions to document the riflemen's proficiency using rifles actually employed during whale hunting.
- There must be minimum visibility of 500 yards in all directions when it is harpooned (to eliminate problems with the boats entering the 500-yard MEZ due to low visibility).

- Where Highway 112 closely parallels the shoreline, the rifleman on the chase boat should fire at a whale with the rifle pointed away from the shoreline if the harpooned whale is within 500 yards of the shoreline.
- The diver on the chase boat should be the designated safety officer for the hunt (because the diver does not have another assignment or responsibility until others kill the whale). The diver should be assigned the sole task of monitoring safety conditions within the MEZ to ensure that the rifleman has a clear field of fire.

In 2004, NMFS contracted experts in military firearms training and technological capabilities to review all relevant public safety issues surrounding the conduct of Makah whale hunts, including the information presented in Kline (2001) and Beattie (2001). These experts confirmed the selection of the .50 caliber rifle as the weapon of choice, over the .577 A-Square, because it combines high power with consistently manufactured, commercial grade ammunition (Graves et al. 2004; Graves and Hazelton 2004). Graves et al. (2004) also conducted ricochet and range experiments on still water using similar weapons. They concluded that shots fired below an elevation angle of -6.2° (that is, with the gun pointed downward at the target in the water and below the shooter's horizon by at least 6.2 degrees) will ensure a very low probability of ricochets. Moreover, the probability of a ricochet declines to zero when shots are kept below the elevation angle, but wave height is greater, because wave changes in the surface geometry vastly reduce the surface area (i.e., wave tops) that can cause ricochets (Graves et al. 2004). Graves et al. (2004) also recommended that all persons near the hunt wear eye and double ear protection (i.e., earplugs and shooting muffs) when firing the rifle. This recommendation might conflict with those of Beattie (2001), which require the rifleman to communicate verbally with the safety officer.

Some aboriginal subsistence whalers use shoulder guns to deliver explosive projectiles intended to kill a whale that has already been struck with a harpoon with an attached line and floats. The explosive projectile detonates after penetrating the whale, and the explosion should kill it. A shoulder gun is generally a smooth bore seven or eight gauge weapon fired from the shoulder like a shotgun. Like a shotgun, it uses gunpowder to launch the projectile at the target. Although Øen (1995) recommended development of a shoulder gun capable of delivering a penthrite grenade, no shoulder guns adapted for this projectile currently exist.

Explosive Projectiles (Grenades)

Explosive projectiles for killing whales may contain either black powder or penthrite. Currently only darting guns have been modified to accommodate penthrite projectiles. The projectile is aimed at the neck and thoracic regions and kills the whale by damaging internal organs, either with the shock wave of the blast or tearing of tissues and hemorrhage caused by shrapnel (O'Hara et al. 1999). For each type of grenade, whether used with a hand-thrown darting gun or a shoulder gun, the grenades are very similar in shape (Øen 1995).

Black powder grenades are approximately 11.2 inches (28 cm) long and 0.9-inch (.2 cm) in diameter. The black powder in the grenade is a mixture of sulfur, saltpeter, and charcoal (Øen 1995; O'Hara et al. 1999), which explodes when ignited. Alaska Eskimos have used black powder grenades in hand-thrown darting guns in the bowhead hunt for approximately 150 years (Alaska Eskimo Whaling Commission 2006) and more recently in shoulder guns. The grenade's time-delayed fuse is designed to ignite in the barrel and detonate the grenade after it enters the whale's body. If the gun jams or the projectile detonates prematurely, it can cause a dangerous explosion on the whaling vessel (O'Hara et al. 1999). Øen reported that 18 percent of the black powder grenades malfunctioned (1995) in the 1984 to 1986 bowhead hunting seasons, though he did not describe the nature of the malfunctions. Black powder burns slowly, and less than half converts to gas (North Atlantic Marine Mammal Commission 2004). Black powder is also very sensitive to friction and electricity. Several accidents have occurred during production and the use of black powder. It is now classified as explosive, and storage and sale are entirely banned in some communities (North Atlantic Marine Mammal Commission 2004).

The penthrite grenade uses penthrite as the explosive material. A penthrite grenade consists of a tubular body that holds a charge (the penthrite), has a head with a firing mechanism, and contains safety devices. The time-delayed fuse on the penthrite grenade ignites after the grenade penetrates the whale, in contrast to the black powder grenade, which ignites in the barrel, reducing the risk of an explosion on the whaling vessel (Øen 2000). Numerous other grenade safety features are intended to prevent injury to whalers (Øen 2000). Penthrite combusts nearly instantaneously and provides substantially larger explosive power than black powder (Øen 2000). Reflecting use of advanced design and materials, a single penthrite projectile currently costs $1,000 (IWC 2007a).

The Alaska Eskimo Whaling Commission Weapons Improvement Program Committee worked with cooperating scientists from Norway on the design, testing, and manufacture of penthrite between 1987 and 1998. Participants' intent was to adapt penthrite grenades used in commercial

whaling for use in the darting guns used by Alaska whalers (Alaska Eskimo Whaling Commission 2006). In 2004, the Alaska Eskimo Whaling Commission, working in conjunction with the Norwegian government, developed a safety handbook and training video regarding the function and proper use of the penthrite projectile. Whaling captains must complete training and obtain certification in the use of the penthrite projectile and modified darting gun barrel.

It is uncertain whether penthrite grenades would be readily available for a Makah Tribe gray whale hunt. The costs have risen recently due to difficulty with the manufacture and shipping of a component of the fuse head/safe and arming mechanism. A Swedish manufacturer who supplied the fuse component closed shop in 2003. Although a similar French-made component would work as a replacement, the French manufacturer has been unable to obtain necessary export authorizations (Alaska Eskimo Whaling Commission 2006; IWC 2007a). If the fuse component must come from a new supplier in Norway, the production and the new product would require detailed and costly control and testing before being available for the safe and arming mechanisms used by aboriginal subsistence whalers (Alaska Eskimo Whaling Commission 2006).

3.16 Human Health

3.16.1 Introduction

3.16.2 Regulatory Overview

The Makah Tribal Council has developed a health code in recognition of the need for delivery of comprehensive health services to tribal members and their families. Title I, Policy, states that these codes apply uniformly throughout the Makah Indian Reservation to help tribal members achieve the health status of the general population and to increase effectiveness and efficiency of services offered within the reservation. The Makah Health Code offers a framework for decision-making related to health issues. None of the provisions relates to subsistence use of whales.

3.16.3 Existing Conditions

3.16.3.1 Nutritional and Health Benefits from Consuming Whale Food Products and Other Traditional Subsistence Foods

Historically, whale oil and whale products were important nutritional components of the diet of the Makah Tribe. They also played an important role in the Makah's cultural and spiritual well being (Section 3.10.3.5, Contemporary Makah Society, for a description of Makah Tribe's subsistence consumption). Whale oil, in particular, was widely used, because it did not spoil as quickly as whale meat. Early archaeological studies indicated that as much as 84 percent of the Makah diet was whale meat, oil, and other food products (Renker 2002). The Makah currently and historically have used the following whale products (Renker 2002): raw blubber, oil rendered

from whale blubber, organ meats (e.g., brain, heart) and muscle tissue from all parts of the whale (including around the jaw and under the eye). They use the rich oil for cooking, flavoring foods, and as a condiment (Renker 2002).

The introduction of the western diet (i.e., refined sugar and flour, beef, vegetable oil and lard, etc.) and the reduction in subsistence foods have been linked to poor health in Native American populations (Budowski 1988; Simopoulos 1999; Renker 2002) and also in Alaska Eskimos (IWC 1979b; Ebbesson et al. 2005a). The Makah Tribe, however, continues to consume large quantities of marine fish and shellfish. On average, Makah households consume 126 pounds per year (156 grams per day) of finfish and shellfish (Renker 2002).

Historically, the Makah consumed large quantities of whale products and fish (Renker 2002) and this reliance on marine foods resulted in a diet with a narrow nutritional base. General nutritional components of whale meat[10] and other protein sources are compared in Table 3-43.

Nutritional data are from the United States Department of Agriculture Nutrient Database (United States Department of Agriculture 2005). With the exception of whale oil and blubber, whale products have a similar nutritional profile (e.g., calories, protein, fat, and calcium) as other finfish, shellfish, wild game, and domestic meats. Whale oils and blubber provide a richer source of energy (calories) than other food types listed in Table 3-43, and whale meat has higher levels of iron. Whale oil is a good source of vitamin E (an antioxidant), and whale meat is a good source of selenium; both of which may play a role in protecting against the toxicity of certain seafood contaminants like mercury (Arnold and Middaugh 2004). Overall, however, it is difficult to compare essential nutrients and minerals of whale products directly to other protein sources because the former have not been studied extensively.

In addition to providing protein and energy, marine foods also contain essential vitamins, minerals, and lipids. Essential lipids include polyunsaturated fatty acids, which are important components of both whale and fish oils and are high in omega-3 polyunsaturated fatty acids (e.g., alpha-linolenic acid, eicosapentaenoic acid, docosapentaenoic acid, and docosahexenoic acid). These essential fatty acids improve or prevent symptoms associated with coronary heart disease, hypertension, Type 2 diabetes, kidney disease, rheumatoid arthritis, Crohn's disease, and

10 Whale food products nutritional information shown in Table 3-43 includes data for bowhead and minke whales (both baleen whales like the gray whale) and beluga (a toothed whale distinct from baleen whales).

chronic obstructive pulmonary disease (Budowski 1988; Simopoulos 1999; Simopoulos 2002; Holub and Holub 2004; Ebbesson et al. 2005b; Ebbesson et al. 2005b c; Reynolds et al 2006).

The human body does not naturally produce essential polyunsaturated fatty acids, so they must come from food consumed. Polyunsaturated fatty acids exist in a variety of food sources including fish oils, vegetable oils (e.g., soybean), nuts, and meat from terrestrial or marine mammals (e.g., whales), and vitamin supplements (National Academy of Sciences 2005).

Studies of subsistence populations that consume higher quantities of seafood than the general United States population, and consequently ingest higher levels of omega-3 fatty acids, suggest that these populations have lower rates of heart disease than the general population (Dewailly et al. 2001; McLaughlin et al. 2005). For example, McLaughlin et al. (2005) found that Alaska Natives with high dietary intake of polyunsaturated fatty acids (evidenced by higher tissue levels of polyunsaturated fatty acids) had lower heart disease mortality than non-natives.

Ebbesson et al. (2005b) measured fatty acid concentrations in Norton Sound (Alaska) Eskimos and screened for insulin resistance and diabetes. Findings indicated that high consumption of omega-3-fatty acids positively affected insulin sensitivity and glucose tolerance. Osterud et al. (1995) studied healthy men and women given supplements of oils (15 milliliters [mL]/day) from the blubber of seal, cod liver, and Minke whale for 10 weeks. Supplementation of the diet, especially with whale oil, had beneficial effects on biological measures associated with cardiovascular and thrombotic diseases.

Reynolds et al. (2006) reported on the high levels of omega-3 fatty acids in bowhead whale blubber consumed by Alaska Natives. The high levels of omega-3-fatty acids in the blubber and other marine mammal food products confer considerable health benefits on subsistence consumers and are important in the treatment or prevention of insulin resistance, diabetes, elevated blood pressure, cardiovascular disease, arthritis, and stroke (Reynolds et al. 2006).

Seafood diets containing essential polyunsaturated fatty acids are also beneficial for women at risk for hypertension during pregnancy (Popeski et al. 1991) and may prolong gestation and increase birth weight (Olsen et al. 1993; Grandjean et al. 2001). There was, however, a limit to the observed positive effects on birth weight, as researchers did not find increased weights at higher intake levels (greater than three fish meals per week) of essential fatty acids (Olsen et al. 1993; Grandjean et al. 2001). The National Academy of Sciences (2005) recommends dietary intake of polyunsaturated fatty acids (i.e., alpha-linolenic acids) at 0.5 grams/day (infants), 0.7 to 0.9 grams/day (children), and 1.0 to 1.6 grams/day (adults).

TABLE 3-43. USDA NUTRITIONAL VALUES FOR SELECTED FOOD TYPES

FOOD TYPE	ENERGY (CALORIES /100G)	PROTEIN (G/100G)	CALCIUM (MG/100G)	IRON (MG/100G)	SELENIUM (µG/100G)	VITAMIN A (IU/100G)	VITAMIN E (MG/100G)	VITAMIN B6 (MG/100G)	VITAMIN B12 (µG/100G)	TOTAL FAT (G/100G)	TOTAL SATURATED FAT (G/100G)	TOTAL MONO-UNSATURATED FAT (G/100G)	TOTAL POLY-UNSATU-ATED FAT (G/100G)
Whale													
Beluga meat, raw	111	26.5	7	25.9	36.5	340	n/a	0.05	2.59	0.5	0.092	0.337	0.025
Beluga oil	900	n/a	n/a	n/a	3.0	2310	8.27	n/a	n/a	100	14.49	54.19	10.8
Beluga eyes	291	19.6	n/a	n/a	n/a	1870	n/a	n/a	n/a	23.3	n/a	n/a	n/a
Beluga flipper, raw	271	19.0	11	2.8	n/a	930	n/a	n/a	n/a	21.7	n/a	n/a	n/a
Beluga liver, raw	117	18.4	11	n/a	n/a	22100	n/a	n/a	n/a	3.9	n/a	n/a	n/a
Bowhead skin and subcutaneous fat [1]	470	12.6	5	n/a	n/a	750	n/a	n/a	n/a	46.1	6.56	28.12	7.97
Bowhead, meat [2]	n/a	26.2 [2]	n/a	14.1 [2]	n/a	330 [2]	n/a	n/a	n/a	2.6 [2]	n/a	n/a	n/a
Bowhead oil	900	n/a	n/a	n/a	n/a	2810	n/a	n/a	n/a	100	n/a	n/a	n/a
Bowhead, blubber	870	0.4	n/a	0.5	n/a	n/a	n/a	n/a	n/a	96.5	n/a	n/a	n/a
Minke skin and subcutaneous fat, raw [1]	n/a	n/a	n/a	n/a	6.28[4]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Minke lean meat [3]	116	24.8	4.1	8.54	0.21[4]	n/a	n/a	n/a	n/a	1.2	18.5	49.2	21
Fish and Shellfish													

Food Type	Energy (calories /100g)	Protein (g/100g)	Calcium (mg/100g)	Iron (mg/100g)	Selenium (µg/100g)	Vitamin A (IU/100g)	Vitamin E (mg/100g)	Vitamin B6 (mg/100g)	Vitamin B12 (µg/100g)	Total Fat (g/100g)	Total Saturated Fat (g/100g)	Total Mono-unsaturated Fat (g/100g)	Total poly-unsatu-ated Fat (g/100g)
Salmon, Chinook, raw	179	19.9	26	0.3	36.5	453	1.22	0.4	1.3	10.4	3.1	4.4	2.8
Salmon, coho, wild, raw	146	21.6	36	0.6	36.5	100	0.65	0.55	4.17	5.9	1.26	2.13	1.99
Salmon, sockeye, raw	168	21.3	6	0.5	33.7	192	n/a	0.19	5.0	8.6	1.5	4.13	1.88
Halibut, raw	110	20.8	47	0.8	36.5	157	0.85	0.34	1.18	2.3	0.33	0.75	0.73
Crab, Dungeness, raw	86	17.4	46	0.4	37.1	90	n/a	0.15	9.0	1.0	0.12	0.17	0.32
Wild Game													
Elk, meat, raw	111	23.0	4	2.8	9.8	n/a	n/a	n/a	n/a	1.5	0.53	0.36	0.30
Deer, meat, raw	120	23.0	5	3.4	9.7	n/a	0.2	0.37	6.31	2.4	0.95	0.67	0.47
Domestic Meat													
Beef, composite of trimmed retail cuts, trimmed to 1/2-inch fat, prime, raw	169	21.0	6	2.3	18.7	n/a	n/a	0.43	3.25	8.8	3.41	3.82	0.37
Chicken, breast, meat and skin, raw	172	20.9	11	0.7	16.6	83	0.31	0.53	0.34	9.3	2.66	3.82	1.96

n/a = Data are not available. [1] This type of tissue is referred to by several different names (population specific), including maktak, muktuk or mattak.

(g) = grams (mg) = milligrams (ug) = micrograms (IU) = international units Sources: USDA National Nutrient Database (http://www.nal.usda.gov/fnic/foodcomp/search/); [2] IWC 1979b; [3] Suzuki 1993; [4] Hansen et al 1990

In summary, the many benefits associated with consuming marine seafood products, including whale, are well documented in the scientific literature. Marine mammal food products are rich with many of the same nutrients found in commonly consumed seafood products (fish and shellfish), and, in the case of some minerals and vitamins, marine mammal products provide an even richer source.

3.16.3.2 Environmental Contaminants in Gray Whales

While there is documented evidence of the beneficial effects of the nutrients in marine foods, persistent and potentially toxic chemicals also occur and are documented in the diets of native subsistence populations (Verbrugge and Middaugh 2004; Arnold and Middaugh 2004). In considering the type and amount of chemicals the Makah could ingest by consuming whale products, their continuing exposure to these contaminants is also a result of their ongoing, high consumption of other seafood products, including finfish and shellfish. Numerous researchers have documented concentrations of organic and inorganic contaminants in the tissues (muscle, organs, etc.) of the gray whales proposed for hunting by the Makah (Varanasi et al. 1994; Jarman et al. 1996; Krahn et al. 2001; Mendez et al. 2002; Ruelas-Inzunza and Paez-Osuna 2002; Tilbury et al. 2002; Ruelas-Inzunza et al. 2003; Dehn et al 2006a. Dehn et al 2006b).

Whale habitat and migration patterns should be considered when evaluating contaminant concentrations because these factors may affect the magnitude of contaminant concentrations (Houde et al 2005). The concentration of contaminants in whale tissues will also vary based on the feeding habits of the whale (Houde et al 2005) and whether the whale is freshly killed or stranded. Gray whales targeted by the Makah filter their food using the bony baleen plates located in their mouths (Vaughn 1978). Typically, this food consists of plankton and other micro- and macrofauna (Vaughn 1978). The levels of contaminants it contains are often lower because of the lesser position of these fauna in the overall marine food chain. Therefore, data on contaminant concentrations in whales that use other feeding strategies, such as toothed whales feeding on larger, older fish that accumulate greater levels of chemicals, are not presented here because they have less relevance to the types of whale (or associated contaminant levels) that are hunted by the Makah (i.e., gray whales). Distinctions are made between contaminant levels in freshly harvested versus stranded whales, because they are often lower in freshly harvested whales than in stranded whales (Rugh et al 1999; Krahn et al 2001).

As previously discussed, the Makah Tribe historically consumed large quantities of whale meat and blubber and, to a lesser extent, other portions of the whale (Renker 2002). In the past decade, the

Makah have consumed much smaller quantities of whale products (i.e., on a total biomass basis) compared with historical times. The animals consumed include both stranded as well as one freshly harvested animal following the 1999 hunt. The remainder of this section focuses on describing chemical concentrations measured in whale meat (muscle) and blubber because these are the parts of the whale that are most often consumed. A summary of contaminant concentrations in gray whale blubber and muscle tissue is presented in Table 3-44. Organic compounds (e.g., PCBs, pesticides, and dioxins) are associated predominantly with whale blubber because these compounds are lipophilic (i.e., easily dissolve in lipids or fat). Mean blubber concentrations of chlordane, DDTs, dieldrin, hexachlorobenzene, mirex, and PCBs in gray whales collected during subsistence hunts (Russian) in the Bering Sea in 1994 (Krahn et al. 2001 and Table 3-44) were 150, 150, 77, 230, 1.6, and 630 micrograms per kilogram (µg/kg) wet weight, respectively. These concentrations tended to be two to three times lower than those measured in stranded gray whales collected over the 1990s in Washington (Table 3-44), indicating that contaminant concentrations may be higher in diseased or aged whales, or in animals in poor nutritional health, that may strand in the Puget Sound region (Table 3-44). Concentrations of PCBs (1,200 µg/kg wet weight) and DDTs (520 µg/kg wet weight) in blubber of the whale caught by the Makah Tribe in 1999 were, however, higher than the mean levels reported in stranded gray whales or in those hunted in the Bering Sea.

Concentrations of organic contaminants in whale blubber typically were higher or comparable to those in other tissues (e.g., muscle, liver, kidney, or brain) (Krahn et al. 2001). Tissue biopsy concentrations (DDT, hexachlorobenzene, and PCBs), collected from Washington State waters using a dart collection method on live whales, tended to be lower than those measured from subsistence or stranded samples (Table 3-44). Jarman et al. (1996) found mostly non-detected concentrations (less than 0.002 µg/kg wet weight) of dioxins in two gray whales measured off California. The concentrations of organic compounds in gray whales typically were lower than in other whale species (Varanasi et al. 1994; Jarman et al. 1996; Krahn et al. 2001; Tilbury et al. 2002).

Few measurements of metal concentrations are available for blubber or muscle of gray whales, and those available are from stranded whales (Mendez et al. 2002; Ruelas-Inzunza and Paez-Osuna 2002; Rueles-Inzunza et al. 2003). Metal concentrations typically are higher in muscle tissue compared to whale blubber (Table 3-45). Mean concentrations of metals in muscle tissue from various studies range from 0.4 to 0.86 cadmium, 3.1 to 4.1 copper, 305 to 1,009 iron, 0.6 to 1.11 lead, 0.33 to 0.8 manganese, 0.145 mercury, 1.39 nickel, and 120 to 279 zinc µg/kg dry weight. Methyl mercury comprised approximately 75 percent of the total mercury measured in gray whale

muscle (Ruelas-Inzunza et al. 2003). Metal concentrations typically were higher in liver and kidney tissues than in muscle or blubber tissues (Mendez et al. 2002; Ruelas-Inzunza and Paez-Osuna 2002; Ruelas-Inzunza et al. 2003). Metal concentrations were not reported for the whale the Makah Tribe caught in 1999.

Since 1998, Chukotka Natives have been reporting a number of hunted whales from the Bering Sea that exhibit a strong medicinal odor, referred to as the 'stinky whale' phenomenon (IWC 2007b). Tissues from these whales have been deemed inedible by hunters. No known cause has been found, but research is ongoing to determine whether the smells are caused by chemical contaminants, disease, or other factors. At the IWC annual meeting in 2006, the United States and the Russian Federation reported on progress with their 2005 investigations. Samples were obtained from two stinky whales killed in the 2005 Chukotka Native hunts; data included chemical and toxicological analyses. These data will be available, and they will be reported on at the IWC annual meeting in 2007. At the 2006 meeting, Mexico also reported on a related gray whale study started on winter range breeding and calving grounds in March 2006, in response to inquiries about potential chemical pollution in Mexican waters. Mexico obtained breath samples for chemical analyses from free swimming whales and will present analyses of those data at the IWC annual meeting in 2007. Similar data were to be collected 2007 from free swimming whales off the Washington coast and reported on at IWC (IWC 2007b).

TABLE 3-44. CONCENTRATIONS OF ORGANIC COMPOUNDS MEASURED IN FRESHLY HARVESTED AND STRANDED GRAY WHALE TISSUES

ORGANIC COMPOUND	CONCENTRATION IN BLUBBER (µG/KG-WW)[1]	CONCENTRATION IN MUSCLE (µG/KG-WW)[1]	COMMENT	REFERENCE
Chlordane	150 ± 21	1± 0.2	Tissue from subsistence hunts (Russian Bering Sea 1994)	Krahn et al. 2001; Tilbury et al. 2002; Varanasi et al. 1994
	340 ± 120	NA	Tissue collected from stranded whales (1988 to 1991)	
DDTs	130 ± 26	NA	Tissue biopsies from live whales in WA State (1996 to 1998)	Krahn et al. 2001; Tilbury et al. 2002; Varanasi et al. 1994; Ylitalo et al. 1999
	150 ± 32	1± 0.2	Tissue from subsistence hunts (Russian Bering Sea 1994)	
	450 ± 140	NA	Tissue collected from stranded whales (1988 to 1991)	
	240 ± 44	NA	Tissue collected from stranded whales (1999)	
	520	3.2	Tissue from the Makah whale hunt (1999)	
Dieldrin	77 ± 14	NA	Tissue from subsistence hunts (Russian Bering Sea 1994)	Krahn et al. 2001; Varanasi et al. 1994
	160 ± 72	NA	Tissue collected from stranded whales (1988 to 1991)	
Hexachlorobenzene	100 ± 41	NA	Tissue biopsies from live whales in WA State (1996 to 1998)	Krahn et al. 2001; Tilbury et al. 2002; Varanasi et al. 1994
	230 ± 32	2 ± 1	Tissue from subsistence hunts (Russian Bering Sea 1994)	
	350 ± 130	NA	Tissue collected from stranded whales (1988 to 1991)	
	510 ± 130	NA	Tissue collected from stranded whales (1999)	
Mirex	1.6 ± 0.2	NA	Tissue from subsistence hunts (Russian Bering Sea 1994)	Krahn et al. 2001; Varanasi et al. 1994
	14 ± 4.6	NA	Tissue collected from stranded whales (1988 to 1991)	
PCBs	220 ± 42	NA	Tissue biopsies from live whales in WA State (1996 to 1998)	Krahn et al. 2001; Tilbury et al. 2002; Varanasi et al. 1994; Ylitalo et al. 1999
	630 ± 82	9 ± 2	Tissue from subsistence hunts (Russian Bering Sea 1994)	
	970 ± 240	NA	Tissue collected from stranded whales (1988 to 1991)	
	600 ± 130	NA	Tissue collected from stranded whales (1999)	
	1200	12	Tissue from the Makah whale hunt (1999)	
PCDDs/PCDFs	<0.002	NA	Concentrations measured in tissue (1987 to 1988)	Jarman et al. 1996
2,3,7,8-TCDD	<0.002 – 0.003	NA	Concentrations measured in tissue (1987 to 1988)	
2,3,7,8-TCDF				

1 Values represent the mean ± the standard error of the mean µg/kg – micrograms per kilogram

ww wet weight

NA Not Available

DDT Dichloro-Diphenyl-Trichloroethane

PCB Polychlorinated Biphenyl

PCDD Polychlorinated Dibenzodioxin

PCDF Polychlorinated Dibenzofuran

TCDD Tetrachlorodibenzodioxin

TCDF Tetrachlorodibenzofuran

Source: see reference column.

TABLE 3-45. CONCENTRATIONS OF METAL/METALLOID(S) MEASURED IN FRESHLY HARVESTED AND STRANDED GRAY WHALE TISSUES

METAL/METALLOID	CONCENTRATION IN BLUBBER (MG/KG-DW)[1]	CONCENTRATION IN MUSCLE (MG/KG-DW)[1]	COMMENT	REFERENCE
Cadmium	0.16	0.86 + 1.05	Tissue collected from stranded whales (1999)	Mendez et al. 2002
	NA	0.4 + 0.2	Tissue collected from stranded whales (1999)	Ruelas-Inzunza and Paez-Osuna 2002
	NA	0.02 + 0.002	Tissue collected from harvested whales (2001)	Dehn et al. 2006
Copper	1.72 ± 0.90	3.10 + 1.65	Tissue collected from stranded whales (1999)	Mendez et al. 2002
	NA	4.1 + 1.7	Tissue collected from stranded whales (1999)	Ruelas-Inzunza and Paez-Osuna 2002
	NA	3.17 + 0.62	Tissue collected from harvested whales (2001)	Dehn et al. 2006
Iron	28.9 ± 14.7	305 + 217	Tissue collected from stranded whales (1999)	Mendez et al. 2002
	NA	1009 + 802	Tissue collected from stranded whales (1999)	Ruelas-Inzunza and Paez-Osuna 2002
Lead	1.06 ± 0.73	1.11 + 0.69	Tissue collected from stranded whales (1999)	Mendez et al. 2002
	NA	0.6 + 0.4	Tissue collected from stranded whales (1999)	Ruelas-Inzunza and Paez-Osuna 2002
Manganese	0.44 ± 0.13	0.33 + 0.22	Tissue collected from stranded whales (1999)	Mendez et al. 2002
	NA	0.8 + 0.1	Tissue collected from stranded whales (1999)	Ruelas-Inzunza and Paez-Osuna 2002
Mercury	NA	0.145 + 0.082	Tissue collected from stranded whales (1999)	Ruelas-Inzunza et al. 2003
	NA	0.02 + 0.002	Tissue collected from harvested whales (2001)	Dehn et al. 2006
Methyl mercury	NA	0.109 + 0.040	Tissue collected from stranded whales (1999)	Ruelas-Inzunza et al. 2003
Nickel	1.10 ± 0.60	1.39 + 0.79	Tissue collected from stranded whales (1999)	Mendez et al. 2002
Selenium	NA	0.19 + 0.01	Tissue collected from harvested whales (2001)	Dehn et al. 2006
Silver	NA	0.004 + 0.0001	Tissue collected from harvested whales (2001)	Dehn et al. 2006
Zinc	16.0 ± 4.89	120 + 34.4	Tissue collected from stranded whales (1999)	Mendez et al. 2002
	NA	279 + 104	Tissue collected from stranded whales (1999)	Ruelas-Inzunza and Paez-Osuna 2002
	NA	39.47 + 4.53	Tissue collected from harvested whales (2001)	Dehn et al. 2006

1 Values represent the mean ± the standard error of the mean dw = dry weight µg/kg = micrograms per kilogram mg/kg = milligrams per kilogram
NA Not Available Source: see reference column

3.16.3.3 Exposure to Food-Borne Pathogens

Millions of cases of food-borne illness occur each year in the United States, and causes include consumption of subsistence products (Himelbloom 1998). Humans can be exposed to several types of pathogenic bacteria (e.g., *Clostridium botulinum*) during the harvesting, processing, preparation, and consumption of marine foods (e.g., fish, shellfish, or whale meat). There are reports of food-borne illness in Alaska Native subsistence communities where residents frequently consume whale meat and blubber, e.g., cases of botulism and salmonellosis in Alaska Natives consuming hunted or drift whales (Bender et al. 1972; Shaffer et al. 1990; McLaughlin et al. 2004; Sobel et al. 2004). From 1990 to 2000, 58 botulism events occurred in Alaska with 103 persons affected (Sobel et al. 2004). In 49 of these events, the contaminated food was identified as homemade Alaska Native foods consisting of fermented aquatic animal tissues, including whale skin or blubber (Sobel et al. 2004). The most common forms of food-borne pathogens identified when subsistence populations consume improperly cooked or handled food products (not just gray whale products) are characterized in Table 3-46. Like other subsistence cultures, the harvesting and consumption of ill-prepared or improperly stored gray whale products represent a potential pathway for exposure of the Makah Tribe to food-borne pathogens.

The Makah Tribe hunted and harvested a gray whale in 1999. The following is an account Renker (2002) describes the processing of the whale caught in 1999. The account illustrates some potential health-related issues.

Some 1,400 Makahs welcomed the whale to Front Beach in Neah Bay, and paid honor to the great creature. Many Makahs ate raw blubber right on the spot, and then began the task of preparing the food and resources that the whale contributed to the Makah people. Butchering the whale proved a huge task for the Makah people. Lack of familiarity with the gray whale anatomy, tools which were not well adapted for gray whale meat and blubber, and logistical issues presented immediate obstacles for the butchering process which began on Front Beach. Some confusion also centered on whale parts other than meat and blubber. Most importantly, Makah were able to overcome these problems and continue with the job of processing the whale.

TABLE 3-46. CHARACTERISTICS OF FOOD-BORNE PATHOGENS[1]

PATHOGEN	SOURCE	PREFERRED ENVIRONMENT	SYMPTOMS
Clostridium botulinum	Soil and aquatic environments	Temperature range: 3.3 to 50 °C (38 to 122 °F) pH range 4.6 to 9.0 Salt tolerance: 5 to 10 percent Oxygen: Strict anaerobe[2]	Symptoms are double vision, paralysis, dizziness, difficulty swallowing, speaking and breathing. Symptoms occur 12 to 72 hours after ingestion.
Enteropathogenic bacteria (Salmonella, Shigella, Escherichia coli, Yersinia and Campylobacter)	Human and animal intestines, feces	Temperature range: 5 to 47 °C (41 to 117 °F) pH range: 4.5 to 9.0 Salt tolerance: 1 to 3 percent Oxygen: Facultative anaerobe[3]	Symptoms are diarrhea, abdominal pain, fever, nausea, dehydration, urinary tract infection, kidney failure. Symptoms occur 6 to 48 hours after ingestion.
Listeria monocytogenes	Humans, animals, vegetation	Temperature range: 2.5 to 44 °C (36 to 111 °F) pH range: 5.0 to 9.5 Salt tolerance: 10 to 30 percent Oxygen: Facultative anaerobe	Symptoms are flu-like, diarrhea, mild fever, stillbirth or spontaneous abortion. Symptoms occur 1 day to weeks after ingestion.
Staphylococcus aureus	Humans and animals	Temperature range: 10 to 45 °C (50 to 113 °F) pH range: 4.5 to 9.3 Salt tolerance: 10 to 20 percent Oxygen: Facultative anaerobe	Symptoms are vomiting, diarrhea, no fever. Symptoms occur 1 to 8 hours after ingestion.

1 The food-borne pathogens in Table 3-46 are provided for general information and do not imply that gray whale products contain all of these pathogenic organisms.

2 Strict anaerobes are bacteria that grow under anaerobic conditions (without oxygen), use anaerobic respiration, and are poisoned by oxygen.

3 Facultative anaerobes are bacteria capable of growing under either aerobic (with oxygen) or anaerobic conditions.

Source: Himelbloom (1998).

In a matter of hours, a flatbed truck had taken what was left of the whale and driven to the Makah Tribe's fish plant, a processing plant with 800 cubic feet of freezer space and a service entrance large enough to allow the flatbed to drive inside. Within 24 hours, Front Beach showed no sign of the momentous event which had happened the previous day. The Makah butchering crew, which included Makahs who had traveled to Alaska to learn the processing techniques, had some assistance from a Native Alaskan. Many people worked to butcher the parts of the whale that had not been distributed to Tribal members on the night of 17 May. In addition to meat and blubber, Makahs interviewed during the Makah Household Survey reported requesting and receiving whale lice, sinew, baleen, brain, and heart. Other Makahs reported that they would have liked to receive liver, cheeks, eyes, and intestines. Some of these items, like whale lice and baleen, are primarily used for ceremonial reasons, while others can be used in tool production or as food. The

bulk of the food products derived from the whale were reserved for the Tribe's celebratory feast, which was to be held on 22 May.

In private homes, people welcomed whale meat, blubber, and other whale parts. Between 17 May and 22 May, some households began to use recipes held in family confidence for decades, and others experimented with techniques used for other sea creatures, like seals and fish.

In summary, pathogenic organisms can and do occur in marine mammal food products, including seals, walrus, dolphins, and whales. Illness has been reported in those who eat these products, though they typically come from consuming either stranded or drift animals, or they result from improper preparation of traditional food products.

3.17 National and International Regulatory Environment

3.17.1 Introduction

The following sections describe national conditions related to the harvest of marine mammals, international conditions related to the harvest of whales, and international conditions related to the pursuit of ceremonial and subsistence practices by indigenous people.

In the United States, take of marine mammals is prohibited (except under certain circumstances, unless the Secretary of Commerce waives the MMPA take prohibition, adopts regulations and issues permits (Section 1.2.3, Marine Mammal Protection Act). Harvest of whales is prohibited by WCA regulations, except for aboriginal subsistence whaling authorized by paragraph 13 of the IWC Schedule (50 CFR 230.2) (Section 1.2.4.2, National Whaling Governance under the WCA). This section reviews past waivers and requests for waiver of the MMPA take prohibition.

Internationally, harvest of whales is regulated by the ICRW (Section 1.2.4.1., International Whaling Governance under the ICRW), which established the IWC as the regulatory body governing whaling (Section 1.2.4.1.1, Functions and Operating Procedures of the IWC). While the IWC initially focused on regulating commercial harvest, from 1982 to 1986 the body phased in a moratorium on commercial whaling to be in effect pending adoption of a revised management scheme. Since that time the parties to the ICRW have attempted to adopt a regulatory regime that would govern commercial harvest; these attempts have been unsuccessful, so the moratorium remains in effect. The ICRW also governs aboriginal subsistence whaling but does not set limits on lethal research on whales. This section examines the whaling that has occurred worldwide since the IWC moratorium, the debates within the IWC over the different types of whaling, the United States' role in those debates, and the potential relationships between the positions and actions of the United States and whaling worldwide.

The ability of indigenous people to pursue ceremonial and subsistence practices has also emerged in recent decades as an international issue. This section examines the pursuit of ceremonial and subsistence practices by indigenous people internationally.

3.17.2 Regulatory Overview

3.17.2.1 Marine Mammal Protection Act

The MMPA take moratorium and the process for waiving the moratorium are described in detail in Section 1.2.3., Marine Mammal Protection Act. In addition to those provisions, Section 109 of the Act preempts state authority governing marine mammals, but includes provisions for the Secretary to waive the take moratorium and return management authority to a state if certain conditions are met.

3.17.2.2 Whaling Convention Act

The WCA is described in detail in Section 1.2.4., Whaling Convention Act.

3.17.2.3 International Convention for the Regulation of Whaling

The ICRW is described in detail in Section 1.2.4.1., International Whaling Governance under the ICRW, in particular its provisions regarding commercial and aboriginal subsistence whaling. In addition, Article VIII of the ICRW authorizes parties to permit scientific whaling, subject to conditions the contracting government thinks fit. Any killing or taking of whales under Article VIII is exempt from the operation of the convention. Article VIII also specifies requirements for reporting on and utilizing (processing and distributing) whales after they are killed for scientific research. While contracting governments must submit scientific research permits to the IWC and its Scientific Committee for review, it is the contracting government that ultimately decides whether to issue a permit.

3.17.2.4 Pelly Amendment

Under the Pelly Amendment (22 USC 1978) to the Fishermen's Protective Act of 1954, when the Secretary of Commerce determines that the nationals of a foreign country are diminishing the effectiveness of an international fishery conservation program (including the IWC's program), the Secretary certifies this fact to the President. The President then has the discretion to ban imports of any products from the offending country “to the extent such prohibition is sanctioned by the World Trade Organization” (22 USC 1978). After making a certification, the Pelly Amendment requires the Secretary of Commerce to periodically review the activities of nationals of the offending country to determine if the reasons for which the certification was made no longer prevail. If so, the Secretary shall terminate the certification. If not, the certification remains

active. (22 U.S.C 1978 (d). A "Pelly Certification" has the potential to dissuade foreign governments from particular activities through a public announcement of their certification and the possibility of trade or non-trade sanctions. As of October 28, 2003, the Secretary had made 36 certifications under the Pelly Amendment, with trade sanctions invoked four times (House Report 108-327, October 28, 2003). Fifteen of the certifications were for whaling activities; no trade sanctions have been imposed based on certifications for whaling activities. Currently Norway, Iceland and Japan remain under active certifications under the Pelly Amendment

3.17.2.5 Packwood-Magnuson Amendment

In 1979 Congress passed the Packwood-Magnuson Amendment to the Magnuson Act of 1976. It requires the Secretary of Commerce to "periodically monitor the activities of foreign nationals that may affect [international fishery conservation programs]," (22 USC 1978(a)(3)(A)) "promptly investigate any activity by foreign nationals that, in the opinion of the Secretary, may be cause for certification," (22 USC1978(a)(3)(B)); and "promptly conclude; and reach a decision with respect to; [that] investigation" (22 USC 1978(a)(3)(C)). If the Secretary of Commerce certifies that "nationals of a foreign country, directly or indirectly, are conducting fishing operations or engaging in trade or taking which diminishes the effectiveness of the International Convention for the Regulation of Whaling," (16 U.S.C. 1821(e)(2)(A)(i)), the Secretary of State must reduce, by at least 50 percent, the offending nation's fishery allocation within the United States' fishery conservation zone (16 USC 1821(e)(2)(B)). Although the Amendment requires the imposition of sanctions when the Secretary of Commerce certifies a nation, it did not alter the initial certification process, except for requiring expedition. It also provided that a certification under the Packwood-Magnuson Amendment also serves as a certification for the purposes of the Pelly Amendment (16 USC 1821(e)(2)(A)(i).

The Packwood-Magnuson Amendment is no longer influential, since no foreign whaling nation currently fishes in United States waters (Buck 1998).

3.17.2.6 International Law Regarding Indigenous People

The United States is not a party to a treaty on indigenous practices. International Labour Organization Convention 169 contains provisions relevant to the rights of indigenous people to use subsistence resources. Article 2 of the Convention provides that governments that are parties are responsible for protecting rights of indigenous people, including actions to promote their cultural rights and "respect for their social and cultural identity, their customs and traditions and their institutions." Article 8 provides that indigenous people shall have the right to retain their

own customs . . . where these are not incompatible with fundamental rights defined by the national legal system." Article 8 further provides that "[p]rocedures shall be established . . . to resolve conflicts which may arise in the application of this principle." This Convention, however, does not govern United States practice. The Convention has only 12 parties, and the United States is not one of them.

The United Nations Draft Declaration on the Rights of Indigenous People also has several relevant provisions. Article 3 provides that "[i]ndigenous people have the right of self-determination" and that "[b]y virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development." Article 21 provides that indigenous people "have the right to maintain and develop their political, economic and social systems, to be secure in the enjoyment of their own means of subsistence and development, and to engage freely in all their traditional and other economic activities." Article 26 provides that indigenous people

> have the right to own, develop, control and use the lands and territories, including to total environment of the lands, air, waters, coastal seas, sea-ice, flora and fauna and other resources which they have traditionally owned or otherwise occupied or used. This includes the right to the full recognition of their laws, traditions and customs, land-tenure systems and institutions for the development and management of resources.

The United States, through the representative of New Zealand, expressed serious reservations to the draft declaration:

> The representative of New Zealand, speaking also on behalf of Australia and the United States, said those countries could not accept the adoption of a text that was confusing, unworkable, contradictory and deeply flawed. For example, the Declaration's reference to self-determination could be misrepresented as conferring a unilateral right of self-determination and possible secession, thus threatening the political unity, territorial integrity and stability of existing Member States, she said. . . . The Declaration's provisions on lands and resources would be "unworkable and unacceptable." (United Nations 2007)

The declaration remains a draft and has not been adopted by the United Nations General Assembly.

3.17.3 Existing Conditions

3.17.3.1 Waivers of the MMPA Take Moratorium

There have been few waivers of the MMPA take moratorium since passage of the MMPA (Bean 1997). This section examines past instances in which waiver of the MMPA take moratorium has been considered.

With passage of the MMPA and preemption of state management authority, the State of Alaska sought a return of management authority for 10 marine mammal species under Section 109 of the MMPA. In 1976 the Secretary of Interior returned management authority for walruses to Alaska (41 FR 14373, April 5, 1976). The Secretaries of Interior and Commerce conditionally approved Alaska's request for the other nine species in 1979 (44 FR 2540 and 2547, January 11, 1979). Alaska Natives challenged the state's ability to regulate their hunts for these species under the returned authority and prevailed in district court (*People of Togiak v. United States* 1979). In response to the court's decision Alaska returned authority for walruses to the federal government and stated its intention not to pursue management authority over the remaining species (44 FR 45565, August 2, 1979). Congress reacted by revising Section 109 to, among other things, allow financial assistance for states to develop management programs, as well as implement them. No state has sought management authority over marine mammals since Alaska's request.

In 1975 a fur importer, the Fouke Company, sought a waiver and permit to allow importation of baby fur seal skins from South Africa. NMFS granted the waiver in 1976 conditioned on harvest of the seals in South Africa not exceeding a certain level for the year. While Fouke's application for a permit was pending, it became known that the harvest level had been exceeded, so no permit was issued. Fouke applied for a permit to import skins from the following year's harvest, which NMFS granted. A federal circuit court ultimately invalidated the waiver and regulations because NMFS' decision did not meet MMPA requirements (the skins were from seals that were less than eight months old and nursing at the time of taking) (*Animal Welfare Institute v. Kreps*, 1977).

In 1985 the Safari Club International petitioned the Secretary of Commerce to adopt a rule regarding waiver of the moratorium that would include, among other provisions, a requirement that NMFS review the status of marine mammals every five years, and whenever a waiver was proposed would make a final determination within two years of the proposal. In denying this petition, NMFS stated its belief that "administrative resources can best be utilized if waiver proceedings are initiated only when there is an indication that a waiver may be appropriate or when a specific proposal is under consideration" (51 FR 16085, April 30, 1986).

NMFS waived the moratorium and published regulations governing the take of Dall's porpoise in the Japanese fishery in the Bering Sea and North Pacific in 1987 (52 FR 19,874, May 28, 1987). NMFS did not waive the moratorium and publish regulations, however, for fur seals and other marine mammals that would be taken in the fishery because of insufficient information. In invalidating NMFS' waiver and regulations, the court found that NMFS could not authorize a

fishery it knew would take marine mammals not covered by the waiver and regulations (*Kokechik Fisherman's Association v. Secretary of Commerce,* 1988).

3.17.3.2 Worldwide Whaling

The following discussion describes commercial, scientific, and aboriginal subsistence whaling worldwide within the IWC context, focusing in particular on the United States' position and role in the international debates. Tables 3-47 to 3-49 and Figures 3-15 to 3-17 depict the harvest in commercial, scientific and aboriginal subsistence whaling conducted under IWC auspices since the commercial whaling moratorium became effective. Commercial whaling declined dramatically then ceased following the moratorium, and has grown steadily since the 1993/1994 season. Scientific whaling has increased steadily since 1985. Aboriginal subsistence whaling has remained fairly steady, increasing slightly since 1987.

TABLE 3-47. COMMERCIAL WHALING CATCHES SINCE 1985 (TAKEN UNDER OBJECTION TO THE MORATORIUM)

	Nation	Area	Sperm	Brydes	Minke	Total
1985/86	USSR (pelagic)	SH	0	0	3,028	3,028
	Japan (pelagic)	SH	0	0	1,941	1,941
	Total		0	0	4,969	4,969
1986 (86/87)	Norway (small type)	NA	0	0	379	379
	Japan (coastal)	NP	200	2	311	513
	Japan (Bonin Islands)	NP	0	315	0	315
	USSR (pelagic)	SH	0	0	3,028	3,028
	Japan (pelagic)	SH	0	0	1,941	1,941
	Total		200	317	5659	6,176
1987 (87/88)	Norway (small type)	NA	0	0	373	373
	Japan (coastal)	NP	188	11	304	503
	Japan (Bonin Islands)	NP	0	306	0	306
	Total		188	317	677	1,182
1993 (93/94)	Norway (small type)	NA	0	0	157	157
1994 (1994/95)	Norway (small type)	NA	0	0	206	206
1995 (1995/96)	Norway (small type)	NA	0	0	218	218
1996 (1996/97)	Norway (small type)	NA	0	0	388	388
1997 (1997/98)	Norway (small type)	NA	0	0	503	503
1998 (1998/99)	Norway (small type)	NA	0	0	625	625
1999 (1999/00)	Norway (small type)	NA	0	0	591	591
2000 (2000/01)	Norway (small type)	NA	0	0	487	487
2001 (2001/02)	Norway (small type)	NA	0	0	552	552
2002 (2002/03)	Norway (small type)	NA	0	0	634	634
2003 (2003/04)	Norway (small type)	NA	0	0	647	647
2004 (2004/05)	Norway (small type)	NA	0	0	544	544
2005 (2005/06)	Norway (small type)	NA	0	0	639	639

Source: IWC available at http://www.iwcoffice.org/_documents/table_objection.htm

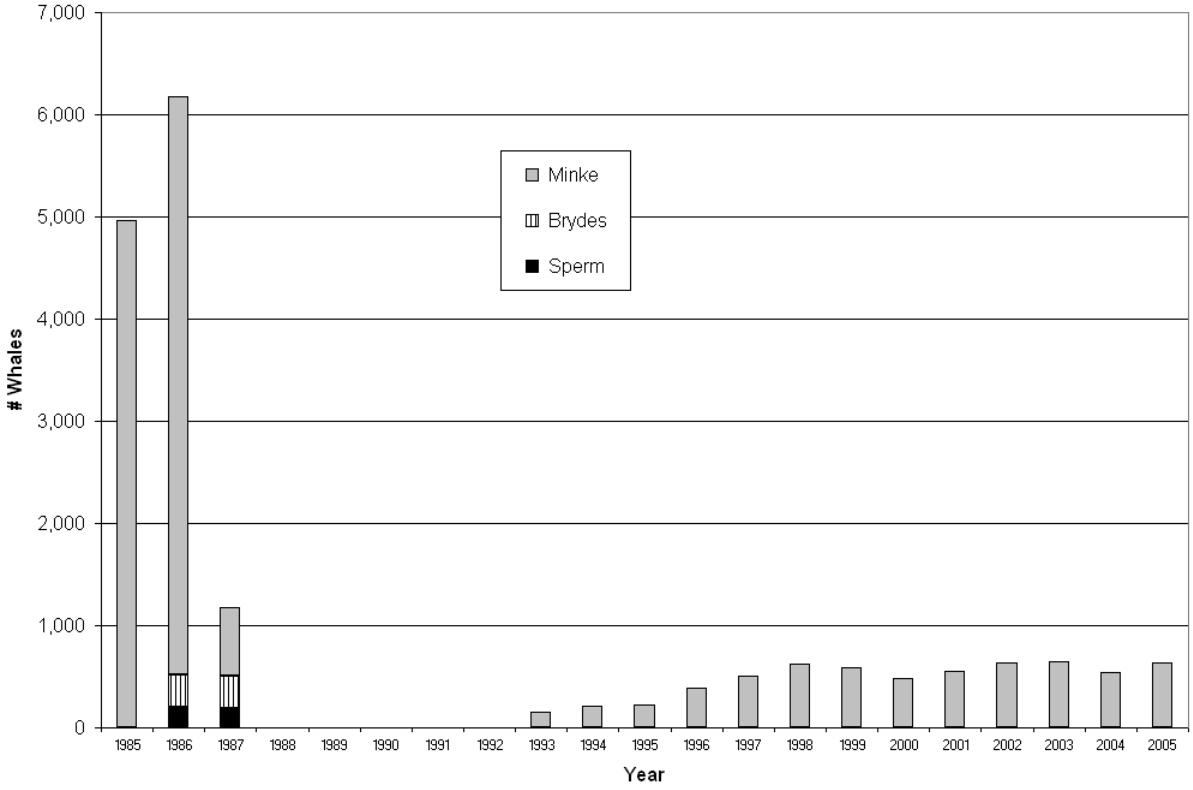


Figure 3-15. Commercial Whaling Catches by Species Since 1985

TABLE 3-48. SCIENTIFIC WHALING CATCHES SINCE 1985 (TAKEN UNDER SPECIAL PERMIT)

	Nation	Fin	Sperm	Sei	Brydes	Minke	Total
1986 (86/87)	**Iceland**	76	0	40	0	0	116
	Republic of Korea	0	0	0	0	69	69
	Total	76	0	40	0	69	185
1987 (87/88)	**Iceland**	80	0	20	0	0	100
	Japan (pelagic)	0	0	0	0	273	273
	Total	80	0	20	0	273	373
1988 (88/89)	**Iceland**	68	0	10	0	0	78

TABLE 3-48. SCIENTIFIC WHALING CATCHES SINCE 1985 (TAKEN UNDER SPECIAL PERMIT)

(CONTINUED)

	Nation	Fin	Sperm	Sei	Brydes	Minke	Total
	Japan (pelagic)	0	0	0	0	241	241
	Norway (small type)	0	0	0	0	29	29
	Total	68	0	10	0	270	348
1989 (89/90)	**Iceland**	68	0	0	0	0	68
	Japan (pelagic)	0	0	0	0	330	330
	Norway (small type)	0	0	0	0	17	17
	Total	68	0	0	0	347	415
1990 (90/91)	**Norway (small type)**	0	0	0	0	5	5
	Japan (pelagic)	0	0	0	0	327	327
	Total	0	0	0	0	332	332
1991 (91/92)	**Japan (pelagic)**	0	0	0	0	288	288
	Total	0	0	0	0	288	288
1992 (92/93)	**Norway (small type)**	0	0	0	0	95	95
	Japan (pelagic)	0	0	0	0	330	330
	Total	0	0	0	0	425	425
1993 (93/94)	**Norway (small type)**	0	0	0	0	69	69
	Japan (pelagic)	0	0	0	0	330	330
	Total	0	0	0	0	399	399
1994 (1994/95)	**Norway (small type)**	0	0	0	0	74	74
	Japan	0	0	0	0	21	21
	Japan (pelagic)	0	0	0	0	330	330
	Total	0	0	0	0	425	425
1995 (1995/96)	**Japan**	0	0	0	0	100	100
	Japan (pelagic)	0	0	0	0	440	440
	Total	0	0	0	0	540	540

TABLE 3-48. SCIENTIFIC WHALING CATCHES SINCE 1985 (TAKEN UNDER SPECIAL PERMIT)

(CONTINUED)

	Nation	Fin	Sperm	Sei	Brydes	Minke	Total
1996 (1996/97)	**Japan**	0	0	0	0	77	77
	Japan (pelagic)	0	0	0	0	440	440
	Total	0	0	0	0	517	517
1997 (1997/98)	**Japan**	0	0	0	0	100	100
	Japan (pelagic)	0	0	0	0	438	438
	Total	0	0	0	0	538	538
1998 (1998/99)	**Japan**	0	0	0	1	100	101
	Japan (pelagic)	0	0	0	0	389	389
	Total	0	0	0	1	489	490
1999 (1999/2000)	**Japan**	0	0	0	0	100	100
	Japan (pelagic)	0	0	0	0	439	439
	Total	0	0	0	0	539	539
2000 (2000/01)	**Japan**	0	5	0	43	40	88
	Japan(pelagic)	0	0	0	0	440	440
	Total	0	5	0	43	480	528
2001 (2001/02)	**Japan**	0	8	1	50	100	159
	Japan(pelagic)	0	0	0	0	440	440
	Total	0	8	1	50	540	599
2002 (2002/03)	**Japan (pelagic)**	0	5	40	50	102	197
	Japan (coastal)	0	0	0	0	50	50
	Japan (pelagic)	0	0	0	0	441	441
	Total	0	5	40	50	593	688
2003 (2003/04)	**Iceland**	0	0	0	0	37	37
	Japan (pelagic)	0	10	50	50	101	211

TABLE 3-48. SCIENTIFIC WHALING CATCHES SINCE 1985 (TAKEN UNDER SPECIAL PERMIT)

(CONTINUED)

	Nation	Fin	Sperm	Sei	Brydes	Minke	Total
	Japan (coastal)	0	0	0	0	50	50
	Japan (pelagic)	0	0	0	0	443	443
	Total	0	10	50	50	631	741
2004 (2004/05)	**Iceland**	0	0	0	0	25	25
	Japan (pelagic)	0	3	100	51	100	254
	Japan (coastal)	0	0	0	0	60	60
	Japan (pelagic)	0	0	0	0	441	441
	Total	0	3	100	51	626	780
2005 (2005/06)	**Iceland**	0	0	0	0	39	39
	Japan (pelagic)	0	5	100	50	101	256
	Japan (coastal)	0	0	0	0	121	121
	Japan (pelagic)	10	0	0	0	856	866
	Total	10	5	100	50	1,117	1,282

Source: IWC available at http://www.iwcoffice.org/_documents/table_permit.htm

TABLE 3-43. ABORIGINAL SUBSISTENCE WHALING CATCHES SINCE 1985 (CONTINUED)

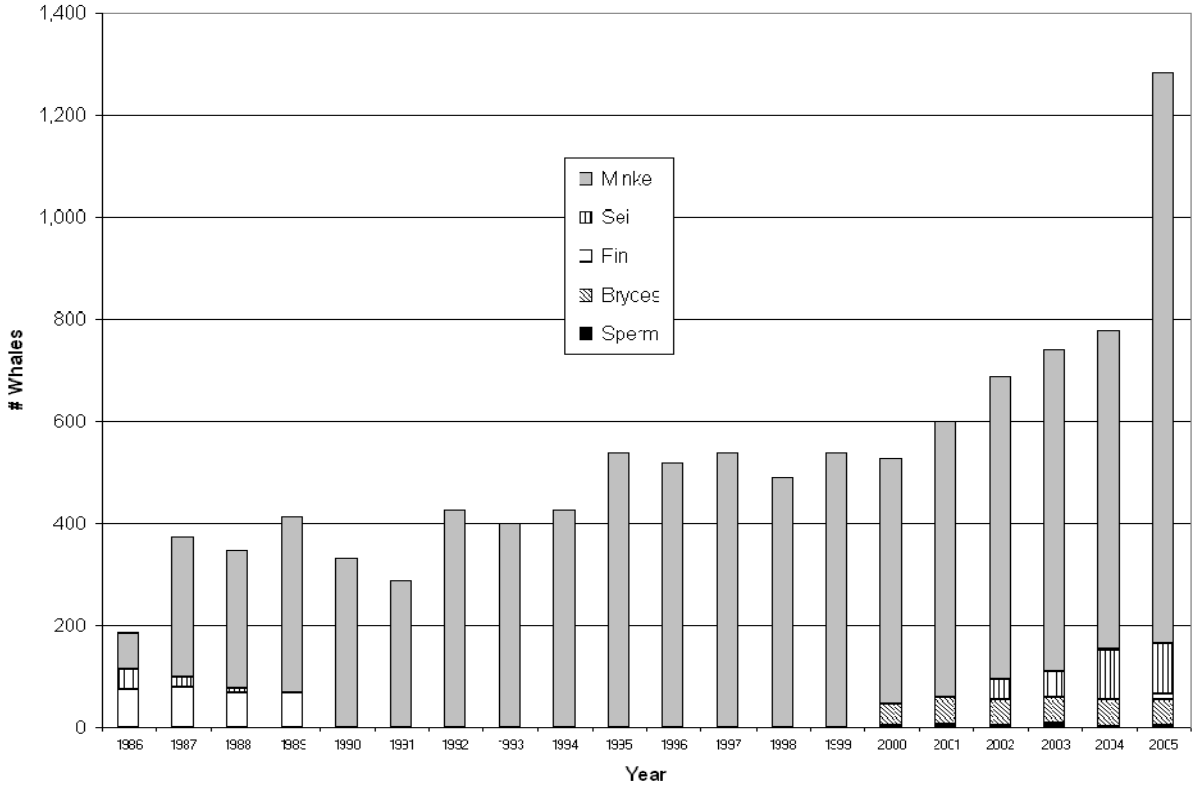


Figure 3-16. Scientific Whaling Catches by Species since 1985

1

2 **TABLE 3-49. ABORIGINAL SUBSISTENCE WHALING CATCHES SINCE 1985**

	Nation	Fin	Humpback	Sei	Gray	Minke	Bowhead	Total
1985	**Denmark: W. Greenland**	9	8	0	0	222	0	239
	Denmark: E. Greenland	0	0	0	0	14	0	14
	USSR	0	0	0	169	0	0	169
	USA	0	0	0	1	0	17	18
	Total	9	8	0	170	236	17	440
1986	**Denmark: W. Greenland**	9	0	0	0	145	0	154
	Denmark:	0	0	0	0	2	0	2

	Nation	Fin	Humpback	Sei	Gray	Minke	Bowhead	Total
	E. Greenland							
	St. Vincent	0	2	0	0	0	0	2
	USSR	0	0	0	169	0	0	169
	USA	0	0	0	2	0	28	30
	Total	9	2	0	171	147	28	357
1987	**Denmark: W. Greenland**	9	0	0	0	86	0	95
	Denmark: E. Greenland	0	0	0	0	4	0	4
	St. Vincent	0	2	0	0	0	0	2
	USSR	0	0	0	158	0	0	158
	USA	0	0	0	0	0	31	31
	Total	9	2	0	158	90	31	290
1988	**Denmark: W. Greenland**	9	1	0	0	109	0	119
	Denmark: E. Greenland	0	0	0	0	10	0	10
	St. Vincent	0	1	0	0	0	0	1
	USSR	0	0	0	150	0	0	150
	USA	0	0	0	1	0	29	30
	Total	9	2	0	151	119	29	310
1989	**Denmark: W. Greenland**	14	2	2	0	63	0	81
	Denmark: E. Greenland	0	0	0	0	10	0	10
	USSR	0	0	0	179	0	0	179
	USA	0	0	0	1	2	26	29
	Total	14	2	2	180	75	26	299

	Nation	Fin	Humpback	Sei	Gray	Minke	Bowhead	Total
1990	**Denmark: W. Greenland**	19	1	0	0	89	0	109
	Denmark: E. Greenland	0	0	0	0	6	0	6
	USSR	0	0	0	162	0	0	162
	USA	0	0	0	0	0	44	44
	Total	19	1	0	162	95	44	321
1991	**Denmark: W. Greenland**	18	0	0	0	99	0	117
	Denmark: E. Greenland	0	1	0	0	7	0	8
	USSR	0	0	0	169	0	0	169
	Canada	0	0	0	0	0	1	1
	USA	0	0	0	0	0	46	46
	Total	18	1	0	169	106	47	341
1992	**Denmark: W. Greenland**	22	1	0	0	103	0	126
	Denmark: E. Greenland	0	0	0	0	11	0	11
	St. Vincent	0	2	0	0	0	0	2
	Russia	0	0	0	0	0	0	0
	USA	0	0	0	0	0	50	50
	Total	22	3	0	0	114	50	189
1993	**Denmark: W. Greenland**	14	0	0	0	107	0	121
	Denmark: E. Greenland	0	0	0	0	9	0	9
	St. Vincent	0	2	0	0	0	0	2
	USA	0	0	0	0	0	52	52

	Nation	Fin	Humpback	Sei	Gray	Minke	Bowhead	Total
	Total	14	2	0	0	116	52	184
1994	**Canada**	0	0	0	0	0	1	1
	Denmark: W. Greenland	22	1	0	0	104	0	127
	Denmark: E. Greenland	0	0	0	0	5	0	5
	Russia	0	0	0	44	0	0	44
	USA	0	0	0	0	0	46	46
	Total	22	1	0	44	109	47	223
1995	**Denmark: W. Greenland**	12	0	0	0	153	0	165
	Denmark: E. Greenland	0	0	0	0	9	0	9
	Russia	0	0	0	90	0	0	90
	USA	0	0	0	2	0	57	59
	Total	12	0	0	92	162	57	323
1996	**Canada**	0	0	0	0	0	1	1
	Denmark: W. Greenland	19	0	0	0	164	0	183
	Denmark: E. Greenland	0	0	0	0	12	0	12
	St. Vincent	0	1	0	0	0	0	1
	Russia	0	0	0	43	0	0	43
	Canada	0	0	0	0	0	1	1
	USA	0	0	0	0	0	44	44
	Total	19	1	0	43	176	46	285
1997	**Denmark: W. Greenland**	13	0	0	0	148	0	161

	Nation	Fin	Humpback	Sei	Gray	Minke	Bowhead	Total
	Denmark: E. Greenland	0	0	0	0	14	0	14
	Russia	0	0	0	79	0	0	79
	USA	0	0	0	0	0	66	66
	Total	13	0	0	79	162	66	320
1998	**Canada**	0	0	0	0	0	1	1
	Denmark: W. Greenland	11	0	0	0	166	0	177
	Denmark: E. Greenland	0	0	0	0	10	0	10
	St. Vincent	0	2	0	0	0	0	2
	Russia	0	0	0	125	0	1	126
	USA	0	0	0	0	0	54	54
	Total	11	2	0	125	176	56	370
1999	**Denmark: W. Greenland**	9	0	0	0	170	0	179
	Denmark: E. Greenland	0	0	0	0	15	0	15
	St. Vincent	0	2	0	0	0	0	2
	Russia	0	0	0	123	0	1	124
	USA	0	0	0	1	0	47	48
	Total	9	2	0	124	185	48	368
2000	**Canada**	0	0	0	0	0	1	1
	Denmark: W. Greenland	7	0	0	0	145	0	152
	Denmark: E. Greenland	0	0	0	0	10	0	10
	St. Vincent	0	2	0	0	0	0	2

	Nation	Fin	Humpback	Sei	Gray	Minke	Bowhead	Total
	Russia	0	0	0	115	0	1	116
	USA	0	0	0	0	0	47	47
	Total	7	2	0	115	155	49	328
2001	**Denmark: W. Greenland**	8	2	0	0	139	0	149
	Denmark: E. Greenland	0	0	0	0	17	0	17
	St. Vincent	0	2	0	0	0	0	2
	Russia	0	0	0	112	0	1	113
	USA	0	0	0	0	0	75	75
	Total	8	4	0	112	156	76	356
2002	**Canada**	0	0	0	0	0	1	1
	Denmark: W. Greenland	13	0	0	0	139	0	152
	Denmark: E. Greenland	0	0	0	0	10	0	10
	St. Vincent	0	2	0	0	0	0	2
	Russia	0	0	0	131	3	0	134
	USA	0	0	0	0	0	50	50
	Total	13	2	0	131	152	51	349
2003	**Denmark: W. Greenland**	9	1	0	0	185	0	195
	Denmark: E. Greenland	0	0	0	0	14	0	14
	St. Vincent	0	1	0	0	0	0	1
	Russia	0	0	0	128	0	3	131
	USA	0	0	0	0	0	48	48
	Total	9	2	0	128	199	51	389

	Nation	Fin	Humpback	Sei	Gray	Minke	Bowhead	Total
2004	**Denmark: W. Greenland**	13	1	0	0	179	0	193
	Denmark: E. Greenland	0	0	0	0	11	0	11
	St. Vincent	0	0	0	0	0	0	0
	Russia	0	0	0	111	0	1	112
	USA	0	0	0	0	0	43	43
	Total	13	1	0	111	190	44	359
	2005	13	0	0	0	176	0	189
	Denmark: E. Greenland	0	0	0	0	4	0	4
	St. Vincent	0	1	0	0	0	0	1
	Russia	0	0	0	124	0	2	126
	USA	0	0	0	0	0	68	68
	Total	13	1	0	124	180	70	388

Source: IWC available at http://www.iwcoffice.org/_documents/table_aboriginal.htm

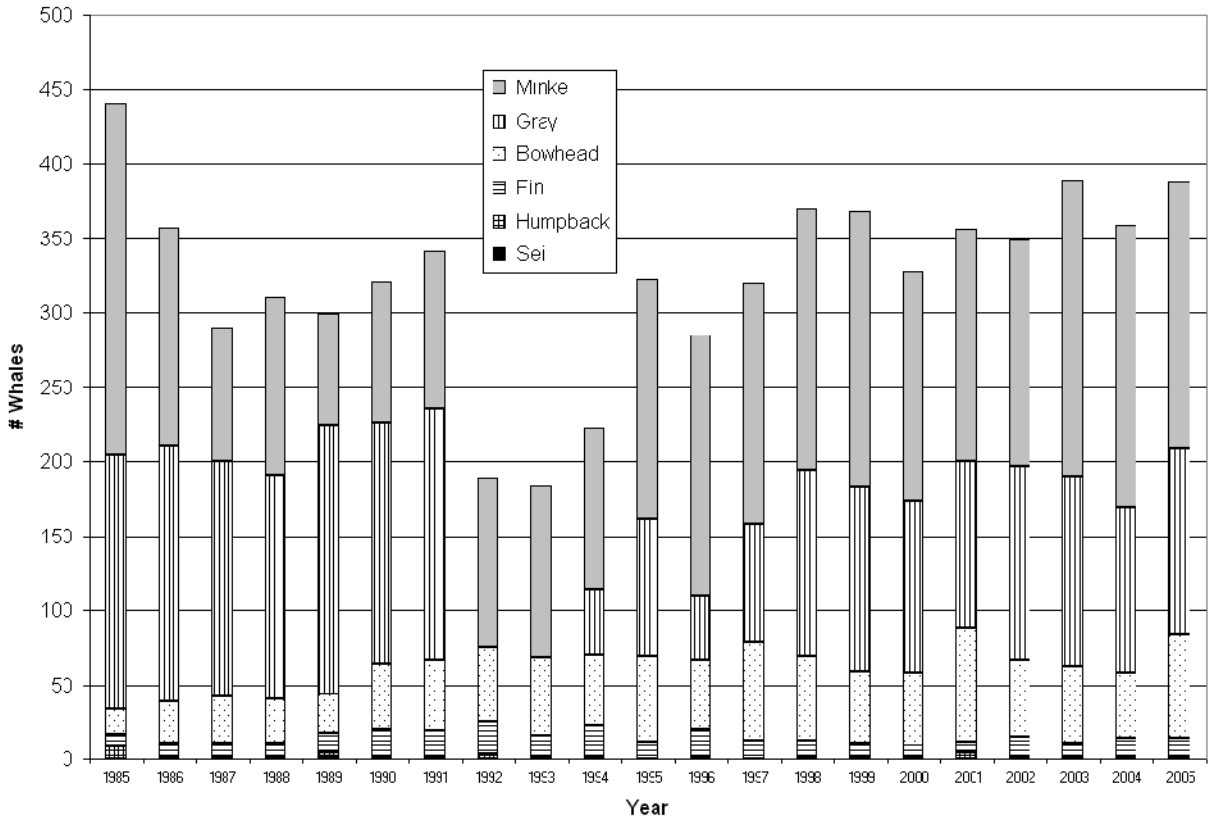


Figure 3-17. Aboriginal Subsistence Whaling Catches by species since 1985

3.17.3.2.2 Commercial and Scientific Whaling

The United States was a leader in establishing the 1982 moratorium on commercial whaling (Stoett 1997:65). In 1949, the United States passed the WCA, banning all commercial whaling by United States nationals. Congress adopted resolutions requesting the Secretary of State to negotiate a ten-year moratorium on the commercial killing of whales in the international arena (16 USC 916 note, Public Law 96-60, August 15, 1979, 93 Stat. 403). In 1972, the first United Nations Conference on the Human Environment in Stockholm adopted a resolution calling for such a moratorium. The United States lobbied at each subsequent IWC annual meeting for incorporation of the moratorium into IWC regulations, until its eventual adoption.

Prior to adoption of the moratorium, the Secretary of Commerce certified a number of countries under the Pelly Amendment finding their whaling activities diminished the effectiveness of the ICRW. In 1974, the Secretary of Commerce issued the first certifications under the Pelly Amendment directed at Japan and the Soviet Union for whaling in excess of IWC quotas. In

1978, the Secretary of Commerce certified Chile, Peru and the Republic of Korea under the Pelly Amendment for their whaling practices.

In 1982, when the commercial whaling moratorium was adopted, Japan, Peru, Norway, and the Soviet Union all lodged objections. In response to Japan's objection to the moratorium and continued commercial whaling, the United States threatened to end Japanese access to fishing in United States waters under the Packwood-Magnuson Amendment. Japan withdrew its objection to the moratorium by 1988, and Peru withdrew its objection in 1983. The Soviet Union conducted pelagic commercial whaling of minke whales in the southern hemisphere through the 1985/1986 season. The Soviet Union never withdrew its objection, but stopped harvesting whales commercially since 1986. The Russian Federation, successor state to the Soviet Union, has not engaged in commercial whale harvest.

When Norway objected to the moratorium and conducted small type coastal whaling in the 1986 and 1987 seasons, the Secretary of Commerce certified Norway under the Pelly Amendment; in 1987 Norway suspended its whaling. The Secretary of Commerce also certified Norway in 1990 and 1992 for its research whaling program. Norway then resumed commercial whaling in 1993, and was again certified by the Secretary of Commerce under the Pelly Amendment (Clinton 1993; Ek 1996). President Clinton did not impose trade sanctions, and explained in a letter to Congress that while "[t]he United States is deeply opposed to commercial whaling . . . [there is] an equally strong commitment to science-based international solutions to global conservation problems" (Clinton 1993). Clinton acknowledged that "not every country agrees with our position against commercial whaling," and initiated preparations for sanctions, but ultimately concluded that "the primary interest of the United States [is in] protecting the integrity of the IWC and its conservation regime," which could best be achieved through diplomatic measures (Clinton 1993). Norway remains certified under the Pelly Amendment Norway is the only original objecting party that still conducts commercial whaling under objector status. The IWC has passed numerous resolutions asking the government to reconsider its objection and immediately halt all whaling under its jurisdiction (see e.g., IWC Resolutions 1995-5, 1996-5, 1997-3, and 2001-5).

The Secretary of Commerce certified Japan's scientific whaling program in 1988, when Japan initiated its Antarctic program to harvest minke whales, in 1995, after Japan extended its minke whale program to the North Pacific, and in 2000 when Japan expanded its scientific whaling operations to include protected Bryde's and sperm whales. The Secretary stated that the United States government was "deeply concerned that the real aim of this large hunt is to pave the way

for an outright resumption of commercial whaling (Mineta 2000)". Japan remains certified under the Pelly Amendment.

Iceland did not lodge an objection to the commercial whaling moratorium in 1982, but subsequently disagreed with maintenance of the ban and withdrew from the IWC in 1992. In 2002 Iceland was successful in obtaining re-admission to the IWC but lodged a reservation to the moratorium. The reservation language provides that Iceland will not authorize whaling for commercial purposes before 2006, after which it will not authorize whaling while progress is being made in negotiations on the management of commercial whaling. Iceland announced its intent on October 17, 2006 to resume commercial whaling for minke and fin whales (Black 2006a; Fenner 2006). As of November 3, 2006, Icelandic whalers had killed seven fin whales and one minke whale (NOAA Public Affairs 2006). The United States, along with 17 other countries, objected to Iceland's reservation to the moratorium when it was re-admitted to the IWC in 1992. When Iceland resumed commercial whaling in 2006, the United States joined 24 other countries in lodging formal objections with the government of Iceland. The Secretary of Commerce also certified Iceland under the Pelly Amendment in 2004, and the certification remains in effect, though no trade sanctions have been imposed. In August 2007, Iceland announced it would not issue new whale-hunting quotas until market demand increased and it received an export license from Japan (Oafsdottir 2007)

The future of the moratorium on commercial whaling remains uncertain. The consistent position of the United States has been that the moratorium should not be lifted at least until a revised management scheme is in place (Department of State 2003), and has participated in good faith in negotiating such a scheme. At the same time, the IWC confirmed its view as recently as the annual meeting in St. Kitts and Nevis in 2006 that discussions on the revised management scheme remain at an impasse (IWC 2006b). At that meeting a slight majority of IWC member nations adopted a resolution declaring the commercial whaling moratorium no longer necessary (IWC Resolution 2006-1, 'St Kitts and Nevis Declaration'). Yet at the 2007 IWC meeting in Anchorage, 37 countries adopted a resolution stating that the whaling ban "remains valid" (IWC 2007b). While slight majorities within the IWC have thus succeeded in adopting contradictory resolutions regarding the commercial whaling moratorium, (resolutions are nonbinding) definitive action on the commercial moratorium (or the revised management scheme) is uncertain because neither the pro-commercial-whaling or anti-commercial-whaling sides of the debate have the three-fourths majority necessary for action (Henderson 2005; Hogarth 2006). Intensive

discussions at a recent intersessional meeting of the IWC identified a number of issues that may help improve discussions, negotiations, and trust within the IWC (Hogarth 2008).

3.17.3.2.3 Aboriginal Subsistence Whaling

Although aboriginal subsistence whaling was not controversial in the IWC through the mid-1970s, since that time several issues have arisen. One debate has focused on the sustainability of aboriginal subsistence harvests. Examples of harvests that have generated controversy include bowheads by Alaska Natives and harvest of minke and fin whales by Native Greenlanders. Bowheads are listed as endangered under the ESA and listed in Appendix I of CITES (Section 1.4.1.2.1, Relevant Overview of Requests for Bowhead Whales on Behalf of Alaska Eskimos). In the early 1970s, the IWC Scientific Committee expressed concern about the status of the bowhead whale stock, and at the 1977 annual meeting of the IWC, recommended that the catch limit for aboriginal subsistence harvest of bowheads be set at zero (accepted by the IWC with a vote of 16-0, with the United States abstaining). In a subsequent special meeting in 1977, the United States and the Alaska Eskimo Whaling Commission presented a request to modify the ban and allow for a take of bowhead by Alaska Eskimos. Although the Scientific Committee rejected the proposal, the IWC plenary session allowed for a limited and strictly controlled hunt for 1978. Work on the bowhead aboriginal subsistence hunts continued in workshops and working groups following the special meeting. Some argued that the United States, by supporting an aboriginal hunt contrary to scientific advice regarding the conservation status of the stock, undermined the conservation arguments the United States and the IWC used to maintain the commercial moratorium (Hankins 1990). Continuous research since then has addressed questions regarding sustainability of a bowhead harvest.

Native Greenlanders harvest North Atlantic minke and fin whales, which are classified as protection stocks under the IWC Schedule. For a number of years, the IWC Scientific Committee has been unable to provide scientific advice to the IWC on safe catch limits because of lack of information regarding stock structure and minimum stock level, although this changed in 2007 with more solid data and advice on sustainable catch limits. (IWC 2007b).

Commercial whaling proponents have pointed to the IWC's approval of aboriginal subsistence whaling in support of commercial whaling, arguing the same conservation standards should apply to both. The High North Alliance, a group of nations that support resumption of commercial whaling, points to the Greenlander hunt, arguing that the IWC process with respect to aboriginal subsistence whaling is flawed. According to their website, they urge that all whaling be managed

under the same management objectives (High North Alliance 2007). Debate in the IWC over aboriginal subsistence whaling also centers on what groups of people qualify as aboriginal subsistence whalers, what manner of hunting qualifies as aboriginal subsistence hunting, and what use of the products of the hunt qualifies as subsistence use. Criticisms come from those who support commercial whaling and argue for equal consideration, and from animal rights groups opposed to all forms of whaling or concerned that aboriginal hunting methods result in inhumane killing. Criticisms have been leveled at the Greenlander, Bequian, Chukotkan, Alaska Native and Makah hunts based on arguments that the hunters are not aborigines, that the manner of hunting is not aboriginal, or that the use of the products is not subsistence use.

Some critics have noted that the hunts of Greenlanders are particularly difficult to distinguish from commercial whaling due to the close integration of hunting and fishing activities and waged employment (Dahl 1989; Stevenson et al. 1997), plus the sale of *mattak* and other surplus whale products on the Greenland market (Dahl 1989; Heide-Jørgensen 1994; Australian National Task Force on Whaling 1997:29; Johansen 1997; High North Alliance 2007).

The Bequian harvest is an offshoot of New England-based whale fisheries that operated in the West Indies in the mid-1700s (Reeves 2002). Meat from humpbacks is still considered highly palatable by the Afro-Caribbean population of St. Vincent and the Grenadines, and meat for local consumption appears to be the principal incentive for whaling, although products from the hunts (especially oil) are also sold on the wider regional market (Caldwell and Caldwell 1975; Australian National Task Force on Whaling 1997:29; Reeves 2002). The Bequian harvest of humpback whales was limited to a few whales by primarily one person for several years, and was originally intended to be phased out. At the IWC annual meeting in 1996, however, St. Vincent and the Grenadines reported that a new whaler had taken up humpback whaling, causing concern on the part of some delegates (IWC 1997).

The Chukotkan hunt has raised concerns about the use of products from the hunt, since the blubber and some other gray whale components were being used as food in fox fur farms (IWC 1996; Australian National Task Force on Whaling 1997).

The ‘subsistence use’ definition formally adopted by the IWC includes the barter, trade or sharing of whale products primarily within the local community, and allows for the sale of handicrafts made from whale products. Commercial whaling proponents argue that this creates a double standard and that sharing, bartering and trading meat amounts to commerce (Stoett 1997). Alaska Eskimos are allowed to sell native articles of handicraft from bowhead whales within the borders

of the United States under the provisions of the MMPA, and the restrictions were similar for the 1998 through 2000 Makah hunts, as well as the current proposed action. In the past questions have been raised about whether the Makah harvest was a subsistence harvest because their original 1995 formal request to resume hunting of ENP gray whales stated that the Makah were reserving what they consider their treaty-secured right to whale for commercial purposes. They classified their ceremonial and subsistence request as 'interim.' The present request does not include such a statement.

The legitimacy of the Makah request has also been questioned because of the Tribe's 70- to 80-year hiatus in whaling. (Section 1.1.4., Summary of Makah Tribe's Historic Whaling Tradition, describes the reasons for the hiatus.) The 1981 *Ad Hoc* Technical Working Group's working definition of 'aboriginal subsistence whaling' refers to a "continuing traditional dependence" on whale products for subsistence (Section 3.17, Regulatory Overview; Section 1.4.1.2.1., Relevant Overview of Requests for Bowhead Whales on Behalf of Alaska Eskimos; Section 1.4.1.2.2., Overview of Requests for ENP Gray Whales on Behalf of the Makah). While other aboriginal subsistence whalers have had smaller breaks in subsistence tradition (e.g., the Chukotkans stopped whaling for a few years in the 1990s), no other group has had a break lasting for more than a generation.

Additional controversy was generated over the legitimacy of the Makah hunt as an aboriginal subsistence hunt when the IWC adopted Schedule language stating that products from the hunt "were to be used exclusively for local consumption by the aborigines whose traditional aboriginal subsistence and cultural needs have been recognized" (IWC 1997)(Section 1.4.1.2.2., Overview of Requests for ENP Gray Whales on Behalf of the Makah). Some observers asserted that "the more flexible the aboriginal subsistence whaling definitions become, the more susceptible the IWC will be to unyielding pressure by other communities with traditions of harvesting and using whales for commercial purposes" (Jenkins and Romanzo 1998). This issue became moot when the words "whose traditional aboriginal subsistence and cultural needs have been recognized" were deleted from Schedule 13 (Section 1.4.1.2.2., Overview of Requests for ENP Gray Whales on Behalf of the Makah).

Beginning in 1986, Japan argued that its coastal villages should be allowed to whale under the aboriginal subsistence whaling exception, also requesting that the sale of meat from the hunt be allowed on the open market. At the IWC meeting in 2002, Japan and other pro-whaling parties withheld support for the United States' request for a bowhead quota for the years 2003 through

2007, but did not oppose the joint request of the Russian Federation and the United States for gray whales. Later that year at a special meeting, Japan and others approved catch limits for bowheads through 2007, and the United States voted in favor of a resolution regarding Japan's plan for small type coastal whaling if it was non-commercial and based on scientific advice. That resolution did not pass.

At the 2007 IWC meeting in Anchorage, Japan continued to press for an allowance for coastal whaling. In a statement to the press, Japan's Commissioner argued that small type coastal whaling is no different from aboriginal subsistence whaling and accused IWC members of imposing a "double standard" (Hopfinger 2007). Prior to the meeting, the Japanese Commissioner stated that Japan would not oppose the Alaska Eskimo quota, while the United States Commissioner was quoted in the Anchorage papers saying the United States would strike no deals with Japan even if Japan opposed the bowhead quota (deMarban 2007). The United States' request for updated bowhead catch limits and the joint request of the Russian Federation and United States for gray whale catch limits were approved by consensus.

Outside the IWC forum or any international regulatory regime, aboriginal subsistence hunting occurred for hundreds to thousands of years. See Section 3.4.3.6.1, Aboriginal Subsistence Whaling, for a list of tribes engaged in historic aboriginal hunts of ENP gray whales from California to Alaska and Chukotka. More recently, aboriginal subsistence hunts of whales is known to continue, or to have continued until recently, in three tropical areas: (1) humpback whale hunts in Equatorial Guinea, (2) sperm whale and other species in Indonesia, and (3) Bryde's whales in the Philippines. The humpback whale hunt off the island of Pagalu in the Gulf of Guinea is thought to have been introduced by American ship-based whalers in the 18th and 19th centuries (Reeves 2002). Natives target humpback calves, with an estimated catch level of 3 or fewer humpbacks per year (Aguilar 1985; Reeves 2002). Whale hunts for sperm whales and other whales off two Indonesian islands predates the arrival of American and English whalers by at least two centuries (Barnes 1991; Barnes 1996). Fishing, including whaling, is the principal source of sustenance, and whale products, including meat and oil, are sold at local markets (Barnes 1991; Barnes 1996; Reeves 2002). One group of natives has mainly targeted sperm whales in the large whale catch for recent years, totaling a catch of 664 whales from 1959 to 1995, while another group of natives seems to target mostly baleen whales, including fin, sei, and minke whales (Barnes 1969; Reeves 2002). Both groups also hunt small cetaceans. Bryde's whales were the main targeted species in the Philippines until the last documented catch in 1996, when a Philippine administrative order expanded the prohibition on killing dolphins to include all

cetaceans (Reeves 2002). Whale hunting origins among fishermen ranged from 100 years to opportunistic hunting in the last few generations.

Although the United States has consistently supported sustainable aboriginal subsistence whaling, it objected to Canada's authorization of a bowhead hunt by Inuit hunters. In 1996 the Commerce Secretary certified Canada under the Pelly Amendment for allowing Inuit hunters to take two bowhead whales. The Secretary's certification stated that "[t]he United States supports aboriginal whaling when it is managed through the International Whaling Commission, the global body charged with responsibility for the international conservation and management of whale stocks and the regulation of whaling" (NOAA Press Release 96-r194, December 18, 1996). Canada withdrew from the IWC in 1982.

3.17.3.3 Ceremonial and Subsistence Practices of Indigenous People

Indigenous people inhabit large areas of the earth's surface from the Arctic to the South Pacific, numbering roughly 300 million. In a Fact Sheet, the United Nations High Commissioner for Refugees provides the following information:

> [T]hey are the descendants - according to one definition - of those who inhabited a country or a geographical region at the time when people of different cultures or ethnic origins arrived, the new arrivals later becoming dominant through conquest, occupation, settlement or other means. Among many indigenous peoples are the Indians of the Americas (for example, the Mayas of Guatemala or the Aymaras of Bolivia), the Inuit and Aleutians of the circumpolar region, the Saami of northern Europe, the Aborigines and Torres Strait Islanders of Australia, and the Maori of New Zealand. Indigenous people often retain social, cultural, economic and political characteristics that are clearly distinct from those of the other segments of the national populations (UNHCR 1995).

The cultures of indigenous people may be threatened by the dominant society. In many parts of the world indigenous people are actively seeking recognition of their identities and ways of life.

With its history of religious tolerance and protection of individual freedoms through the Constitution, the United States considers itself a world leader in its respect for the practices of native people. It has not, however, supported the broad claims for self-determination often associated with the international indigenous rights movement. For example, the United States has not joined the International Labour Organisation Convention 169 on the Rights of Indigenous Peoples and expressed numerous reservations to the United Nations Declaration on the Rights of Indigenous People (Section 3.17.2.6, International Law Regarding Indigenous People).

Chapter 4 Environmental Consequences

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4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

This chapter examines the potential direct and indirect effects of the six alternatives on each of the resources considered in this EIS. Direct effects are those that are caused by the action and occur at the same time and place, while indirect effects are those that are caused by the action but occur later in time and are reasonably foreseeable. Both adverse and beneficial effects are considered.

Chapter 2 described the No-action Alternative and five action alternatives and Chapter 3 described the current condition of the resources that may be affected by the alternatives. The present Chapter evaluates the direct and indirect effects each alternative is likely to have on each resource. Chapter 5 will address any cumulative effects that might occur when the direct and indirect effects of any of the alternatives are considered in the context of past actions, other contemporaneous actions, or reasonably foreseeable future actions.

For each resource, Chapter 3 included a regulatory overview, providing information about how that resource is managed, which informs the criteria presented in this Chapter for evaluating effects of the alternatives. This information was provided as background and it is not the purpose of this EIS to reach conclusions about whether the alternatives might meet all regulatory requirements. Rather, the focus of this EIS is to inform decisions regarding whether to waive the MMPA prohibition on take or to authorize whaling under the WCA. Once NMFS selects an action, it will make any necessary determinations required by applicable laws in accord with the processes and procedures of those laws.

The five action alternatives examined in this EIS vary in the total number of whales that may be harvested, the number of identified whales from the PCFA survey area that may be harvested, and the timing and location of hunting. These principal components (described in Section 2.2, Alternative Development Process) are likely to influence the time of year the Tribe would hunt, the number of days the Tribe would hunt, and the probability that the Tribe would harvest the total number of whales allowed. Also relevant to the analysis of effects is the number of whales subjected to harpoon attempts, the number of whales approached by Makah vessels, and the number of rifle shots or grenade explosions under each alternative. Table 4-1 contains the same information regarding these principal components as that contained in Table 2-1, Primary Differences Among Alternatives, and also includes additional estimates of (1) the number of

approaches and unsuccessful harpoon attempts (2) the number of rifle shots or grenade explosions, and (3) the number of days of hunting that would occur if a hunt were approved under any of the action alternatives. The estimate of when and how often the Tribe would hunt under any alternative is also relevant to analyzing the effects of other activities associated with hunting, such as the operation of vessels and aircraft, and protest and media-related activities.

The following discussion explains the basis for the assumptions about the most likely time hunting would occur, the number of days of hunting, the number of whales approached and the number subjected to harpoon attempts. It is impossible to predict any of these parameters with certainty, but including them in the analysis helps make the analysis – and the comparison among alternatives – more concrete and specific.

TABLE 4-1. PRIMARY DIFFERENCES AMONG ALTERNATIVES, AND ASSOCIATED ASSUMPTIONS FOR ANALYSIS

WHALE HUNTING COMPONENTS		ALTERNATIVES					
		1 NO-ACTION	2 PROPOSED ACTION	3 HUNT OUTSIDE STRAIT, NO TIMING RESTRICTIONS, NO IDENTIFIED WHALE LIMITS	4 SANCTUARY AND NATIONAL WILDLIFE REFUGE RESOURCE ALTERNATIVE	5 HUNT OUTSIDE STRAIT, NO TIMING RESTRICTIONS, MORE RESTRICTIVE NUMBERS, NO IDENTIFIED WHALE LIMITS	6 HUNT ANYWHERE IN U&A, NO TIMING RESTRICTIONS, NO IDENTIFIED WHALE LIMITS
Hunt timing		Not authorized	December 1 through May 31	January 1 through December 31	Same as Alternative 2	Same as Alternative 3	Same as Alternatives 3, 5
Hunt area		None	U&A west of Bonilla-Tatoosh line1	Same as Alternative 2	Same as Alternatives 2, 3, except would prohibit hunting within 200 yards of rocks and islands at all times	Same as Alternatives 2, 3	Entire U&A
Maximum limit for harvested, struck, and struck and lost whales	Annual	0	Up to 5 harvested, 7 struck, and 3 struck and lost	Same as Alternative 2	Same as Alternatives 2, 3	Up to 2 harvested, 3 struck, and 1 struck and lost	Same as Alternatives 2, 3, 4
	Five-year period	0	Up to 20 harvested, 35 struck, and 15 struck and lost	Same as Alternative 2	Same as Alternatives 2, 3	Up to 10 harvested, 15 struck, and 5 struck and lost	Same as Alternatives 2, 3, 4
Additional limits for identified whales		Not applicable	Yes	No	Same as Alternative 2	Same as Alternative 3	Same as Alternatives 3, 5
Analysis Assumptions, Based on the Above							
Assumed number of whales with harpoon attempts and approaches	Annual	0	Up to 28 exposed to harpoon attempts, 140 approached	Same as Alternative 2	Same as Alternatives 2, 3	12 exposed to harpoon attempts, 60 approached	Same as Alternatives 2, 3, 4
	Five-year period	0	Up to 140 exposed to harpoon attempts, 700 approached	Same as Alternative 2	Same as Alternatives 2, 3	60 exposed to harpoon attempts, 300 approached	Same as Alternatives 2, 3, 4
Assumed number of rifle shots		0	28	Same as Alternative 2	Same as Alternatives 2, 3	12	Same as Alternatives 2, 3, 4
Assumed number of grenade explosions		0	21	Same as Alternative 2	Same as Alternatives 2, 3	9	Same as Alternatives 2, 3, 4
Assumed number of hunting days		0	7-30 days per year	40 days	Same as Alternative 2	20 days	Same as Alternative 3

1 U&A west of Bonilla-Tatoosh line is the Makah Tribe's U&A fishing grounds off the coast of Washington and west of the Bonilla-Tatoosh line, excluding the Strait of Juan de Fuca. See Figure 1-1.

2 The entire Makah Tribe U&A includes the Strait of Juan de Fuca and waters off the coast of Washington, as adjudicated by *United States v. Washington* (1974 and 1985). See Figure 1-1.

4.1.1 Alternative 1

Under Alternative 1, NMFS would not authorize a Makah gray whale hunt. The current annual and five-year IWC catch limits set by the IWC for ENP gray whales are based on a joint request of the Russian Federation and the United States. The catch limit set by the IWC is 620 whales over the five-year period (2008 through 2012), with no more than 140 whales taken in any one year. A bilateral agreement between the Russian Federation and the United States, renewed each year, allocates those totals between the two countries. If NMFS does not authorize a Makah gray whale hunt, or authorizes a hunt for fewer whales than provided in the bilateral agreement, the Russian Federation could authorize the Chukotka Natives to take any of the unused catch limit. Because of this possibility, although the alternatives considered in this EIS may result in the Makah Tribe harvesting different levels of ENP gray whales, the overall harvest is likely to be the same regardless of the alternative selected (that is, the total allowed under the IWC schedule).

Beyond 2012, if NMFS did not authorize a Makah gray whale hunt, it is reasonable to expect that the Russian Federation would request a renewal of the ENP gray whale catch limit of at least 620 whales over five years, consistent with their representations at the 2007 IWC meeting that their needs are more than currently provided for under the existing allocation (IWC 2007c).

4.1.2 Alternative 2

The Makah Tribe proposed Alternative 2, which would allow harvest of four whales per year on average (with a maximum of five in any one year) and up to 20 whales in a five-year period. Hunting would be allowed in the Tribe's U&A outside the Strait of Juan de Fuca from December 1 to May 31. Hunting would not be allowed within 200 yards of Tatoosh Island and White Rock.

The number of whales that could be struck would be limited to no more than seven in any calendar year and no more than 35 over the five-year period, while the number of whales struck and lost would be limited to three annually and 15 over the five-year period. The maximum number of whales struck in any year would be seven, and the maximum number struck and lost would be three. Assuming struck and lost whales are killed, the maximum number of whales that might be killed each year under Alternative 2 would be seven (that is, the seven-strike limit would be the limiting number) (Table 4-1, Primary Differences among Alternatives, and Associated Assumptions for Analysis).

The hunting season under this alternative could occur during periods of cold weather, storms, and rough seas from December through March. These months have significantly more rain and slightly more fog (both of which affect visibility) than April and May (Table 3-42). Also, as

described in Section 3.15.3.2.2 (Description of Weather and Sea Conditions in the Project Area), wave heights show a wider range of variability during the months of December through March, when peak wave heights may exceed 30 feet (compared to peak wave heights near 20 feet during April and May; Figure 3-14). April and May are also slightly warmer than the winter months and less windy. For example, gale-force winds occur six times more frequently in January, compared to April (Table 3-42).

Southbound migrating whales have been observed in the project area in December, and Rugh et al. (2001) estimated January 5 as the peak of the southward migration at Tatoosh Island (Section 3.4.3.1.4, Seasonal Migrations). While gray whales are present in the project area during December and January, they are likely traveling more quickly and farther offshore than northbound migrants in the spring (Section 3.4.3.1.4, Seasonal Migrations). As a result, gray whales are likely to be less available for harvest from December through February than during March and April when the northward migration has begun.

The inclement weather and high seas of the winter months, combined with the greater availability and accessibility of whales in the project area in the spring, make it most probable that hunting under Alternative 2 would occur in April and May. This was the case during the 1999 and 2000 hunts, when NMFS authorized hunting under the WCA. The 1999 hunt began May 10, and the 2000 hunt began April 17. The Makah tribal Council did not issue any hunting permits during the winter of 1999/2000 because of unfavorable weather conditions. The Tribe's proposal includes the option of winter hunts, and it is possible that the Tribe could hunt during that time. Given the unfavorable weather and sea conditions during winter and early spring, the nature of the Makah hunting vessel (a canoe), and the Makah's recent history, it is reasonable to expect that most hunting under Alternative 2 would likely occur in April and May.

Not every day of April and May (a 61-day period) presents favorable hunting conditions. For example, the mean number of days with rain during these two months is 19 and 20, respectively, while for fog it is 9 and 10 days, respectively (Table 3-42). Extreme low temperatures in April can drop to 33 degrees F and as low as 37 degrees F in May (Table 3-38). In the spring of 1999, the Tribe first hunted on May 10 for 10 days. In spring 2000, the Tribe first hunted on April 17 for seven non-consecutive days. Authorizing a hunt consistent with Alternative 2 would likely result in fewer than 61 days of hunting. Given the limitations of weather and sea conditions even during April and May, it is reasonable to expect that implementation of Alternative 2 would result

in 7 to 30 days of hunting during April and May. Seven is the number of days the Tribe hunted in 2000, and 30 represents half the days available during the most likely months for hunting.

Given the limited number of actual hunting days available under Alternative 2, and based on whale hunting in the recent past, it is possible that the Tribe may not be able to harvest the average quota of four whales per year, at least initially. The 1999 hunt occurred over 10 days and resulted in the harvest of one whale. The 2000 hunt occurred over seven days and resulted in no harvest of whales. It is possible that interference by protesters decreased the effectiveness of the Makah hunters during 1999 and 2000. With experience, the Tribe is likely to become more proficient at locating and harvesting whales, but the realistic amount of time available for hunting under Alternative 2 may still prevent the Tribe from harvesting four gray whales in a year.

Under Alternative 2, the Tribe would cease hunting in any year if it killed a predetermined number of identified whales from the PCFA survey area, which it describes as an 'allowable bycatch level.' The Tribe proposes that this level be calculated using NMFS' potential biological removal (PBR) methodology (Section 3.4.2.1.4, Defining and Calculating PBR), applied to annually updated minimum abundance[1] estimates of returning whales in the Oregon Southern Vancouver Island (ORSVI) survey area. The Tribe's proposed method would result in an allowable bycatch level of 2.35 percent of the minimum estimated abundance of whales in the ORSVI survey area. The PBR method is described in greater detail in Section 3.4.2.1.4, Defining and Calculating PBR, and the Tribe's proposal for applying it is described further in Appendix A. In particular, the Tribe proposes to calculate the allowable bycatch level based on the minimum estimated abundance of whales identified as returning to the ORSVI survey area[2], but apply it to the larger pool of whales identified in the PCFA survey area in any given year.[3] Thus, the limit could be reached by removing whales that had never been seen in the Makah U&A and ORSVI, but had been seen elsewhere within the PCFA. The allowable by-catch level using the current minimum abundance estimate of 102 would be 2.4 whales (102 times 0.0235). This estimate would be rounded down to two whales.

[1] These estimates may lag by up to one year due to the time required to review survey annual data.

[2] As described in Section 3.4.3.2.1, Summer Range Distribution and Habitat Use, the abundance estimate is based on whales either observed returning, or predicted to return, to the ORSVI survey area, minus an estimated mortality rate. The abundance estimate is thus smaller than the number of all whales sighted in the ORSVI survey area, which includes whales that were only seen in one year and may not have returned.

[3] As in Chapter 3, Affected Environment, Chapter 4 uses the terms "whales identified in the PCFA survey area" interchangeably with "PCFA whales." This is also the case for ORSVI whales and Makah U&A whales. This terminology applies to whales identified in a survey area, even if they were only seen in that area in one year.

The Tribe proposes to apply the allowable bycatch level only to whales that are successfully landed and not to those that are struck and lost. Some proportion of struck and lost whales would, however, likely be whales identified from the PCFA, ORSVI, or Makah U&A survey areas. With an allowable bycatch level of 2 for PCFA whales and the restriction of 3 struck and lost, a maximum of 4 whales from the PCFA could be killed. This would happen if 2 whales from the PCFA were struck and lost before 2 whales from the PCFA were landed. This maximum number is based on the current minimum abundance estimate for ORSVI. The actual maximum would depend on the estimate for any given year, which would be adjusted as new data became available.

The previous discussion addresses the maximum number of PCFA whales that might be killed each year under Alternative 2. This analysis also considers a more likely number of identified whales that might be killed per year, based on their representation in the Makah U&A during the time the Makah propose to hunt (prior to June 1). From data collected before June 1 during 1998-2005, 17.9 percent of whales seen in the northern Washington coast survey area (coastal portion of the Makah U&A) prior to June 1 were whales identified in the PCFA survey area after June 1 (PCFA whales), 17.9 percent were also whales identified in the ORSVI survey area after June 1 (ORSVI whales), and 12.5 percent were whales identified in the Makah U&A after June 1 (Makah U&A whales) (Section 3.4.3.3.2, Winter Range Distribution and Habitat Use). If a total of seven whales are killed in a year under Alternative 2, the likely number of PCFA whales that would be killed in a year would be 1.25 (seven whales killed times 17.9 percent); the likely number of ORSVI whales would be 1.25 (seven whales killed times 17.9 percent); and the likely number of Makah U&A whales would be 0.875 (seven whales killed times 12.5 percent). These numbers are subsets of one another (the Makah U&A is contained in ORSVI, which is contained in PCFA; Figure 3-4) and should not be added together.

These more likely estimates are conservative because they are based on seven whales per year being killed. With the limit of three struck and lost, the maximum of seven whales struck (all assumed dead) can only occur if one of two situations occur:

1) two whales are struck and lost before four whales are killed and landed and then a final whale is struck and lost, or

2) two whales are struck and lost before five whales are killed and landed.

All other scenarios would result in fewer whales being killed. We have not attempted to develop probabilities for each scenario, but have instead used the conservative maximum of seven.

Based on its experience during the 1999 and 2000 hunts, the Tribe also estimates that, for every whale struck, there could be approximately four whales subjected to unsuccessful harpoon attempts and 10 whales approached. The Tribe further estimates average pod size to be two whales. Relying on these estimates, the Tribe anticipates that no more than 28 gray whales would be subject to unsuccessful harpoon attempts in any calendar year (four unsuccessful attempts for each of seven struck whales), and no more than 140 whales would be subject to approaches with no harpoon attempt in any calendar year (10 whales approached for each of seven whales struck, times two in a pod). Expanding these estimates over the five-year period, NMFS further estimates that the number of whales subjected to harpoon attempts over the five-year period could be as high as 140 (28 per year times five years), and the number of whales approached could be as high as 700 (140 per year times five years). These estimates are likely conservative, given that the estimate of seven strikes is high, and that the Tribe may not be able to harvest four whales under Alternative 2.

The Tribe proposes to use a toggle-point harpoon to strike and secure whales and a .50 caliber rifle to kill whales that have been struck and secured. This EIS also examines the alternative of using explosive grenades to strike whales, kill whales, or both. Based on the Tribe's experience with the 1999 hunt, in which four shots were fired to kill the whale that was harvested, NMFS estimates that there would be four rifle shots for each struck whale.[4] This would result in a maximum of 28 rifle shots annually (four shots times seven struck whales) and 140 over a five-year period (28 shots annually times five years). Based on the experience of other aboriginal whale hunters (Section 3.4.3.5.4, Method of Killing and Time to Death), NMFS estimates that, if the Tribe used explosive projectiles to strike and kill whales, a maximum of three grenades per whale would be detonated. This would result in a maximum of 21 grenade explosions annually (three explosions times seven struck whales) and 105 over a five-year period (21 explosions per year times five years).

4.1.3 Alternative 3

Alternative 3 would allow the same numbers of whales harvested, struck, and struck and lost, as well as the same hunting area, as Alternative 2. This alternative would include no limitations

[4] At least 16 shots were fired during the unauthorized gray whale hunt in 2007 (Section 1.4.2, Summary of Recent Makah Whaling – 1998 through 2007). Because the 2007 hunt followed none of the procedures (Section 1.4.2 Summary of Recent Makah Whaling – 1998 through 2007) recommended by the Tribe, that precedent is not useful for determining what would happen in a future authorized hunt.

based on the harvest of PCFA whales or on the timing of the hunt and would not limit hunting around any rocks or islands.

Under Alternative 3, hunting would be allowed year-round. This would give the Tribe the option to hunt during the summer months when weather conditions would be more conducive than during the winter months. (The Tribe did not hunt during the summer months in 1999 and 2000, but this experience is not indicative of whether they would be likely to hunt during summer months in the future, if such a hunt were authorized. In 1999, the Tribe stopped hunting after its first successful hunt on May 17. In 2000, the Tribe had intended to continue hunting in June after its unsuccessful attempts in May, but canceled plans for hunting after the Ninth Circuit issued its decision in *Metcalf v. Daley* (2000).)

The lack of a limit on the harvest of PCFA whales would also affect the months during which the Tribe might hunt. Whales in the Tribe's U&A after June 1 are, by definition, PCFA whales, because the survey area encompasses the Tribe's U&A, and June 1 marks the beginning of the summer feeding period. Removing the limit on the number of PCFA whales that may be harvested would remove a constraint that might have otherwise caused the Tribe to avoid hunting during the summer period. Because the Tribe could hunt year round and there would be no limit on PCFA whales, under this alternative all seven whales that could be killed each year (as determined by the seven-whale strike limit) could be PCFA whales.

Implementing Alternative 3 would, on average, result in as many 40 days of hunting year round. Most hunting would likely occur from April through September each year. The Tribe's successful hunt in 1999 occurred on the tenth day of hunting. Based on the ratio of days of hunting to whales harvested, it is reasonable to expect that the harvest of twenty whales over five years would result in an average of 40 days of hunting per year. It is also reasonable to expect that hunting would be spread across the season, since butchering and processing the whale and conducting community ceremonies and celebrations in 1999 were significant undertakings (Table 3-29). Based on the year round hunting season and lack of limits on PCFA whales under Alternative 3, it is also likely that the Tribe would have a greater opportunity and, therefore, a greater likelihood of harvesting 20 whales over five years than under Alternative 2.

As under Alternative 2, the maximum allowable number of whales struck in a given year would be seven, and the maximum allowable number struck and lost would be three. The Tribe's and NMFS' estimates for the number of whales exposed to unsuccessful harpoon attempts and approaches would be the same as under Alternative 2. NMFS' estimates of the number of rifle

shots and grenade explosions would also be the same as under Alternative 2. It is possible that fewer rifle shots or grenade explosions would be necessary to kill whales under Alternative 3 because of the opportunity to hunt during the summer, when better weather and sea conditions might improve hunter accuracy. Due to the uncertainty associated with such a prediction, however, the analysis makes the conservative assumption that there would be the same number of weapons discharges regardless of the hunting season.

Because Alternative 3 allows for a year-round hunting season that includes better weather conditions and does not place a limit on PCFA whales, it is more likely under Alternative 3 that the Tribe would reach the strike limit than under Alternative 2. It is also more likely that the estimated numbers of unsuccessful harpoon attempts and approaches would occur, as well as the estimated numbers of rifle shots and grenade explosions.

4.1.4 Alternative 4

Alternative 4 has the same restrictions as Alternative 2, but with the additional requirement that hunters maintain a minimum distance of 200 yards from all rocks and islands in the project area. Given the size of the area in which hunting can occur, it is reasonable to expect that the number of whales harvested, struck, struck and lost, subject to harpoon attempts, and subject to approaches would be the same as under Alternative 2, and that there would be the same number of rifle shots or grenade explosions. It is also reasonable to expect that the same number of PCFA whales could be killed as under Alternative 2. As with Alternative 2, the limitations on the hunting season and the harvest of identified whales may make it difficult to harvest the full number of whales allowed.

4.1.5 Alternative 5

Under Alternative 5, the Tribe could hunt at any time during the year within the coastal portion of their U&A, but the limits on the numbers of whales would be lower. Under Alternative 5, the Tribe could harvest two whales, strike three whales, and strike and lose one whale. There would be no limit on the harvest of PCFA whales. Hunting would not be prohibited around any rocks or islands. Given the opportunity to hunt year round and the lower harvest limit, it is reasonable to expect the Tribe would be able to harvest the full number of whales allowed under this alternative. Under Alternative 3, all three whales potentially killed could be PCFA whales. Because the harvest of one whale in 1999 occurred after 10 days of hunting, it is reasonable to expect there would be 20 days of hunting under Alternative 5. Hunting might occur year round but is more likely to occur from April through September.

Applying the Tribe's estimates of unsuccessful harpoon attempts and approaches to the lower number of whales allowed under this alternative, there would potentially be 12 whales subjected to unsuccessful harpoon attempts (four unsuccessful attempts for each of three whales struck) and 60 whales approached (10 whales approached for each of three whales struck, times two whales in a pod) each year. Over the five-year period, there would be 60 whales subjected to unsuccessful harpoon attempts (12 harpoon attempts per year times five years) and 300 whales approached (60 whales approached per year times five years). Also using the calculations described for Alternative 2, there would potentially be 12 rifle shots annually (60 over the five-year period) or nine grenade explosions annually (45 over the five-year period). Given the lower number of whales, and the opportunity to distribute hunting throughout the year, NMFS assumes the Tribe would likely harvest the maximum number of whales allowed under Alternative 5.

4.1.6 Alternative 6

Conditions under Alternative 6 would be the same as under Alternative 3, except that hunting would be allowed within the Strait of Juan de Fuca. Adding this area to the hunt would probably not change the seasons during which hunting would occur or the numbers of gray whales affected relative to those expected under Alternative 3.

4.2 Water Quality

4.2.1 Introduction

This section addresses the potential for the alternatives to affect water quality in the project area, including marine water and groundwater. No hunt-related activities would take place above the high-tide line, so there is no potential to affect surface water quality, including streams and tributaries in Water Resource Inventory Areas 19 and 20. Two issues pertain to the potential effects on water quality of whale hunt-related activities. First is the potential for spills of vessel fuel or other contaminants due to collisions or other incidents involving marine vessels associated with the hunt, including observers and protesters. Second is the potential for groundwater contamination due to leaks of fluids from whale carcasses or tissues that may be disposed of in a landfill. The method for disposing of any unused portions of harvested whales could include towing out to sea or disposal in a landfill. This analysis addresses the effects of disposal in the Neah Bay landfill or a transfer station at the same location. Effects of disposal at sea are addressed in Section 4.3, Marine Habitat and Species.

None of the alternatives has the potential to affect drinking water quality, because no hunt-related activities would have the potential to affect current or future drinking water sources in the project

area. The potential effects on water quality for the marine aquatic ecosystem (other than effects that might be related to spills, which are discussed in Section 4.2.2.1, below) would be negligible because the amount and longevity of any toxins would be minimal. Similarly, there would be no potential for any long-term effects on the management of shellfish beds in the project area because any contaminants found in whales would have no potential to affect shellfish management. The following sections discuss these points in greater detail.

4.2.1.1 Drinking Water Sources

As described in Section 3.2.3.1, Drinking Water Sources, all drinking water in the project area comes from surface water sources. Limited availability of suitable drinking water led to a moratorium on new residential and commercial building on the reservation in 2000. Under the action alternatives, activities related to hunting and butchering whales would occur in marine or intertidal areas and therefore would not expose any current drinking water sources to whale-derived contaminants. Of the three potential future water sources identified in Section 3.2.3.1, Drinking Water Sources, two are surface water and would likewise be unaffected. The third option is a desalinization plant at the outlet of the Wa'atch River. The mechanism used to treat the water at such a plant (reverse osmosis) would produce water that meets federal standards for drinking water even if contaminants are present at the water collection site (for example, reverse osmosis is used to polish secondary effluent from wastewater treatment plants, rendering it suitable for use as drinking water). There is no potential, therefore, for whale-derived contaminants to affect any of the potential future drinking water sources that have been identified in the project area. Disposal of a whale carcass or carcasses in the Neah Bay landfill (or temporary storage at a transfer station, following closure of the landfill) would have the potential to affect only groundwater, so no drinking water sources could be affected. The potential effects on groundwater are discussed in Section 4.2.2.2, below.

4.2.1.2 Marine Waters

In marine and intertidal waters, whale hunting and butchering under the action alternatives would produce two broad classes of potential contaminants: organic material (e.g., blood, lymph, digestive tract contents) and bioaccumulated contaminants (e.g., PCBs, DDTs). During a successful whale hunt, the initial strike and kill would be expected to release substantial amounts of organic matter, which would continue to leak out of the carcass as it was hauled to the beach. The likely effects of this material would be attraction of predators to the blood scent, avoidance of blood by common prey fish species, and secondary effects of decreased dissolved oxygen associated with the breakdown of the organic material by marine bacteria. These effects would

extend over a relatively short period (likely several hours) and would have a very low probability of affecting the marine environment in any detectable manner for more than a day or two.

Any bioaccumulated contaminants in a whale carcass would be associated primarily with whale blubber, most of which would be removed and used for subsistence or ceremonial purposes. As described in Section 1.4.2 (Summary of Recent Makah Whaling – 1998 through 2007), following the successful hunt in 1999, Makah tribal members removed almost all edible portions of the meat and blubber from the whale within approximately 12 hours of towing the whale to shore. Under the action alternatives, if hunting and butchering were to proceed as they did in 1999, there would be little opportunity for contaminant release into the environment through decomposition while a whale is on the beach because the portions with the highest concentrations of contaminants (primarily blubber) would be removed in approximately 12 hours. If the unused portions of the carcass were towed out to sea for post-harvest disposal, some bioaccumulated contaminants might be released into the marine ecosystem. The amount of toxins released from a flensed carcass, however, would be substantially less than the amount from a whale that died and decomposed entirely at sea and, therefore, the expected impact to the marine environment would be negligible. Given the size of the ocean area in which carcasses would be disposed, the removal of most of the blubber from carcasses prior to disposal, and the likely death and decomposition of some whales in the area naturally, the expected impact to the marine environment from carcass disposal would be negligible in any given year or over a period of years.

4.2.1.3 Shellfish Beds

As noted in Section 3.2.3.2 (Shellfish), shellfish beds can be closed to harvest due to the presence of human fecal coliforms or toxic algal blooms. Fecal coliforms are not harmful to shellfish, but may be used to indicate the presence of sewage-borne organisms (pathogens) that cause disease in humans. The release of fecal coliforms into intertidal waters, therefore, would have the potential to affect aquaculture or subsistence harvest of shellfish only if the Washington Department of Health or Makah Fisheries chose to close a beach to harvest as a precautionary measure. Under the action alternatives, butchering a whale on the beach might release fecal coliforms into the intertidal area, where filter-feeding shellfish could accumulate them. Fecal coliforms from a whale, however, do not indicate an elevated risk of the presence of human pathogens. In addition, fecal coliforms are freshwater organisms that typically start to die off within 12 to 48 hours of exposure to marine water.

Regarding toxic algal blooms, research in Puget Sound has not established a statistically significant link between natural or human activities and toxic algal blooms. There is no evidence to suggest that the death of a whale (an ongoing natural process) would affect the probability of a toxic algal bloom occurring, hence requiring a shellfish harvest closure. Based on the above, it is improbable that whale hunt-related activities under the action alternatives would lead to long-term closures of shellfish beds. If, through independent monitoring, the Washington Department of Health or Makah Fisheries found elevated levels of fecal coliforms and closed a beach (which would represent a cautious response to the presence of fecal coliforms in a whale carcass on the beach), the closure could last a few days.

4.2.2 Evaluation Criteria

Two criteria were used to determine the potential for effects on water quality under the alternatives. The first is the likelihood of an increase in the risk associated with fuel spills or the introduction of other toxic substances into the environment. The second is the likelihood of an increase in the risk associated with leakage from whales disposed of in the Neah Bay landfill or transfer facility.

4.2.2.1 Spills

Spills could result from collisions between vessels, equipment failure, or accidental release (e.g., while fueling, or if a vessel capsized). No spills were reported from the 1999 and 2000 hunts, despite a collision between a protest vessel and a law enforcement vessel. If any spills occurred, effects would be minor and short-lived, even if they occurred in a semi-contained area such as Neah Bay. The volume of fuel or other contaminants carried by any hunt-related vessels would be miniscule compared to the volume of water in any potential receiving waters (e.g., Neah Bay, the Strait of Juan de Fuca, and the Pacific Ocean). A spill of fuel or similar fluids would not mix with water, but would form a thin layer on the surface, continually spreading while it evaporated, broke apart, was hydrolyzed by ultraviolet light, and was decomposed by bacteria. This would probably occur over hours or days. The nearshore portion of the Makah U&A corresponds largely with the area to be avoided for the OCNMS, which was designated with the intention of reducing the potential for catastrophic oil spills from large ships (greater than 1,600 gross tons) carrying large amounts of bunker fuel. Any vessels involved in whale hunts, protest activities, or law enforcement would be substantially smaller than that, so any spills in the Makah U&A would not violate the intention of the area to be avoided.

The risk of spills would depend primarily on the amount of hunt-related vessel traffic in the project area (including Makah vessels and associated protest, media, and law enforcement vessels). Vessels and aircraft associated with each hunt would likely be similar to those associated with the previous hunts, described in Section 3.11.3.2.1, Atmospheric Noise. It is possible that the amount of vessel traffic associated with each hunting expedition (including observation, protests, law enforcement, and media coverage) would vary under the action alternatives. For example, alternatives that allow year-round hunting could attract more observers, protestors or media coverage because of better weather conditions. Alternatives that allow more hunts might attract less public interest over time and therefore less media coverage. Because of the difficulty of predicting such variations, and how they might affect the precise amount of vessel traffic, this analysis assumes that each hunting expedition would be accompanied by the same amount of vessel traffic.

The risk of spills might also depend on the hunting season. Hunts conducted during the winter months might face a higher risk of encountering unanticipated storms that could cause vessels to capsize, as compared with hunts conducted during the summer. Thus the risk of spills is likely to depend on the number of days of hunting and the season when hunting occurs. Under any of the action alternatives, the risk from oil spills could be addressed by modifying or supplementing existing spill response plans (Ecology 2003a)(Section 3.2.3.3, Spill Prevention).

4.2.2.2 Groundwater Contamination

As noted above, the method of disposing of any unused portions of harvested whales would either be disposal at sea or in the Neah Bay landfill. The method would likely depend on the location where the whale was landed and butchered. Under the action alternatives, if any unused portions of whale carcasses were placed in the Neah Bay landfill or transfer facility, the potential would exist for contaminants from the carcass to leak through the liner material and mix with groundwater. The risk of groundwater contamination would depend on (1) the concentration of water-soluble contaminants in the unused portions of the carcass, (2) the amount of tissue delivered to the facility, and (3) the occurrence of flaws in the landfill liner. Groundwater contamination is typically detected through monitoring near landfills, but this has not occurred in Neah Bay because that landfill receives approximately 3 tons of solid waste per day (Parametrix 2007), and EPA does not require groundwater monitoring for small landfills that receive less than 20 tons of solid waste per day (EPA 2007). In addition, groundwater does not serve as a drinking water source in the project area. The greatest concentrations of contaminants occur in blubber, most of which would be removed and used for subsistence or ceremonial purposes. Contaminants

in any residual blubber on a carcass would likely be hydrophobic substances such as PCBs and DDT. If any such substances leaked from a landfill, they would adhere to soils and would have a very low probability of reaching groundwater in quantities likely to be toxic.

It is not possible to predict in advance the proportion of harvested whale carcasses that would be disposed of in the landfill, the amount of material on any of those carcasses, or the concentration of contaminants in any of those carcasses. Therefore, the most reliable indicator of the potential risk of groundwater contamination is the number of whales that would be harvested under a particular alternative. This number would depend primarily on harvest limits. In addition, restrictions on hunting seasons and on the harvest of identified whales might affect the Tribe's ability to harvest the full limit allowed.

4.2.3 Evaluation of Alternatives

The following sections consider the potential for the alternatives to pose risks to water quality in the project area. For each alternative, the discussion addresses the potential number of occasions on which hunt-related activity may pose a risk of spills, and the potential amount of waste material from harvested whales that may pose a risk of groundwater contamination.

The lowest risk of adverse effects on water quality would occur under the No-action Alternative, because no whale hunts would be permitted. The risk under the action alternatives would increase, with the amount of increase depending on the number of days of hunting, the hunting season, and the number of whales harvested. Table 4-1 identifies the number of likely days of hunting and the number of whales likely to be harvested under each alternative, and Section 4.1, Introduction, describes the rationale for those numbers.

Compared to the No-action Alternative, the risk of spills would increase under Alternatives 2 and 4 due to increases in vessel traffic over 7 to 30 days and due to the fact that hunting would be limited to the winter and spring periods, when vessels might encounter unanticipated storms and capsize. The risk would increase further under Alternatives 3 and 6 due to an increase in the number of days of hunting (from 7-30 days to 40 days). On the other hand, because Alternatives 3 and 6 allow hunting year-round, the risk of vessels capsizing in unanticipated storms would be reduced compared to Alternatives 2 and 4.

Under Alternative 5, year-round hunting would be allowed. Thus, while Alternative 5 would result in about the same number of hunting days as Alternatives 2 and 4 (20 versus 7 to 30), it would carry a lower risk of vessels capsizing and thus a lower risk of spills. Because Alternative

5 would include fewer hunting expeditions than Alternatives 3 and 6, and all would allow year-round hunting, Alternative 5 would carry a lower risk of spills than Alternatives 3 and 6.

As described above, the most reliable indicator of the potential risk of groundwater contamination is the number of whales that would be harvested under a particular alternative. The No-action Alternative carries the least risk of groundwater contamination because no whales would be delivered to the landfill or transfer station beyond those that might be delivered under current conditions. Under Alternative 5, the number of whale carcasses could increase, relative to the No-action Alternative, by as many as two. Under Alternatives 2 and 4, the increase would be as many as four whales annually, on average, with a maximum of five whales in any one year, but limitations on the hunt might make it difficult for the Tribe to harvest the full number. Under Alternatives 3 and 6, the harvest limits would be the same as under Alternatives 2 and 4, but there is a greater likelihood the Tribe could harvest the full number because of the lack of restrictions on hunting seasons and on the harvest of identified whales.

4.2.3.1 Alternative 1

Under the No-action Alternative, no Makah whale hunt would be authorized and no whale hunting or associated activities (such as vessel traffic, protests, whale butchering and carcass disposal) would be expected to occur in the project area. The amount of marine vessel traffic in the project area would not differ from current levels, and the risk of spills would not change from current levels. With the possible exception of waste material from drift whales (which could be towed out to sea or disposed of on land), no whale tissue or carcasses would be delivered to the Neah Bay landfill or transfer station. If any leakage occurred at the Neah Bay landfill site, the effluent would not be different from current conditions, and the risk of groundwater contamination would remain at current levels.

4.2.3.2 Alternative 2

Under Alternative 2, vessel traffic associated with a hunt would be expected to occur on a total of 7 to 30 days, primarily during April and May. Compared to the No-action Alternative (under which there would be no hunt-related vessel traffic), this would result in an increased risk of fuels or other contaminants being released into the marine environment. As described above, because the vessels associated with hunting would be small, any spills would be rapidly diluted to undetectable concentrations in the Pacific Ocean or local bays. Non-water-soluble contaminants such as petroleum-based fuels would disperse and break down in hours or days. Also, risks due to

spills could be addressed by modifying or supplementing existing spill response plans (Ecology 2003a)(Section 3.2.3.3, Spill Prevention).

Under Alternative 2, the limit on the number of harvested whales would be an average of four whales per year over five years, with no more than five in any one year. It is not possible to predict the proportion of carcasses from those harvested whales that may be disposed of in the landfill or transfer station, but the maximum number would correspond to the harvest limits (an average of four per year and no more than five in any single year). If any leakage occurred at the landfill, the effluent might contain contaminants, which could enter groundwater. For the reasons described above, there would be no expected effect on drinking water sources.

The hunting season under Alternative 2 would be restricted to the period of December 1 to May 31, which would likely limit the number of days that tribal members could hunt, thus reducing their chances of harvesting the average of four whales per year. Limits on the number of identified whales that may be harvested could also reduce the chances of harvesting the average of four whales per year.

4.2.3.3 Alternative 3

Alternative 3 would include the same limits on the number of whales harvested as Alternative 2, but would impose no restrictions on the hunting season or on harvest of identified whales. Under Alternative 3, vessel traffic associated with a hunt would be expected to occur on a total of 40 days. Compared to the No-action Alternative (under which there would be no hunt-related vessel traffic), this would result in an increased risk of fuels or other contaminants being released into the marine environment.

Compared to Alternative 2, there would also be a greater risk of fuels or other contaminants being released into the marine environment because there would be more days of hunt-related vessel traffic (40 days compared to 7-30 days). The increased risk under Alternative 3 versus Alternative 2 would be reduced to some extent by the fact that hunting under Alternative 3 could occur year round (including during seasons with calmer seas), reducing the potential for vessels capsizing in unexpected storms. As described above, because the vessels associated with hunting would be small, any spills would be rapidly diluted to undetectable concentrations in the Pacific Ocean or local bays. Non-water-soluble contaminants such as petroleum-based fuels would disperse and break down in hours or days. Also, risks due to spills could be addressed by modifying or supplementing existing spill response plans (Ecology 2003a)(Section 3.2.3.3, Spill Prevention).

The maximum number of whales that could be harvested under Alternative 3 would be the same as under Alternative 2 (an average of four per year, with no more than five in any one year), but the increased hunting opportunities and the lack of restrictions on identified whales under Alternative 3 would make it more likely that the Tribe could harvest the full number. Therefore, Alternative 3 would have a greater increase in risk of groundwater contamination than would Alternative 2. For the reasons described above, there would be no expected effect on drinking water sources.

4.2.3.4 Alternative 4

Alternative 4 would include the same limits on the number of whales harvested as Alternative 2 and would impose the same restrictions on the hunting season. The additional restrictions contained in Alternative 4 (no hunting within 200 yards of rocks and islands in the Washington Islands National Wildlife Refuges) would not affect the risk of fuel or contaminant spills, nor the number of whales potentially harvested by the Tribe. Therefore, the increased risk of fuels or other contaminants being released into the marine environment, and the increased risk of groundwater contamination from material delivered to landfills, would be the same as under Alternative 2, compared to the No-action Alternative. Also, risks due to spills could be addressed by modifying or supplementing existing spill response plans (Ecology 2003a)(Section 3.2.3.3, Spill Prevention).

4.2.3.5 Alternative 5

Alternative 5 would limit the number of whales that may be harvested to two in any one year and 10 over the five-year period. Year-round hunting would be allowed, making it likely that the full number of whales would be harvested. The expected number of hunting days would be 20 per year. Compared to the No-action Alternative, this alternative would result in increased hunt-related vessel traffic over 20 days, which would lead to an increased risk that fuels or other contaminants might be released into the marine environment. Also, compared to the No-action Alternative, as many as two whales might be discarded in the landfill in any one year, increasing the potential for contaminants to enter the groundwater. For the reasons described above, there would be no expected effect on drinking water sources.

Compared to Alternatives 2 and 4, Alternative 5 might result in about the same number of days of hunting (20 versus 7 to 30) and therefore a comparable risk of fuels or other contaminants being released into the marine environment. Compared to Alternatives 3 and 6, Alternative 5 would be expected to have a lower risk of spills because of fewer days of hunting (20 days versus 40).

Also, risks due to spills could be addressed by modifying or supplementing existing spill response plans (Ecology 2003a)(Section 3.2.3.3, Spill Prevention). Compared to the other action alternatives, Alternative 5 would have a lower risk of groundwater contamination because of the lower limit on the number of whales that could be harvested.

4.2.3.6 Alternative 6

Alternative 6 would include the same provisions as Alternative 3 except that hunting would also be allowed in the Strait of Juan de Fuca portion of the Makah U&A. Alternative 6 would be expected to result in the same number of hunt attempts and the same number of whales harvested as Alternative 3. Thus the increased risk of fuels or other contaminants being released into the marine environment, and the increased risk of groundwater contamination from material delivered to landfills would be about the same as under Alternative 3, compared to the No-action Alternative. Compared to the other action alternatives, Alternative 6 would also be expected to have the same relative effects on water quality as Alternative 3. The only difference between Alternative 6 and Alternative 3 is that Alternative 6 would allow hunting in the strait, so the potential for spills would be expanded from the coastal portion of the Makah U&A to the Strait. As described above, because the vessels associated with hunting would be small, any spills would be rapidly diluted to undetectable concentrations in the Strait. Non-water-soluble contaminants such as petroleum-based fuels would disperse and break down in hours or days. Also, risks due to spills could be addressed by modifying or supplementing existing spill response plans (Ecology 2003a)(Section 3.2.3.3, Spill Prevention).

4.3 Marine Habitat and Species

4.3.1 Introduction

This section evaluates the potential for the six alternatives to affect marine habitat and associated biological resources within the project area. It includes a discussion of the likely ecological consequences of two possible types of effects that were identified through the internal and public scoping processes (Section 1.5.2.2, Marine Habitats and Species): (1) potential direct effects from hunt-related activities such as disturbance associated with marine vessel traffic or disposition of whale carcasses and (2) potential indirect effects resulting from the removal or harassment of gray whales from the local ecosystem, such as reduced benthic disturbance by feeding whales and decreased consumption of pelagic and epibenthic prey. Consistent with the description of marine habitat and associated species in Section 3.3, Marine Habitat and Species, this analysis separately examines the potential effects on pelagic and benthic habitats.

4.3.2 Evaluation Criteria

None of the action alternatives has the potential to appreciably affect the physical features and dynamic processes of the pelagic or benthic environments (described in Sections 3.3.3.1.1, Pelagic Environment, Physical Features and Processes, and 3.3.3.2.1, Benthic Environment, Physical Features and Processes, respectively). The ocean currents, seasonal variability, upwelling, downwelling, eddies, fronts, El Niño Southern Oscillation events, and Pacific Decadal Oscillation that influence the pelagic environment are large-scale, physical oceanographic and climatic processes that cannot reasonably be expected to be affected by the action alternatives, which involve comparatively small-scale, short-term, localized activities. Similarly, the substrata, features (e.g., submarine canyons), and physical disturbances that make up the benthic environment also are large-scale and cannot reasonably be expected to be affected by the small-scale, short-term and localized activities associated with the action alternatives.

Consequently, the evaluation of the action alternatives below focuses on the potential direct and indirect effects on the biological resources associated with the pelagic and benthic environments. For both the pelagic and benthic environments, two criteria were used to determine the potential for effects. The first is the amount of physical disturbance associated with conducting a whale hunt (such as vessel traffic or towing a whale), which could have direct effects on the environment. The second is the change in pelagic or benthic communities in the project area, which could result if gray whales are removed from the project area. The following sections discuss the potential effects in greater detail and how the effects for each alternative may be assessed and differentiated.

4.3.2.1 Pelagic Environment Evaluation Criteria

4.3.2.1.1 Disturbance of Pelagic Species

Hunt-related activities, such as vessel traffic or hauling of whale carcasses, could disturb fish or other pelagic species. This evaluation criterion relates to the potential risk that the action alternatives may affect the distribution and abundance of fish or other pelagic species in the project area. The amount of disturbance and any resulting change in fish distribution or abundance would depend primarily on the amount, distribution, and timing of hunt-related vessel traffic in the project area. The amount of anticipated vessel traffic would depend on the number of hunts initiated and how many whales could be struck or harvested under a given action alternative. The distribution of vessel traffic would depend on the hunt area (that is, whether the Strait of Juan de Fuca is as part of the hunt area) and the specific location of pursued whales at

the time of a hunt. Vessel traffic timing would depend on the hunting season under a given alternative.

4.3.2.1.2 Changes in the Pelagic Community

This evaluation criterion relates to the potential ecological consequences of a whale hunt on the pelagic environment. If the consumption of pelagic prey by gray whales represents a significant factor in determining zooplankton species abundance or plays a significant role in structuring planktonic communities, it is possible that the abundance, species composition, and spatial distribution of pelagic organisms could be altered if whales were harassed in or removed from the project area. The amount of ecological change induced by a whale hunt would depend on the relative change in whale presence and prey consumption, as well as the importance of whale prey consumption relative to oceanographic/climatic processes in determining the dynamics of zooplankton species assemblages in the project area.

4.3.2.2 Benthic Environment Evaluation Criteria

4.3.2.2.1 Disturbance of Benthic Habitat

Potential direct impacts to the benthic habitat from hunting gray whales might result from disturbances associated with increased vessel traffic and disposition of carcasses. Such impacts could include (1) disturbance or damage to eelgrass, surfgrass, kelp beds, or kelp rafts; (2) an increase in the number or generation of kelp rafts; (3) disturbance to nearshore rocky and soft bottom communities; and (4) disturbance or damage to shellfish resources. Each of these potential impacts is considered under the evaluation criterion for assessing disturbances to the benthic habitat and is described in more detail in the following paragraphs.

Hunt-related activities, such as nearshore vessel traffic and hauling whale carcasses, could result in the disturbance of marine plant or kelp beds at or near landing beaches. This analysis considers the frequency and severity of such hunt-related disturbances relative to the natural levels of physical disturbance in the project area. Additionally, the capacity of these marine plant and macroalgal species for growth and recolonization in response to disturbance is an important consideration. The amount of hunt-related disturbance would depend primarily on the amount of hunt-related vessel traffic in the project area. The amount of vessel traffic that may be expected would depend on the number of hunts initiated and how many whales could be struck or harvested under a given action alternative.

Floating rafts of kelp and associated biota occur within the project area. Kelp rafts are generated by storms and other disturbance events that dislodge kelp holdfasts from their attachment to the

substratum. Although kelp rafts are free-floating and associated with the pelagic environment, they are considered in this analysis as part of the benthic habitat as they are the product of benthos disturbance. They are ecologically important to benthic communities as potential vectors of dispersal for benthic species and as possible sources of organic material upon sinking. Hunt-related activities such as vessel traffic could potentially generate kelp rafts by disturbing stands of kelp. Additionally, kelp rafts are susceptible to damage or disturbance if struck by the propellers of vessels associated with the hunt. Any hunt-related generation or disturbance of kelp rafts would occur in the context of background physical processes affecting the generation and disturbance of kelp rafts in the project area. The amount of hunt-related disturbance would depend primarily on the amount of hunt-related vessel traffic in the project area. The amount of vessel traffic that may be expected would depend upon the number of hunts initiated and the number of whales that could be struck or harvested under a given action alternative.

The hauling and landing of whale carcasses on rocky or soft-bottomed nearshore habitats could result in the disturbance of associated species and communities. This analysis considers the frequency and severity of such a hunt-related disturbance relative to background levels of natural disturbance (e.g., storms, wave action, and predation). The amount of hunt-related disturbance would depend primarily on how many whales could be harvested under a given action alternative.

The landing of whale carcasses on beaches with shellfish resources could result in disturbance of these shellfish communities (the potential for hunt-related activities to result in the closure of beaches to shellfish harvest is evaluated in Section 4.2, Water Quality, above). This analysis considers the frequency and severity of such a hunt-related disturbance relative to background levels of natural disturbance (e.g., storms, wave action, and predation). The amount of hunt-related disturbance to shellfish communities would depend primarily on how many whales could be harvested under a given action alternative.

4.3.2.2.2 Changes in Disturbance-dependent Benthic Communities

Potential indirect impacts on the benthic habitat from hunting gray whales may occur if benthic-feeding gray whales were harassed in or removed from the ecosystem. Such impacts include change in the relative level of benthic disturbance due to a decrease in the number of benthic-feeding gray whales and change in the abundance or distribution of benthic prey species due to a decrease in the quantity of benthic food consumed by gray whales.

If feeding-associated disturbance by benthic-feeding gray whales represented a significant factor in structuring benthic communities, benthic communities could be altered if whales were harassed

in or removed from the project area. Background physical processes may include disturbance by storms, wave action, and movement and accumulation of sediments (e.g., turbidity currents). Background biological processes may include seasonality and variability of surface water productivity and delivery of organic material to the benthic communities. The amount of ecological change induced by a whale hunt would relate to changes in whale presence, as well as the importance of whale prey consumption relative to other physical and biological processes in determining the dynamics of benthic species assemblages in the project area.

This analysis also considers the potential ecological consequences of a whale hunt on the benthic environment. If the consumption of benthic prey by gray whales represents a significant factor in determining species abundance and distribution, the abundance, species composition, and spatial distribution of benthic food items might be altered if whales were removed from or harassed in the project area. The amount of ecological change induced by a whale hunt would relate to changes in whale presence and prey consumption, as well as the importance of whale prey consumption relative to other physical and biological processes in determining the dynamics of benthic species assemblages in the project area.

4.3.3 Evaluation of Alternatives

The following sections consider the potential for the alternatives to affect pelagic and benthic habitats and associated biological resources in the project area. For each alternative, risks to both pelagic and benthic environments are discussed. The analysis evaluates potential effects due to direct disturbance and indirect ecological effects of a whale hunt under a given alternative.

The marine environment of the project area, as noted in Section 3.3.1, Introduction, is highly energetic, productive, and variable due to the dynamic physical oceanographic processes and the high levels of physical disturbance characteristic of the Washington coast. The abundance, recruitment, distribution, and variation in marine species and communities in the project area strongly reflect the underlying physical environment. When evaluated in the context of this energetic and dynamic environment, evaluation of the alternatives indicates that none has the potential to appreciably affect pelagic or benthic habitats or the associated organisms and communities. The following sections discuss these conclusions in more detail.

4.3.3.1 Alternative 1

Under Alternative 1, the No-action Alternative, no whale hunt would be permitted, no associated activities (e.g., increased vessel traffic) would be expected to occur, and no whales would be harassed in or removed from the project area. The dynamic processes described in Section 3.3.3,

Existing Conditions, would be expected to continue in both the pelagic and benthic environments. No direct disturbance resulting in the altered presence or abundance of fish or other pelagic species would be expected, nor would pelagic species or the community experience any indirect ecological consequences because there would be no hunting activities. Similarly, no direct disturbance would affect marine plant or kelp beds, kelp rafts, nearshore communities, or nearshore shellfish resources, nor would benthic species and communities experience indirect ecological effects.

4.3.3.2 Alternative 2

Whale hunts would be permitted under Alternative 2, resulting in an expected increase in hunt-associated vessel traffic over the No-action Alternative, as well as the harassment or removal of whales from the project area. The number of days of hunting anticipated under Alternative 2 would be 7 to 30. An average of four whales may be harvested per year, with no more than five harvested in a single year. No more than seven whales may be struck per year, and no more than 35 may be struck over a five-year period. No more than three whales may be struck and lost in any year. Limits on the hunting season (December 1 through November 31) and limits on the numbers of identified whales that may be harvested, may make it difficult for tribal members to harvest the full number of whales allowed.

4.3.3.2.1 Pelagic Environment

Compared to the No-action Alternative, Alternative 2 would likely result in an increased level of direct disturbance due to hunt-associated vessel traffic and the hauling of whale carcasses that have been harvested. These activities might disturb fish or other pelagic species in the project area. Any such disturbance would, however, likely be minor (vessels are small and the area is large and highly energetic), local (limited to waters near the activity), and of short duration (minutes to hours). Because any disturbance would be minor, localized, and short-term, it would be unlikely to result in an appreciable change in the presence, distribution, or abundance of fish and other pelagic species in the project area, compared to current conditions under the No-action Alternative.

This alternative would involve pursuit and hunting of gray whales, and it would likely result in harassment or removal of whales from the project area. As noted above, the potential ecological effect of removing whales from the ecosystem on pelagic species and assemblages would depend on (1) the relative change in whale presence and prey consumption and (2) the relative

importance of whale prey consumption in determining the dynamics of zooplankton species assemblages in the project area.

The consumption of pelagic prey by gray whales is not likely a significant factor in structuring pelagic communities relative to the highly variable and energetic oceanographic and climatic processes characteristic of the project area. As discussed in Section 3.3.3.1, Pelagic Environment, the physical features and ephemeral, seasonal, interannual, and interdecadal physical oceanographic processes largely control the abundance, distribution, and species composition of pelagic prey in the region. However, even assuming that gray whales do play a substantial role in structuring pelagic communities, the potential relative change in the number of whales under this and the other action alternatives would probably not result in any appreciable ecological effects. The number of whales allowed to be removed represents a small proportion of the ENP gray whale population or the number of whales observed migrating through the project area (less than 1 percent of some 20,000 whales, and less than 5 percent of the 464 whales observed in the Makah U&A [Section 3.4.3.3, Distribution and Habitat Use]). Furthermore, the number of whales potentially removed is substantially smaller than the observed levels of interannual variability in whale abundance within the project area. Consequently, any relative change in the quantity of pelagic prey consumed due to removal of whales under Alternative 2 would be negligible and lower than the expected levels of natural variability.

4.3.3.2.2 Benthic Environment

Compared to the No-action Alternative, an increased level of direct disturbance would probably occur under Alternative 2 due to hunt-associated vessel traffic and the hauling of whale carcasses. The expected amount of disturbance to eelgrass, surfgrass, kelp beds, and shellfish communities would depend on the specific route of hunt-associated vessels, as well as the location of these communities relative to the landing beach for any whale carcasses. The marine plant, macroalgal, and shellfish communities in the project area thrive in a highly energetic and disturbance-prone nearshore environment such that any hunt-associated disturbance effects would likely be insignificant relative to the high levels of natural background disturbance. Furthermore, the high capacity of these species for growth and recolonization suggests that hunt-associated disturbance effects, if any, would be short-lived. Similarly, any direct disturbance to kelp rafts would likely be insignificant relative to the background physical processes affecting the generation and distribution of kelp rafts in the project area.

As discussed above, in evaluating the potential consequences of whale removal for the pelagic environment, the potential change in the number of whales under this and the other action alternatives would be small relative to the overall whale population and natural levels of variability in whale presence. Consequently, the removal of whales would probably not appreciably change background levels of benthic disturbance or the quantity of benthic prey consumed. Furthermore, whale foraging does not appear to play a significant role in structuring benthic and epibenthic communities in the project area. Rather, these benthic communities are most strongly affected by the presence of benthic features (e.g., submarine canyons), physical disturbance processes (such as storms, wave action, and the movement and accumulation of sediments), and ephemeral, seasonal, interannual, and interdecadal physical and biological processes affecting the delivery of organic material from productive surface waters.

Any whales struck and killed but lost would affect the benthic environment by providing 'whale fall' microhabitats. This would also be the case for carcasses of any whales harvested and disposed of at sea. As the whale decays on the ocean floor, it provides an ephemeral habitat associated with a unique and diverse invertebrate community. Whale falls occur naturally when individuals die and sink to the sea floor. Under Alternative 2, up to three whales may be struck and lost per year (presumably resulting in whale falls), and up to 15 whales may be struck and lost over a five-year period. No estimates are available for the annual level of natural mortality that may occur within the project area. Such an estimate would be useful for establishing a background level of whale falls expected to occur naturally, enabling a comparison with the number of additional whale falls that might be generated under Alternative 2. Compared to the annual level of natural mortality for the ENP gray whale stock (with a population of some 20,000), the addition of three whale falls annually would be minor.

4.3.3.3 Alternative 3

Alternative 3 would include the same limits on total numbers of whales struck, harvested, and struck and lost as Alternative 2, but there would be no limits on identified whales and no seasonal restrictions on hunting. tribal members would likely hunt year round, including during summer and early autumn, when weather conditions would be less likely to interfere with hunting opportunities and compromise hunter safety. Compared to Alternative 2, more opportunities for hunting would probably result in a greater number of hunting expeditions (40 days under Alternative 3 compared to 7-30 days under Alternative 2), with an attendant increase in vessel traffic. There is also a greater likelihood under Alternative 3 than under Alternative 2 that the full number of whales could be harvested, because of the year-round opportunity to hunt and the lack

of limits on identified whales. The increased number of days of hunting and greater likelihood that the full number of whales would be towed to shore would be expected to result in slightly increased effects over those anticipated under Alternative 2, compared to the No-action Alternative.

4.3.3.3.1 Pelagic Environment

The risk of direct disturbance of fish and other pelagic species under this alternative, although potentially higher than under Alternative 2, would still be minor, localized, and of short duration. Similarly, for the reasons described under Alternative 2, even though there is a greater chance that the full number of whales may be removed, any removal of whales under Alternative 3 is not likely to result in indirect ecological effects on pelagic communities. Thus, compared to the No-action Alternative, Alternative 3 is not likely to result in an appreciable change in the presence, distribution, or abundance of fish and other pelagic species in the project area.

4.3.3.3.2 Benthic Environment

The risk of direct disturbance of benthic marine plant, macroalgal, shellfish, and kelp raft communities under this alternative, although potentially greater than under Alternative 2, would be negligible relative to the high levels of background disturbance and the strong capacity of these species for growth and recolonization. Similarly, for the reasons described under Alternative 2, any removal of whales under Alternative 3 is not likely to result in indirect ecological effects on pelagic communities. Thus, Alternative 3 would probably not result in an appreciable change in benthic communities compared to current conditions under the No-action Alternative.

4.3.3.4 Alternative 4

Alternative 4 would include the same limits on the number of whales harvested as Alternative 2 and would impose the same restrictions on the hunting season. The additional restrictions contained in Alternative 4 (no hunting within 200 yards of rocks and islands in the Washington Islands National Wildlife Refuges) would not affect the likely number of hunting expeditions, patterns of vessel traffic, or the number of whales potentially struck, harvested, or struck and lost. Therefore effects on marine habitat and species under Alternative 4 would likely be the same as those described under Alternative 2.

4.3.3.4.1 Pelagic Environment

Similar to Alternative 2, this alternative would likely result in minor, local and short-term effects on pelagic communities through direct disturbance. Similarly, for the reasons described under

Alternative 2, any removal of whales under Alternative 4 is not likely to result in indirect ecological effects on pelagic communities. Thus Alternative 4 would probably not result in appreciable changes in the presence, distribution, or abundance of fish and other pelagic species in the project area compared to current conditions under the No-action Alternative.

4.3.3.4.2 Benthic Environment

Similar to Alternative 2, the risk of direct disturbance of benthic marine plant, macroalgal, shellfish, and kelp raft communities under this alternative would be negligible relative to the high levels of background disturbance and the strong capacity of these species for growth and recolonization. Similarly, for the reasons described under Alternative 2, any removal of whales under Alternative 4 is not likely to result in indirect ecological effects on pelagic communities. Thus, Alternative 4 would probably not result in an appreciable change in benthic communities compared to current conditions under the No-action Alternative.

4.3.3.5 Alternative 5

Alternative 5 would limit the number of whales that may be struck, harvested and struck and lost in any one year to three, two and one, respectively. Year-round hunting would be allowed, making it likely that the full number of whales would be harvested. The expected number of hunting days would be 20 per year. Therefore effects on marine habitat and species under Alternative 4 would likely be less than those described under Alternative 2.

4.3.3.5.1 Pelagic Environment

Any direct disturbance effects under this alternative on fish and other pelagic species would likely be local and short-term, for the reasons described under Alternative 2. Similarly, for the reasons described under Alternative 2, any removal of whales under Alternative 5 is not likely to result in indirect ecological effects on pelagic communities. Because Alternative 5 would result in fewer hunting expeditions and fewer whales removed from the project area than Alternatives 2, 4, 3 and 6, it would have less potential for effects than these alternatives. Alternative 5 would probably not result in appreciable changes in the presence, distribution, or abundance of fish and other pelagic species in the project area compared to current conditions under the No-action Alternative.

4.3.3.5.2 Benthic Environment

Any direct disturbance effects under this alternative on benthic marine plant, macroalgal, shellfish, and kelp raft communities would be negligible relative to the high levels of background disturbance and the strong capacity of these species for growth and recolonization, as described under Alternative 2. Similarly, for the reasons described under Alternative 2, any removal of

whales under Alternative 5 is not likely to result in indirect ecological effects on pelagic communities. Because Alternative 5 would result in fewer hunting expeditions and fewer whales removed from the project area than Alternatives 2, 4, 3, and 6, it would have less potential for effects than these alternatives. Thus, Alternative 4 would probably not result in an appreciable change in benthic communities compared to current conditions under the No-action Alternative.

4.3.3.6 Alternative 6

Alternative 6 would include the same provisions as Alternative 3 except that hunting would also be allowed in the Strait of Juan de Fuca portion of the Makah U&A. Alternative 6 would be expected to result in the same number of hunt attempts and the same number of whales struck, harvested, and struck and lost as Alternative 3. Therefore effects on marine habitat and species under Alternative 6 would likely be the same as those described under Alternative 3, except that the geographic scope of potential effects would expand to the Strait of Juan de Fuca.

4.3.3.6.1 Pelagic Environment

As described under Alternative 3, the risk of direct disturbance of fish and other pelagic species under this alternative, although potentially higher than under Alternative 2, would still be minor, localized, and of short duration. Similarly, for the reasons described under Alternative 2, even though there is a greater chance that the full number of whales may be removed, any removal of whales under Alternative 6 is not likely to result in indirect ecological effects on pelagic communities. Thus, compared to the No-action Alternative, Alternative 6 is not likely to result in an appreciable change in the presence, distribution, or abundance of fish and other pelagic species in the project area.

4.3.3.6.2 Benthic Environment

As described under Alternative 3, the risk of direct disturbance of benthic marine plant, macroalgal, shellfish, and kelp raft communities under this alternative, although potentially greater than under Alternative 2, would be negligible relative to the high levels of background disturbance and the strong capacity of these species for growth and recolonization. Similarly, for the reasons described under Alternative 2, any removal of whales under Alternative 6 is not likely to result in indirect ecological effects on pelagic communities. Thus, Alternative 6 would probably not result in an appreciable change in benthic communities compared to current conditions under the No-action Alternative.

4.4 ENP Gray Whale

4.4.1 Introduction

This section addresses the potential for the alternatives to affect ENP gray whales at three scales: the ENP gray whale stock as a whole, whales using local summer feeding areas (specifically the Makah U&A and Oregon Southern Vancouver Island [ORSVI]), and individual whales. For the ENP gray whale stock as a whole, the analysis considers potential effects on abundance and viability. For whales using the Makah U&A and ORSVI summer feeding areas, the analysis considers potential effects on abundance and on distribution and habitat use. The reasons for analyzing effects in these two summer feeding areas are described more fully below. For effects on individual whales, the analysis considers time to death and hunting efficiency (the ratio of harvested to struck-and-lost whales) associated with the alternative methods of striking and killing whales. These methods are limited to what NMFS considers reasonable options for striking and killing whales (Section 2.4.5, Employ Different Hunting Methods), including using either a toggle-point harpoon as the primary striking method and .50 caliber rifle as the killing method, or using an explosive projectile as the striking and killing method.

Chapter 5 considers whether the effects on gray whales that might result from implementing any of the alternatives would be likely to have cumulative effects in the context of past actions, other contemporaneous actions, or reasonably foreseeable future actions that may affect gray whales, such as other human or natural sources of mortality, potential development in the project area, or global climate change.

4.4.2 Evaluation Criteria

Four criteria were used to determine the potential for effects on ENP gray whales under the alternatives: (1) change in abundance and viability of the ENP gray whale stock, (2) change in abundance of gray whales using the Makah U&A and ORSVI summer feeding areas, (3) change in distribution or habitat use of gray whales in the Makah U&A or elsewhere in the Pacific Coast Feeding Aggregation (PCFA) survey area, and (4) welfare of struck or harvested whales. The following sections discuss risks to gray whales at each of these scales and how the effects of the alternatives may be assessed and differentiated.

4.4.2.1 Change in Abundance and Viability of the ENP Gray Whale Stock

As described in Section 4.1, Introduction, the catch limit for the ENP gray whale stock set by the IWC would remain the same under all six alternatives – 620 whales over five years (annual average of 124), with a limit of 140 whales in any one year. The difference among the

alternatives is how much of the catch would be allocated to the Makah Tribe. Because the ENP gray whale stock is a single stock, and all six alternatives contemplate the same overall catch limit for the stock, the effect on the abundance and viability of the ENP gray whale stock as a whole is likely to be the same under any alternative – there would be a decrease in abundance in any year by an average of 124 whales, and there would be no effect on the viability of the gray whale stock as a whole because the IWC catch limit is well within the level that is sustainable for the stock.

Section 3.4.3.4.1, Abundance, and Table 3-2 summarize NMFS' abundance estimates for the ENP gray whale stock as a whole. NMFS currently considers the ENP gray whale stock to be within its optimum sustainable population level (Section 3.4.3.4.5, Estimates of Carrying Capacity (K), OSP, and PBR) and considers a stock that is at OSP to be viable and remain viable as long as total human-caused mortality remains below PBR (Section 3.4.2.1.4, Defining and Calculating PBR, and Section 3.4.3.4.5, Estimates of Carrying Capacity (K), OSP, and PBR). NMFS has calculated an acceptable PBR for the ENP gray whale stock as 417 whales per year. Under all of the alternatives, the abundance of the gray whale stock would be reduced by an average of 124 whales each year, and no more than 140 whales in any one year. Because this mortality level is well below the PBR of 417, none of the alternatives would be expected to change the viability of the ENP gray whale stock.

Hunt-related activities, particularly pursuit and unsuccessful harpoon attempts, may cause stress that increases whales' susceptibility to predation or disease, ultimately increasing the level of mortality beyond whales directly killed during hunting (Section 3.4.3.5.2, Whale Response to Being Pursued). Gray whales being pursued by whale-watching vessels have been observed to change course and alter swimming speed and respiratory patterns, potentially indicating stress (Section 3.4.3.6.6, Vessel Interactions). The Tribe estimates that over the five-year period of its proposed hunting, a maximum of 700 whales might be approached and 140 whales exposed to unsuccessful harpoon attempts. As described above, if no harvest is allocated to the Makah Tribe, the entire IWC catch limit of 620 gray whales over five years would be available for harvest by the Chukotka Natives. No information is available on the proportion of whales approached and subjected to unsuccessful harpoon attempts in the Chukotkan hunt. Such information would allow a comparison of the ENP gray whale stocks' likely exposure to stressful hunt-related activities under any of the action alternatives (involving a Makah hunt) versus the No-action Alternative (involving only a Chukotkan hunt). However, given the total number of ENP gray whales hunted, there is likely to be no appreciable difference in stress-related mortality between an alternative in

which the Chukotka Natives harvest an average of 124 whales per year while the Makah harvest none (the No-action Alternative), and alternatives in which the Chukotka Natives harvest an average of 120 whales per year while the Makah harvest 20 (the most the Makah can harvest under any of the action alternatives).

4.4.2.2 Change in Abundance of Gray Whales Using the Makah U&A or ORSVI Survey Areas

As noted in Section 4.1, Introduction, all six alternatives include the same level of harvest from the ENP gray whale stock as a whole. The alternatives vary, however, in the number of whales that would be harvested from the Makah Tribe's U&A. Under Alternatives 2, 3, 4, and 6, 20 of the 620 whales allowed under the IWC five-year catch limit would be allocated to the Makah Tribe (with an annual maximum limit of five) and subject to harvest in the Tribe's U&A. Under Alternative 5, 10 of the 620 whales would be allocated to the Makah Tribe (with an annual maximum limit of two). In addition, Alternatives 2 to 6 vary in (1) the number of whales that may be struck and lost during hunting, (2) the number of identified whales from the PCFA survey areas that may be harvested, and (3) the timing and location of hunting. These variations may have different effects on the abundance of gray whales using local survey areas.

This analysis considers effects on abundance of gray whales in two local survey areas – the Makah Tribe's U&A (which includes the northern Washington coast and Strait of Juan de Fuca survey areas), and ORSVI. As described in Section 3.4.3.3.1, Summer Range Distribution and Habitat Use, this analysis considers these local survey areas as a way to evaluate local effects of the alternatives. The survey areas themselves are not biological designations but have been defined by researchers because whales can be found using these areas or because of some management objective relevant to these areas (such as the Tribe's proposed hunt).

The court in *Anderson v. Evans* (2004) found that NMFS' previous environmental review did not adequately consider potential local effects of a Makah gray whale hunt because it did not address the number of gray whales in the area from which they would be removed (the Makah U&A) (Section 3.4.3.3.1, Summer Range Distribution and Habitat Use). Accordingly, this analysis addresses likely effects of the alternatives on abundance of ENP gray whales in the Tribe's U&A. Although Alternatives 2 through 5 restrict hunting to the coastal portion of the Tribe's U&A, and only Alternative 6 allows hunting in the Strait of Juan de Fuca portion of the Tribe's U&A, the analysis of all of the alternatives considers abundance in both portions of the Tribe's U&A. This is because of the overlap of whales identified in both areas. If there were a decrease in abundance of whales using the coastal portion of the Tribe's U&A under alternatives that limit hunting to

that area, it could also result in a decrease in abundance of whales using the Strait of Juan de Fuca. The joint consideration of these two areas in evaluating gray whale abundance in the Makah U&A is in contrast to the individual consideration they receive in evaluating distribution and habitat use in the Makah U&A (Section 4.4.2.3, Change in Distribution or Habitat Use).

In addition to the Makah U&A, this analysis focuses on the ORSVI survey area. Calambokidis et al. (2004a) recommended using the ORSVI as a logical and reasonable management area for considering impacts of gray whale harvests in the Makah U&A because of the relatively high rates of interchange between the ORSVI survey area and the Makah U&A. About 50 percent of whales seen in the ORSVI are also seen in the northern Washington coast/Strait of Juan de Fuca survey areas, compared to about 30 percent of whales seen in the PCFA also being seen the northern Washington coast/Strait of Juan de Fuca survey areas (Section 3.4.3.3.1, Summer Range Distribution and Habitat Use). They also recommended using the PBR method for estimating a sustainable level of removal of whales from the ORSVI. Because Calambokidis et al. (2004a) consider the ORSVI survey area to be appropriate for managing a gray whale harvest in the Makah U&A, because the Tribe's proposal adopts that recommendation, and because the MMPA includes the PBR approach as a management tool, this EIS evaluates the alternatives by comparing whale mortalities that would occur under each alternative to the PBR level that would be appropriate for the abundance of whales in the ORSVI.

The analysis also discusses effects on whales identified in the larger PCFA survey area, though not in the same level of detail as whales in the Makah U&A and ORSVI survey areas. This is the area NMFS considered relevant in its 2001 EA. It is also relevant to the Makah's proposal (Alternative 2) because the Tribe proposes to set an allowable bycatch level that would apply to any PCFA whale.

This portion of the analysis considers change in abundance in these local survey areas that might result if whales are killed during hunting (either harvested or struck and lost). It is also possible that animals could stop using an area because of the disturbance associated with a hunt. That possibility is evaluated in Section 4.4.2.3, Change in Distribution or Habitat Use. Section 4.1, Introduction, describes both the maximum and the likely number of PCFA whales that could be killed under each alternative from a combination of being harvested or struck and lost. That information is summarized in Table 4-2.

TABLE 4-2. NUMBER OF PCFA, ORSVI AND MAKAH U&A WHALES THAT MAY BE KILLED UNDER EACH ALTERNATIVE (MAXIMUM AND LIKELY)

Alternatives	No-Action	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
PCFA Whales		Annual/Five-Year	Annual/Five-Year	Annual/Five-Year	Annual/Five-Year	Annual/Five-Year
Maximum	0	4/20	Up to 7/35	4/20	Up to 3	Up to 7/35
Likely*	0	1.25/6.27	Up to 7/35	1.25/6.27	Up to 3	Up to 7/35
ORSVI Whales						
Maximum	0	4/20	Up to 7/35	4/20	Up to 3	Up to 7/35
Likely*	0	1.25/6.27	unknown**	1.25/6.27	unknown**	unknown**
Makah U&A Whales						
Maximum	0	4/20	Up to 7/35	4/20	Up to 3	Up to 7/35
Likely*	0	0.88/4.38	unknown**	0.88/4.83	unknown**	unknown**

* These numbers represents an estimate based on early season photo-identification data collected from 1998-2005 and on an assumption of seven whales struck each year (Calambokidis 2007). For the reasons described in section 4.1.2, Alternative 2, this assumption is conservative.

** Alternatives 3, 5, and 6 would allow year-round hunting. Without knowing when the Tribe would hunt, it is not possible to estimate a likely number of identified whales that would be killed, so only the maximum is estimated.

Additional stress-related mortalities resulting from pursuit or unsuccessful harpoon attempts are possible (Section 4.4.2.1, Change in Abundance and Viability of the ENP Gray Whale Stock), but no information is available or could reasonably be obtained that would support an estimate of stress-related mortality of identified summer-feeding whales.

Section 3.4.3.3.1, Summer Range Distribution and Habitat Use, describes gray whale use of local survey areas during the summer feeding period. As described in that section, during 1 June-30 November for 1998-2005, 464 unique whales were observed in the PCFA, with 311 observed within the smaller ORSVI region, and 115 observed within the smaller Makah U&A (Table 3-4). Tables 3-2 through 3-4 also report the number of newly observed whales in each survey area, and newly observed whales that then return in a subsequent year to each survey area. These tables show that new whales visit the PCFA, ORSVI, and Makah U&A survey areas each year, and many of those return in subsequent years.

In any given year in which a harvest occurred under Alternatives 2 to 6, the abundance of gray whales in the Makah U&A and ORSVI survey areas would be at least temporarily reduced by the number of identified whales killed (either harvested or struck and lost). It is possible that an identified whale removed from these areas could be replaced during the same year by a whale from outside the area. Calambokidis et al. (2004a) observed that many whales feeding during the summer throughout the PCFA survey area move great distances among areas, and that the presence of prey is likely what attracts whales to certain areas. During the course of the summer feeding period it is therefore possible that whales from outside the Makah U&A or the ORSVI survey areas would be traveling through these areas and stay to feed on available prey. Whether replacement would occur in the same year would depend on the number of whales removed, the availability of prey within the local survey areas relative to its availability in outside areas, and the opportunity for whales from outside the area to discover an unexploited source of prey. As a matter of probabilities, the smaller the number of whales removed, the greater the chance a removed whale would be randomly replaced by a new whale in the same year. Thus alternatives with lower rates of removal are likely to have less effect on gray whale abundance in local survey areas during the year in which hunting occurs.

In subsequent years, it is likely that new whales would replace identified whales removed from the Makah U&A or the ORSVI survey areas, because of the recruitment of new whales, but it is difficult to predict at what rate this would occur. There are no population-driven reasons why new whales would not replace whales that were removed: (1) gray whales identified as using local survey areas are not genetically distinct from the ENP gray whale stock as a whole, (2) there is no evidence of familial recruitment in the local survey areas, and (3) PCFA whales are not demographically independent from the ENP gray whale stock. Calambokidis et al. (2004a) proposed that individuals recruit into the local survey areas in the southern portion of the summer range from the migratory population as feeding habitat becomes available along the migration route. Alternatives with lower rates of removal are likely to have less effect on gray whale abundance in local survey areas in subsequent years because there are fewer whales to replace.

Over the long term, assuming prey continues to be available in these areas, it is likely that whales removed from the Makah U&A or ORSVI survey areas would be replaced, although it is not possible to predict how long it would take for replacement to occur. Regardless of whether hunting occurs, gray whale use of the Makah U&A or ORSVI survey areas can be expected to fluctuate over time as prey availability fluctuates in these areas relative to other feeding areas.

4.4.2.2.1 PBR of Whales in the ORSVI Survey Area

As described above, this analysis also considers the number of PCFA whales that might be removed under each alternative relative to the Tribe's proposed allowable bycatch level, which is based on a PBR that would be appropriate for the abundance of ORSVI whales. This analysis is included because it is an important component of the Tribe's proposal, because the MMPA explicitly adopts a PBR approach to marine mammal management, and because it provides continuity with the PBR method NMFS used in its 2001 EA. NMFS' 2001 EA focused on a PBR appropriate for the abundance of PCFA whales. The present analysis focuses instead on a PBR appropriate for ORSVI whales because that is what the Tribe proposed and what Calambokidis et al. (2004a) recommended. Alternatives 2 and 4 would adopt the Makah proposal to set an allowable bycatch level for PCFA whales that is established annually using the PBR approach applied to the minimum estimated abundance of ORSVI whales. The allowable bycatch level would be set each year based on an annually updated minimum estimate of abundance of ORSVI whales[5]. If the Tribe harvested a whale identified from anywhere in the PCFA survey area (an area larger than the ORSVI survey area and containing more identified whales), those would be counted against the allowable bycatch level.

Under the Makah proposal, the allowable bycatch level for PCFA whales would be adjusted annually based on the estimated minimum abundance of ORSVI whales. Using the Tribe's proposed method (which results in a 2.35 percent rate) and the current minimum abundance of ORSVI whales (106), the annual PBR would be 2.49 and the five-year PBR would be 12.45 (2.49 times five years). As described above, struck and lost whales may be ORSVI (or PCFA) whales, but would not count toward the allowable bycatch level under the Tribe's proposal. Section 4.1, Introduction, and Table 4-2, describe the maximum and likely number of ORSVI whales killed under each of the five action Alternatives (2 to 6). Under Alternatives 2 and 4, the maximum number of ORSVI whales killed could, over the five years of hunting, be 15, which would exceed by 2.5 whales the PBR level resulting from the Tribe's proposed method. The likely number of PCFA whales killed, however, would be 5.6 over five years, well under the 12.5 PBR level resulting from the Tribe's proposed method.

[5] As described in Section 3.4.3.3.1, Southern Portion of the Summer Range, the abundance of ORSVI whales is not the total number of whales identified in the ORSVI, but the number of whales observed in more than one year, or observed over a long enough period during a single year that it could be predicted it would return. Subtracted from this is an estimated annual mortality based on the mortality rate for the entire ENP gray whale stock.

Alternatives 3 and 6 would allow the same number of whales to be harvested, struck and struck and lost as Alternatives 2 and 4, but would not place limits on the hunting season or the harvest of PCFA whales. Under these alternatives, the number of whales killed each year from the PCFA, ORSVI, and/or Makah U&A survey areas would depend on when the Tribe chose to hunt. Any whales killed during the period June 1 through November 30 would, by definition, be Makah U&A whales (as well as ORSVI and PCFA whales). For a whale killed outside of this period, as described above, there would be some probability it would be an identified summer-feeding whale (18 percent chance of a PCFA whale, 16 percent chance of an ORSVI whale, and 11 percent chance of a Makah U&A whale). Without knowing when the Tribe would hunt, it is not possible to estimate the likely number of identified whales that would be removed each year, so this analysis considers the maximum potential removals, which would be seven annually and 35 over five years (Table 4-2). This five-year number would exceed the five-year PBR of 12.5 for ORSVI-identified whales.

Alternative 5 would limit the number of whales that could be harvested in any year to two and the number that could be struck to three, thus limiting the total number potentially killed each year to three. As described above for Alternatives 3 and 6, all of these could be PCFA whales. The five-year number of 15 identified whales would exceed the PBR of 12.5 for ORSVI whales by 2.5 whales over five years.

Concerns about exceeding the PBR under any of the action alternatives could be addressed through a variety of methods, some of which are incorporated in the Tribe's proposal (for example, by limiting the timing and location of the hunt, and the number of identified whales that may be landed). Estimates of the proportion of PCFA whales present in the Makah U&A during April and May (the time when hunting is most likely to occur under Alternatives 2 and 4) are based on a small number of observations. Improved monitoring in the Makah U&A during April and May could increase confidence about the likelihood that any whale struck and lost was a PCFA whale.

Concerns about exceeding the Tribe's proposed PBR could also be addressed for any alternative by reducing the number of whales that could be struck and lost (and therefore the number of whales of unknown identity) or, for Alternatives 2 and 4, the number of identified whales that could be killed and landed. For Alternatives 3, 5, and 6 (which permit hunting year-round), concerns about exceeding PBR could be partially addressed by requiring some portion of the allowable harvest to be taken outside the summer feeding period.

4.4.2.3 Change in Distribution or Habitat Use

This analysis considers the potential for ENP gray whales to change their distribution and habitat use in response to a tribal hunt under the action alternatives. Responses could include changes in the distance whales travel from shore during migration; changes in numbers or location of whales feeding within the Makah U&A or elsewhere in the PCFA survey area; changes in the amount of time spent by whales feeding while in the Makah U&A or elsewhere in the PCFA survey area; changes in the numbers of whales using an area; or changes in the approachability of whales.

Gray whales being pursued by whale-watching vessels have been observed to change course and alter swimming speed and respiratory patterns temporarily (Section 3.4.3.6.6, Vessel Interactions). Studies of whale-watching activities in the lagoons of Baja California documented that gray whales were less likely to flee as the season progressed (Section 3.4.3.6.5, Offshore Activities and Underwater Noise). It is reasonable to expect that whales approached by Makah whale-hunting vessels would react in a similar, temporary manner. It is uncertain what the longer term effects would be on whales exposed to repeated approaches. The studies of whale-watching activities suggest the whales might become habituated and have less of a reaction the more frequently they are approached. It is uncertain how whales would react to unsuccessful harpoon attempts, but the reaction may be similar to that observed in whales that are tagged or biopsied. Such reactions are likely to be dramatic but temporary changes in behavior (Section 3.4.3.6.6, Vessel Interactions). Whales may be less likely to habituate to unsuccessful harpoon attempts than to approaches of vessels. It is unknown whether whales in the vicinity of successful harpoon attempts will develop an association between vessel approaches and harpoon strikes and over time begin to avoid vessels.

During migration, it is uncertain what factors affect gray whale distribution and habitat use. While there is evidence that gray whales will alter course or swimming speed in response to disturbances, there is no evidence that the disturbance is more than temporary (Section 3.4.3.6, Known and Potential Anthropogenic Impacts). Clarke and Moore (2002) found there was little evidence that gray whales disturbed by human activities travel far in response or remain disturbed for long.

During feeding, the factor most strongly affecting gray whale distribution and habitat use is likely the availability of prey. Darling et al. (1998) and Moore et al. (2007) document abandonment of feeding areas and establishment of new feeding areas linked to natural variation in prey availability. Feeding gray whales change location and habitat to exploit the optimum prey species

at any one time, based on abundance, density, size, caloric content, and predation pressure. Such factors may vary by season and year, depending on environmental variability and the population dynamics of prey (Section 3.4.3.1.3, Feeding Ecology and Role in the Marine Ecosystem).

Gray whales using the southern portion of the summer range tend to move up and down the coast during the feeding period, presumably searching for prey. Some whales remain in local areas for weeks or months; others may be present only for brief periods (Section 3.4.3.3.1, Summer Range Distribution and Habitat Use). It is possible that a hunt and associated activities in the Makah U&A might disturb whales, causing them to move elsewhere in search of feeding opportunities away from these activities. The severity of this effect would depend, in part, on the extent of the disturbance. Thus alternatives that result in more whales approached or subjected to harpoon attempts, or result in more days of hunting, are likely to cause more disturbance of feeding gray whales. The severity of the effect would also depend, in part, on the sensitivity of gray whales to disturbance in feeding areas. Available information indicates that feeding gray whales may not abandon feeding areas because of hunt-related disturbance. The pursuit of gray whales during the aboriginal hunt in the Chukotkan region of Russia does not appear to have diminished the opportunity for that subsistence hunt, as it has been ongoing for several years. This indicates that, at least in one part of their summer range, gray whales have not abandoned areas where they are subject to hunting.

Concerns about whales avoiding or abandoning the Makah U&A as a result of hunt-related activity could be addressed by continued monitoring aimed at detecting changes in whale distribution and habitat use (although changes in distribution would more likely be related to changes in prey distribution rather than hunt-related activity). Other options to address this concern include setting limits on the numbers of whales that could be approached or subjected to strike attempts or reducing the number of whales that may be struck and lost.

4.4.2.4 Method of Striking and Killing; Time to Death; Hunting Efficiency

The Tribe proposes to hunt gray whales using a toggle-point harpoon to strike and secure whales and a .50 caliber rifle to kill those that have been struck and secured. The Tribe also proposes a number of measures to contribute to the safety and efficiency of the hunt, including a minimum distance from a whale before firing, minimum visibility conditions under which a weapon may be fired, motorized chase vessels to pursue whales and provide a shooting platform and to tow killed whales to shore, and training for hunters. In addition to the Tribe's proposed hunting weapons, this analysis considers the option of using explosive projectiles to strike and kill gray whales,

either attached to a hand-thrown harpoon or delivered by a shoulder gun. These techniques have been used in the Chukotka Native gray whale hunt. Explosive projectiles may contain black powder or penthrite. Section 2.3.3.2.5, Overview of Proposed Hunting Method, describes these hunting methods, either of which may be used with any of the action alternatives (Alternatives 2 through 6).

This analysis examines the manner of death and the time to death of individual whales using either of two different general hunting methods: (1) a toggle-point harpoon for striking whales and a .50 caliber rifle for killing whales, or (2) an explosive projectile for both striking and killing whales, delivered either using a hand-thrown darting gun (a striking weapon that attaches a line and floats to the whale), or a shoulder gun (a killing weapon that does not secure the whale and is not used until the whale is secured). It also examines the potential for individual whales to be struck and lost, compared to whales struck and successfully landed (referred to as hunting efficiency). The more efficient the hunt, the greater the likelihood that fewer whales would be struck and killed in reaching the hunting quota, thus limiting impacts to fewer individual whales.

This section does not focus on the welfare of individual whales (Section 3.4.3.5, Welfare of Individual Whales) that would be the target of pursuit or unsuccessful harpoon attempts. Welfare effects on those whales are considered at the scale of the ENP gray whale stock and of whales that use local survey areas (Section 4.4.2.1, Change in Abundance and Viability of the ENP Gray Whale Stock, and Section 4.4.2.2, Change in Abundance of Gray Whales Using the Makah U&A or ORSVI Survey Areas) (this section does, however, consider whether approaches by Makah hunting vessels and unsuccessful harpoon attempts would affect gray whale distribution and habitat use).

4.4.2.4.1 Method of Striking and Killing, Time to Death

A toggle-point harpoon penetrates the epidermis and blubber of the whale and toggles open to secure the whale. The area of trauma is the area penetrated by the harpoon. There is evidence that a harpoon strike causes pain as whales may respond to being struck by diving, thrashing, or ramming a boat (Section 3.4.3.5.3, Whale Response to Being Struck). The .50 caliber bullet is targeted at the brain or central nervous system of the whale and causes death by penetrating and damaging the brain or central nervous system. Like the harpoon strike, a bullet causes trauma in the area of penetration. Time to death for the whale killed in the Makah hunt in 1999 was 8 minutes from the time the whale was struck with the harpoon until it was apparently rendered insensible from the second of two rifle shots. Time to death for the whale killed in the

unauthorized hunt in 2007 was 11 hours from the time the whale was struck (or the first shot was fired) until the whale apparently died and sank. In the 2006 Chukotka Native hunt, for whales killed using rifles only as the killing weapon, they reported an average time to death of 47 minutes for 40 whales (minimum 5 minutes, maximum 3 hours and 20 minutes, median 35 minutes). It is reasonable to expect that average time to death in a Makah hunt using a .50 caliber rifle as the killing weapon would be shorter than average time to death in the Chukotka Native hunt because the Makah Tribe would use a higher-caliber rifle, which would kill a gray whale more effectively than a lower-caliber rifle used by the Chukotka Native hunters (Section 3.4.3.5.4, Method of Killing and Time to Death). It is also possible that other requirements of the Makah hunt – minimum visibility conditions, minimum shooting distance, use of a look-out, and training – would result in a shorter time to death than documented in the Chukotka Native hunt.

It is difficult to compare the time to death of the whale during the unauthorized Makah gray whale hunt in 2007 to expected time to death in a future authorized hunt. During the 2007 hunt many of the procedures proposed by the Makah were not followed (such as training of the shooter). In addition, the at-sea intervention of the Coast Guard and NOAA's subsequent deliberation regarding what action to take with the wounded whale potentially prevented the tribal members or tribal authorities from taking further action to ensure the whale was killed more expeditiously. In addition, it is not known what ammunition the unauthorized hunters used nor the number of times that each rifle was fired. The experience of the 2007 unauthorized hunt emphasizes the importance of adopting and enforcing procedures governing the safety and humaneness of the hunt, in the event a hunt is authorized.

Concerns about time to death for individual whales, particularly in light of the unauthorized Makah hunt in September 2007, could be addressed by improved enforcement of the regulations proposed by the Makah to govern a hunt, including training of marksmen, maintenance and control of weapons and ammunition, and requirements for a chase boat with a look-out. It is uncertain whether use of an explosive projectile could reduce time to death. Other options for reducing time to death include improved enforcement of the moving exclusionary zone (MEZ) and allowing a hunt during better weather conditions (Alternatives 3, 5, and 6).

The alternative method of striking and killing whales is the use of explosive projectiles, delivered either by a hand-thrown darting gun or a shoulder gun. Explosive projectiles cause more extensive trauma at the site of penetration than a harpoon or bullet and can cause trauma at a farther distance from the site of penetration. Unlike a toggle-point harpoon, which would not kill

a whale immediately, an explosive projectile used for striking a whale may result in instantaneous or nearly instantaneous insensibility or death. In 2006, for whales killed using a darting gun with a black powder explosive projectile, Chukotka Native hunters reported an average time to death of 32 minutes for 88 whales (minimum 3 minutes, maximum 3 hours, median 30 minutes). In field trials testing the use of penthrite grenades in the Alaska bowhead hunt, time to death was on average 50 percent of the time to death using black powder grenades. It is uncertain what the average time to death would be for gray whales killed in a Makah gray whale hunt using explosive projectiles as the striking and killing weapon, though it is possible that average time to death would be lower than with the alternative method (toggle-point harpoon and rifle), because the striking weapon has the potential to quickly kill the whale or render it insensible.

4.4.2.4.2 Timing of Hunt and Time to Death

Regardless of the method selected, alternatives that would allow year-round hunting (Alternatives 3, 5, and 6) might result in shorter times to death for individual whales than alternatives that would limit hunting to the period of December 1 through May 31 (Alternatives 2 and 4). This is because the limited hunting season would include periods of rougher weather and sea conditions, which might hamper the accuracy of hunters using harpoons, rifles, or explosive projectiles. Less accurate weapon strikes would likely increase the time to death (Section 3.4.3.5.4, Method of Killing and Time to Death).

4.4.2.4.3 Hunting Efficiency

The proportion of gray whales struck and lost in the Chukotka Native hunt averaged about 4 percent (approximately a 95 percent efficiency rate) over three hunting seasons from 2004 to 2007. The Russian Federation reported that Chukotka Native hunters experienced fewer whales struck and lost when explosive projectiles were used. Given the lack of experience with a Makah gray whale hunt, it is not possible to predict the proportion of whales likely to be struck and lost under any of the alternatives, nor is it possible to predict the relative proportion of struck and lost whales using the alternative hunting methods. The Makah proposal (Alternative 2) would allow for 15 whales struck and lost over 5 years and 20 harvested (a 57 percent efficiency rate).

Concerns about hunting efficiency could be addressed by decreasing the allowable numbers of whales struck and lost in a Makah hunt. Concerns could also be addressed by allowing hunting during more favorable weather conditions. Regardless of the hunting method selected, alternatives that would allow year-round hunting (Alternatives 3, 5, and 6) might result in greater hunting efficiency than alternatives that would limit hunting to the period of December 1 through

May 31 (Alternatives 2 and 4). This is because the limited hunting season would include periods of rougher weather and sea conditions, which might hamper the accuracy of hunters using harpoons, rifles, or explosive projectiles. Less accurate strikes might result in more whales struck and lost. In addition, rough weather conditions might make it more difficult to land a killed whale, potentially increasing the proportion of struck and lost whales.

4.4.3 Evaluation of Alternatives

The following sections consider the potential for the alternatives to affect the ENP gray whale stock as a whole; gray whales in the Makah U&A, ORSVI, or elsewhere in the PCFA survey area; gray whale distribution and habitat use within the Makah U&A or elsewhere in the PCFA survey area; and the manner and time to death of individual whales. The risk of adverse effects on the ENP gray whale stock as a whole would be small under any of the alternatives, including the No-action Alternative. This is because the IWC catch limit remains the same under all alternatives, so the same total number of whales is likely to be removed from the stock by hunting. The difference between the No-action Alternative and the action alternatives is that under the action alternatives, some of that harvest would take place in the Makah U&A. Thus none of the action alternatives would result in an increased risk to the ENP gray whale stock as a whole, beyond the No-action Alternative.

The lowest risk to the abundance of whales in the Makah U&A and ORSVI survey areas would occur under the No-action Alternative, under which no Makah whale hunts would be authorized. It is unlikely that Makah U&A whales and ORSVI whales would be present in the area of the Chukotka hunt and thus killed under the No-action Alternative. In contrast, the risks to the abundance of whales in the Makah U&A and ORSVI survey areas would be higher under the action alternatives due to the likelihood that some Makah U&A whales and ORSVI whales would be killed in a Makah hunt. Alternatives 3 and 6 would carry the greatest risks to the abundance of whales in the Makah U&A and ORSVI survey areas because no seasonal restrictions would be imposed on whale hunting activities, increasing the chances of a Makah U&A or ORSVI whale being killed, and because there would be no limits on the number of PCFA whales that could be killed. Alternatives 2 and 4 would carry the least risk to the abundance of whales in the Makah U&A and ORSVI survey areas because hunting would be limited to the migration period and because a limit would be set on the number of PCFA whales that could be harvested. Alternative 5 would carry an intermediate risk to the abundance of whales in the Makah U&A and ORSVI survey areas. The lower total limit on strikes would limit the number of whales potentially killed

to three per year, but all three whales could be Makah U&A and ORSVI whales because hunting would be allowed year round and there would be no limits on the numbers of PCFA whales that could be harvested.

4.4.3.1 Alternative 1

Under the No-action Alternative, NMFS would not allocate a gray whale quota to the Makah Tribe, and no authorized hunting by the Makah would occur. As described in Section 4.1, Introduction, the current annual and five-year IWC allowable catch limits set for ENP gray whales are based on a joint request of the Russian Federation (for Chukotka Natives) and the United States (for the Makah Tribe). The number of gray whales that may be removed from the ENP stock during the five-year period from 2008 through 2012 would be no more than the catch limit of 620 whales, with no more than 140 whales taken in any one year. The effects on the abundance and viability of the ENP gray whale stock would not differ from current conditions; current data indicate that the ENP gray whale population is at or near the upper limit of its OSP (Section 3.4.3.4.4, Population Dynamics and Trends). The IWC catch limit of not more than 140 whales per year is well below the limit NMFS calculates as the PBR for this stock. It is not possible to estimate the difference in stress-related mortality that the ENP gray whale stock would experience if 8 to 20 whales are killed in the Chukotka hunt under the No-action Alternative instead of being killed in a Makah hunt under the action alternatives.

Under the No-action Alternative, ENP gray whale health, abundance, and habitat conditions would remain as the status quo for the stock as a whole and for whales in the Makah U&A and ORSVI survey areas. Domestic prohibitions on gray whale take pursuant to Section 101 of the MMPA would continue, would require authorization from NMFS, and would be subject to public review.

Factors that could cause a change in distribution or habitat use, such as variability in prey abundance from environmental perturbation, vessel traffic and noise, or commercial fisheries, would similarly be expected to remain at present levels.

4.4.3.2 Alternative 2

Under Alternative 2, whale hunting may occur from December 1 through May 31 in the Makah U&A. An average of four whales could be harvested by the Makah, seven struck, and three struck and lost per year. During any five-year period, up to 20 whales might be harvested, with 35 struck and 15 struck and lost. Whales that are struck are considered killed. As many as 140 whales may be approached by whale hunting vessels in any one year and up to 28 whales may be exposed to

unsuccessful harpoon attempts. With seven strikes allowed, there could be a maximum of 28 rifle shots fired or 21 grenade explosions. Inclement weather conditions during the hunting season might practically limit hunting to a total of 7 to 30 days during April and May. Given the limited number of actual hunting days available under Alternative 2, the Tribe might not be able to harvest the full number of whales allowed.

4.4.3.2.1 Change in Abundance and Viability of ENP Gray Whales

The potential direct and indirect mortality resulting from the whale hunt and hunt-related activities under Alternative 2 would be unlikely to change ENP gray whale stock abundance or viability compared to the No-action Alternative. As noted in Section 4.1, Introduction, the catch limit for the ENP gray whale stock set by the IWC would not change under this or any of the other alternatives, thus the same number of ENP gray whales would likely be harvested over five years under Alternative 2 as under the No-action Alternative. The ENP gray whale stock is within its OSP range (Section 3.4.3.4, Current Status of the Gray Whale Population), and the anticipated annual gray whale mortality under Alternative 2 (or any of the alternatives, including the No-action Alternative) would not exceed PBR for the ENP gray whale stock. If a Makah hunt for 20 whales over five years resulted in a higher level of stress-related mortality than would occur if those 20 whales were harvested in a Chukotkan hunt under the No-action Alternative, the difference is unlikely to have an appreciable effect on the abundance and viability of the ENP gray whale stock as a whole. This is because the stress-related mortality associated with harvesting 20 whales over five years is likely to be minor in the context of the existing Chukotkan harvest level of 600 whales over five years.

4.4.3.2.2 Change in Abundance of Gray Whales Using the Makah U&A and ORSVI Survey Areas

Under Alternative 2 there could be an increased risk to abundance of gray whales using the Makah U&A and ORSVI survey areas, compared to the No-action Alternative, though the increased risk would be small. Under Alternative 2, the Makah hunt would occur between December 1 and May 31, during the migration period, to reduce the likelihood of killing identified summer-feeding whales. As described in Table 4-2, the maximum number of Makah U&A whales killed would be 4 per year and 20 over five years and the likely number would be 0.88 per year and 4.38 over five years. The maximum number of ORSVI whales would be 4 per year or 20 over five years and the likely number would be 1.25 per year or 6.27 over five years.

It is uncertain whether other whales would take the place of killed Makah U&A whales or ORSVI whales during the year in which they were killed. Under Alternative 2, the most likely scenario is

that about one Makah U&A whale or ORSVI whale would be killed annually. Whales identified in the PCFA survey area could take the place of whales removed from the ORSVI, and whales identified in the ORSVI survey area could take the place of whales removed from the Makah U&A. Gray whales feeding in the southern portion of the summer range move great distances within a year (Section 3.4.3.3.1, Summer Range Distribution and Habitat Use). Thus it is reasonable to expect that one removed whale could be replaced in the year in which it was removed.

In subsequent years, it seems likely that a whale removed under Alternative 2 would be replaced. As described in Section 3.4.3.3.1, Summer Range Distribution and Habitat Use, Calambokidis et al. (2004a) propose that whales likely recruit to the Makah U&A or other parts of the PCFA survey area from the migratory population, as feeding habitat becomes available along the migration route. From the 1999-2005 data, an annual average of 4.66 new whales (Table 3-4) were seen in the Makah U&A and were subsequently seen in another year (Section 3.4.3.3.1, Summer Range Distribution and Habitat Use) which demonstrates that the observed level of annual recruitment is greater than the likely and maximum number of removals from the entire PCFA. The recruitment numbers in the ORSVI and PCFA were even larger. Therefore, replacement in subsequent years appears to be almost certain. If for some reason new whales did not take the place of killed whales in subsequent years, the Tribe's allowable bycatch level would decrease over time, because of the Tribe's proposal to base its allowable bycatch limits on the annually-updated lower abundance estimate of whales identified in the ORSVI survey area.

Compared to the No-action Alternative, in which no Makah U&A or ORSVI whales are likely to be killed by hunting, Alternative 2 represents an increase in risk to the abundance of gray whales using the Makah U&A and ORSVI survey areas during the summer period. The risk of a change in abundance compared to the No-action Alternative is slight when considered in the context of the numbers of whales available to replace killed whales.

PBR of Whales in the ORSVI

This EIS also evaluates each alternative relative to the PBR calculated for whales identified in the ORSVI survey area, as proposed by the Makah. As described in Section 4.1, Introduction, the PBR for whales identified in the ORSVI survey area, under the Tribe's proposed method, would be 2.5 whales per year, or 12.5 whales over five years. As described in Table 4-2, the most likely scenario is that under Alternative 2 about one ORSVI whale would be killed each year (estimated 1.12) and about six ORSVI whales would be killed over five years (estimated 6.27). If the

maximum potential number of ORSVI whales were killed under Alternative 2, that number would exceed the PBR level of whales in the ORSVI (a total of 20 whales over five years, versus a PBR of 12.5 whales over five years). This risk may be mitigated by the fact that under Alternative 2, harvest of a whale identified anywhere in the PCFA survey area (as opposed to only whales from the smaller ORSVI) would be counted against the allowable bycatch level.

Implementing Alternative 2 would increase the risk of exceeding the PBR of whales identified in the ORSVI survey area compared to the No-action Alternative. Under the No-action Alternative, there is no possibility of exceeding the PBR of ORSVI whales because none would be hunted. Under Alternative 2, the most likely scenario is that the PBR of ORSVI whales would not be exceeded (6.27 whales would be killed over five years compared to a PBR of 12.5 whales over five years); under the maximum scenario, the PBR of ORSVI whales could be exceeded (20 whales killed over five years compared to a PBR of 12.5 whales over five years).

4.4.3.2.3 Change in Distribution or Habitat Use

There is a risk that implementing Alternative 2 could cause a change in gray whale distribution or habitat use in the coastal portion of the Makah U&A or elsewhere in the PCFA survey area compared to the No-action Alternative. Gray whales that are approached by vessels often exhibit temporary behavioral responses, such as changing course, swimming speed, and respiratory patterns (Section 3.4.3.6.6, Vessel Interactions). There is no evidence that gray whales have altered their distribution or habitat use in lagoons in their winter range in response to the presence of whale-watching vessels (Section 3.4.3.6.6, Vessel Interactions). While some researchers have suggested that gray whales may have altered their migration distance from shore in response to vessels and other human activity, other researchers concluded there is no evidence suggesting such a relationship (Section 3.4.3.6.6, Vessel Interactions). Little information is available on interactions between vessels and gray whales in their summer range. No studies are available regarding changes in distribution or habitat use of gray whales feeding in areas where a hunt by Chukotka Natives hunt has been ongoing for many years (Table 3-49), suggesting whales continue to be available for harvest in feeding areas that are regularly harvested. Thus available information indicates that gray whale distribution and habitat use will not change compared to the No-action Alternative.

Migrating Whales

Migrating whales travel 1 to 2 miles offshore on their northward migration and may travel further from shore during the southward migration (Section 3.4.3.1.4, Seasonal Migrations). Because

hunting under Alternative 2 would occur over a total of 7 to 30 days, primarily during April and May, it would affect mostly migrating whales. The number of whales potentially exposed to an approach by a Makah canoe (140 per year) represents less than one percent of the total gray whale population of 20,000, while the number exposed to unsuccessful harpoon attempts (28), would be an even smaller fraction. Thus while there is a potential for implementation of Alternative 2 to result in migrating gray whales changing their distribution or habitat use, the risk is likely small, suggesting that gray whale distribution and habitat use will not change compared to the No-action Alternative.

Feeding Whales

During the hunting season under Alternative 2, 12.5 percent would be expected to be whales that have been seen in the Makah U&A during June 1 to November 30, while 17.9 percent would be expected from those seen in the larger ORSVI region (Section 3.4.3.3.2, Winter Range Distribution and Habitat Use). Thus of the 140 whales potentially approached, 17.5 (on average) would be expected from the Makah U&A, and 25 would be expected from the ORSVI region. Of the 28 whales potentially subjected to harpoon attempts, 3.5 would be expected from the Makah U&A, and five would be expected from the larger ORSVI region. Surveys have identified between seven and 31 whales in the coastal portion of the Makah U&A in a single year, and between 129 and 206 whales in the PCFA survey area in a single year (Section 3.4.3.3.1, Summer Range Distribution and Habitat Use).

It is reasonable to expect that approaches by Makah whale-hunting canoes would cause a disturbance similar to or less than that observed from approaches of motorized whale-watching vessels or vessels used for photo identification work. Thus whale response to approaches is likely to be temporary (minutes or hours). It is less certain what effect an unsuccessful harpoon attempt would have. For PCFA whales, the percentage of whales exposed to unsuccessful harpoon attempts is likely small enough to not affect overall gray whale use of the PCFA survey areas outside the Makah U&A. It is uncertain whether the intensity of unsuccessful harpoon attempts would result in more than a temporary disturbance of Makah U&A whales and cause them to avoid portions of the Makah U&A either for a short period (days to weeks), or a longer period (for example, over a period of years). As described in Section 4.4.2.3, Change in Distribution or Habitat Use, availability of prey may be the factor most strongly affecting gray whale distribution during feeding. If prey is available in the Makah U&A, hunting by the Makah Tribe might not result in either a short- or long-term response from summer-feeding whales. Many new whales are seen in the Makah U&A every year (Section 3.4.3.3.1, Summer Range Distribution and

Habitat Use). Thus even if some whales do abandon the area as a result of hunting disturbance, new whales that had not previously been exposed to hunting might come into the area.

The example of gray whale distribution in areas hunted by Chukotka Natives may be instructive in trying to predict whether there would be a change in distribution or habitat use of gray whales in the larger PCFA survey area. Scores of whales have been hunted by Chukotka Natives for several years (Table 3-43). The fact that whales continue to be available for harvest suggests that the disturbance associated with the Chukotka Native hunt may not have resulted in a change in distribution or habitat use. On the other hand, gray whales using the southern portion of the summer range tend to move up and down the coast extensively during the feeding period, presumably searching for prey (Section 3.4.3.3.1, Summer Range Distribution and Habitat Use). Moreover, the areas under consideration for hunting are a small portion of the whales' summer range; if there are other feeding areas that are not subject to hunting disturbance, the whales can and may easily move to those other areas. Thus available information indicates that gray whale distribution and habitat use will not change compared to the No-action Alternative.

4.4.3.2.4 Manner and Time to Death

As discussed in Section 4.1, Introduction, the number of gray whales that might be harvested from the ENP stock under all alternatives, including Alternative 2 and the No-action Alternative, would not change. It would remain at the existing IWC catch limit of 620 whales in a five-year period, and no more than 140 whales in any one year. The difference is that under the No-action Alternative, the entire catch could be taken by Chukotka Natives, while under Alternative 2, the Makah Tribe could take up to 20 of the 620 catch limit.

Whales killed with a rifle in a Makah hunt under Alternative 2 could experience a shorter time to death than whales killed with a rifle in a Chukotka Native hunt because of the requirements proposed by the Makah (such as minimum visibility) and because the Makah would use a higher caliber killing weapon than the Chukotka Natives use. Whales killed with an explosive grenade in either hunt would likely experience a similar time to death, thus Alternative 2 would probably not represent a difference in manner and time to death from the No-action Alternative. Thus compared to the No-action Alternative, Alternative 2 could result in the same or lesser time to death, depending on the weapon used.

The proportion of whales struck and lost could be greater in a Makah hunt under Alternative 2 than a Chukotka Native hunt under the No-action Alternative because the Chukotka Natives have more recent hunting experience. The Chukotka Natives report that 4 percent of the whales struck

in their hunt are lost. It is not possible to predict a proportion of whales that would be struck and lost in a Makah hunt under Alternative 2, but the Tribe's proposal includes a potential of three whales struck and lost for four whales harvested before the seven-strike limit would be reached. The proportion of whales struck and lost under Alternative 2 could also be greater than the proportion in a Chukotka Native hunt because seasonal restrictions on the Makah hunt under Alternative 2 could result in hunts occurring in rough weather and sea conditions. Hunting under unfavorable conditions could reduce the accuracy of the hunters and make it more difficult to successfully land a killed whale (thus increasing the proportion of whales struck and lost).

4.4.3.3 Alternative 3

Under Alternative 3, whale hunting may occur year round in the coastal portion of the Makah U&A. An average of four whales per year could be harvested, seven whales could be struck, and three struck and lost. During any five-year period, up to 20 whales might be harvested, with 35 struck and 15 struck and lost. Whales that are struck are considered killed. As many as 140 whales may be approached by whale-hunting vessels in any one year and up to 28 whales may be subjected to harpoon attempts. Hunting could potentially occur on a total of 40 days. With seven strikes allowed, the analysis assumes there could be a maximum of 28 rifle shots fired or 21 grenade explosions. Given the opportunity to hunt year round, it is likely the Tribe would be able to harvest the full number of whales allowed.

4.4.3.3.1 Change in Abundance and Viability of ENP Gray Whales

Under Alternative 3, as with all of the alternatives, including the No-action Alternative, the same number of whales would likely be harvested – 620 over five years and no more than 140 in any single year. The potential effects on the abundance of the ENP gray whale stock would likewise be the same – an average annual reduction of 124 whales per year. The potential effect on viability of the ENP gray whale stock would be negligible because the mortality level would not approach PBR, as discussed above under the No-action Alternative and Alternative 2. Alternative 3 would not change the risk to the abundance and viability of the ENP gray whale stock compared to the No-action Alternative.

4.4.3.3.2 Change in Abundance of Gray Whales Using the Makah U&A and ORSVI Survey Areas

Under Alternative 3 there could be an increased risk to abundance of gray whales using the Makah U&A and ORSVI survey areas, compared to the No-action Alternative. Under this alternative, there would be no limit on the hunting season or the number of identified whales that could be harvested. All of the hunting could occur during the summer period (June 1 through

November 30), when any whale present in the Makah U&A would, by definition, be a Makah U&A and ORSVI whale. It is not possible to predict the likely number of identified whales that would be killed under this Alternative without knowing when tribal members would hunt. Of the seven whales that could be killed per year under this Alternative, all seven could be Makah U&A and ORSVI whales.

If seven Makah U&A/ORSVI whales were killed under Alternative 3, it is uncertain whether other whales would take their place during the year in which they were killed. Seven whales are more than the observed annual recruitment to the Makah U&A. So it is possible that there would be a decrease in abundance under this alternative compared to the No-action Alternative. Whales identified in the PCFA survey area could take the place of whales removed from the ORSVI, and whales identified in the ORSVI survey area could take the place of whales removed from the Makah U&A (Section 3.4.3.3.1, Summer Range Distribution and Habitat Use). Gray whales feeding in the southern portion of the summer range move great distances within a year (Section 3.4.3.3.1, Summer Range Distribution and Habitat Use), thus it is reasonable to expect that some removed whales could be replaced in the year in which they were removed. It is also uncertain how quickly Makah U&A/ORSVI whales removed under Alternative 3 would be replaced in subsequent years. As described in Section 3.4.3.3.1, Summer Range Distribution and Habitat Use, Calambokidis et al. (2004a) propose that whales likely recruit to the Makah U&A or other parts of the PCFA survey area from the migratory population randomly, as feeding habitat becomes available along the migration route. Thus it appears likely that at least some of the removed whales could be replaced in subsequent years. Under Alternative 3, the Tribe's harvest would not be adjusted based on abundance of ORSVI whales, although presumably if whales were not available to harvest the Tribe's harvest level would potentially decrease as a practical matter.

Compared to the No-action Alternative, in which no Makah U&A or ORSVI whales are likely to be killed by hunting, Alternative 3 represents an increase in risk to the abundance of gray whales using the Makah U&A and ORSVI survey areas during the summer period. Although the precise number of Makah U&A and ORSVI whales removed cannot be predicted, as many as seven could be killed each year. Given the numbers of whales available to replace them, it is unlikely all seven would be replaced during the year in which they were removed. It is uncertain whether seven would be replaced in the subsequent year. Compared to Alternative 2, Alternative 3 represents a potential seven-fold increase in the risk to abundance of whales in the Makah U&A and ORSVI survey areas, because of the potential for seven of these whales to be killed per year compared to about one whale per year under Alternative 2.

PBR of Whales in the ORSVI

If seven whales from the ORSVI survey area were killed, this would exceed the PBR for whales in the ORSVI survey area proposed by the Makah (potentially seven whales killed compared to the PBR of 2.5 using current abundance estimates). In comparison, under the No-action Alternative there would be no risk of exceeding PBR. Alternative 3 would also result in an increased risk of exceeding PBR, compared to Alternative 2, under which the most likely scenario would result in the death of one ORSVI whale, and the maximum scenario would result in the death of three ORSVI whales.

4.4.3.3.3 Change in Distribution or Habitat Use

There is a risk that implementing Alternative 3 could result in a change in gray whale distribution or habitat use in the coastal portion of the Makah U&A or elsewhere in the PCFA survey area, for the same reasons as described under Alternative 2.

Migrating Whales

Migrating whales travel 1 to 2 miles offshore on their northward migration and may travel further from shore during the southward migration (Section 3.4.3.1.4, Seasonal Migrations). Because hunting under Alternative 3 could occur year round, it could affect both migrating and feeding gray whales. Thus fewer than 140 migrating gray whales would potentially be approached in a year and fewer than 28 would be subjected to unsuccessful harpoon attempts. The number of whales approached would be less than one percent of the total gray whale population of 20,000, while the number exposed to unsuccessful harpoon attempts (28) would be an even smaller fraction. Thus while there is a potential for implementation of Alternative 3 to result in migrating gray whales changing their distribution or habitat use, the risk is likely small, suggesting that gray whale distribution and habitat use will not change compared to the No-action Alternative..

Feeding Whales

Hunting under Alternative 3 could occur year round and much of it would potentially take place during the period from May through September. During the period from June 1 through November 30, any gray whale found in the Makah U&A would, by definition, be a Makah U&A whale, and, by extension, a PCFA whale. As described previously, between seven and 31 whales have been identified in the coastal portion of the Makah U&A in a single year, and between 129 and 206 have been identified in the PCFA in a single year. While the actual number of whales in the Makah U&A is likely larger, it is probably not larger than the number of whales in the larger ORSVI. With the potential for 140 approaches and 28 unsuccessful harpoon attempts over 40

days, it is mathematically possible that every Makah U&A whale could be approached by tribal hunting vessels on multiple occasions, and that every Makah U&A whale could be subject to harpoon attempts. For PCFA whales, the number of whales present in any year is also likely larger than the number observed, although the actual number is unknown.

It is reasonable to expect that approaches by Makah whale-hunting canoes would cause a disturbance similar to or less than that observed from approaches of motorized whale-watching vessels. Thus whale response to approaches is likely to be temporary (minutes or hours). It is less certain what effect an unsuccessful harpoon attempt would have. It is uncertain whether the intensity of unsuccessful harpoon attempts would result in more than a temporary disturbance of Makah U&A whales and cause them to avoid portions of the Makah U&A either for a short period (days to weeks), or a longer period (for example, over a period of years). It is also uncertain whether such disturbance in the Makah U&A would cause PCFA whales to change their distribution or habitat use in the larger PCFA survey area. As described in Section 4.4.2.3, Change in Distribution or Habitat Use, availability of prey may be the factor most strongly affecting gray whale distribution during feeding. If prey is available in the Makah U&A or PCFA, hunting by the Makah Tribe might not result in either a short- or long-term response from summer-feeding whales. Many new whales are seen in the Makah U&A every year (Section 3.4.3.3.1, Summer Range Distribution and Habitat Use). Thus even if some whales do abandon the area as a result of hunting disturbance, new whales that had not previously been exposed to hunting might come into the area, suggesting that gray whale distribution and habitat use will not change compared to the No-action Alternative.

Compared to Alternative 2, Alternative 3 has a greater potential for resulting in a change in distribution or habitat use of feeding gray whales in the coastal portion of the Makah U&A and PCFA survey areas. The opportunity for year-round hunting under Alternative 3 means that all whales subject to approaches or unsuccessful harpoon attempts could be summer-feeding whales, representing a much larger proportion of Makah U&A and PCFA whales than would be the case under Alternative 2. In addition, the potential time in which feeding whales are exposed to hunting is much greater under Alternative 3.

4.4.3.3.4 Manner and Time to Death

As discussed in Section 4.1, Introduction, the number of gray whales that might be harvested from the ENP stock under all alternatives, including Alternative 3 and the No-action Alternative, would not change. It would remain at the existing IWC catch limit of 620 whales in a five-year

period, and no more than 140 whales in any one year. The difference is that under the No-action Alternative, the entire catch could be taken by Chukotka Natives, while under Alternative 3, the Makah Tribe could take up to 20 of the 620 catch limit.

Whales killed with a rifle in a Makah hunt under Alternative 3 could experience a shorter time to death than whales killed with a rifle in a Chukotka Native hunt under the No-action Alternative because of the requirements proposed by the Makah (such as minimum visibility) and because the Makah would use a higher caliber killing weapon than the Chukotka Natives use. Whales killed with an explosive grenade in either hunt would likely experience a similar time to death, thus Alternative 3 would probably not represent a difference in manner and time to death from the No-action Alternative. Thus compared to the No-action Alternative, Alternative 3 could result in the same or lesser time to death, depending on the weapon used.

The proportion of whales struck and lost could be greater in a Makah hunt under Alternative 3 than a Chukotka Native hunt under the No-action Alternative because the Chukotka Natives have more recent hunting experience. The Chukotka Natives report that 4 percent of the whales struck in their hunt are lost. It is not possible to predict a proportion of whales that would be struck and lost in a Makah hunt under Alternative 3, but the Tribe's proposal includes a potential of three whales struck and lost for four whales harvested before the seven-strike limit would be reached.

Compared to Alternative 2, under Alternative 3 it would be more likely that the Makah could take the total number of whales allowed because of the year-round season and the lack of limitations on identified whales. Implementation of Alternative 3 could also result in shorter times to death and fewer whales struck and lost than under Alternative 3. The ability to hunt in better weather and sea conditions than under Alternative 2 would likely improve the accuracy of the Makah harpooner and rifleman, increasing the chances that a projectile would hit its intended target and that a struck whale could be harvested.

4.4.3.4 Alternative 4

Alternative 4 would include the same limits on the number of whales harvested as Alternative 2 and would impose the same restrictions on the hunting season. The additional restrictions contained in Alternative 4 (no hunting within 200 yards of rocks and islands in the Washington Islands National Wildlife Refuges) would not affect the likely number of hunting expeditions, patterns of vessel traffic, or the number of whales potentially struck, harvested, or struck and lost. The potential effects to gray whale abundance, viability, distribution, and habitat use under this alternative would therefore likely be similar to that expected under Alternative 2. The methods of

striking and killing and the time to death under Alternative 4 would not differ from those anticipated under Alternative 2. The comparison between Alternative 4 and the No-action Alternative would be similar to the comparison between Alternative 2 and the No-action Alternative.

4.4.3.5 Alternative 5

Alternative 5 limits the number of whales that may be struck, harvested and struck and lost in any one year to three, two and one, respectively. There would be no limit on the harvest of PCFA whales. Year-round hunting would be allowed, making it likely that the full number of whales would be harvested. The expected number of hunting days would be 20 per year. Each year an estimated 60 whales would be approached by Makah whale-hunting vessels and an estimated 12 whales would be subjected to unsuccessful harpoon attempts.

4.4.3.5.1 Change in Abundance and Viability of ENP Gray Whales

Under Alternative 5, as with all of the alternatives, including the No-action Alternative, the same number of whales would likely be harvested – 620 over five years and no more than 140 in any single year. The potential effects on the abundance of the ENP gray whale stock would likewise be the same – an average annual reduction of 124 whales per year. The potential effect on viability of the ENP gray whale stock would be negligible because the mortality level would not approach PBR, as discussed above under the No-action Alternative. Alternative 5 would not change the risk to the abundance and viability of the ENP gray whale stock compared to the No-action Alternative.

4.4.3.5.2 Change in Abundance of Gray Whales Using the Makah U&A and ORSVI Survey Areas

Under Alternative 5 there could be an increased risk to abundance of gray whales using the Makah U&A and ORSVI survey areas, compared to the No-action Alternative. Under this alternative, there would be no limit on the hunting season or the number of identified whales that could be harvested. All of the hunting could occur during the summer period (June 1 through November 30), when any whale present in the Makah U&A would, by definition, be a Makah U&A and ORSVI whale. It is not possible to predict the likely number of identified whales that would be killed under this Alternative without knowing when tribal members would hunt. Of the three whales that could be killed per year under this Alternative, all three could be Makah U&A and ORSVI whales.

If three Makah U&A and ORSVI whales were killed under Alternative 5, it is uncertain whether other whales would take their place during the year in which they were killed. Whales identified in the PCFA survey area could take the place of whales removed from the ORSVI, and whales identified in the ORSVI survey area could take the place of whales removed from the Makah U&A. Gray whales feeding in the southern portion of the summer range move great distances within a year (Section 3.4.3.3.1, Summer Range Distribution and Habitat Use), thus it is reasonable to expect that some removed whales could be replaced in the year in which they were removed.

It is also uncertain how quickly Makah U&A and ORSVI whales removed under Alternative 5 would be replaced in subsequent years. All three whales killed under this scenario could be Makah U&A whales, which is higher than the average annual recruitment of 4.66 whales described under Alternative 2. As described in Section 3.4.3.3.1, Summer Range Distribution and Habitat Use, Calambokidis et al. (2004a) propose that whales likely recruit to the Makah U&A or other parts of the PCFA survey area from the migratory population randomly, as feeding habitat becomes available along the migration route. Thus it appears likely that at least some of the removed whales could be replaced in subsequent years. Under Alternative 5, the Tribe's harvest would not be adjusted based on abundance of ORSVI whales, although presumably if whales were not available to harvest, the Tribe's harvest level would potentially decrease as a practical matter.

Compared to the No-action Alternative, in which no Makah U&A or ORSVI whales are likely to be killed by hunting, Alternative 5 represents an increase in risk to the abundance of gray whales using the Makah U&A and ORSVI survey areas during the summer period. Although the precise number of Makah U&A and ORSVI whales removed cannot be predicted, as many as three could be killed each year. It is uncertain whether all three would be replaced during the year in which they were removed, or in the subsequent year.

Compared to Alternatives 2 and 4, Alternative 5 represents a potential three-fold increase in the risk to abundance of whales in the Makah U&A and ORSVI survey areas, because of the potential for three of these whales to be killed per year compared to about one whale per year under Alternatives 2 and 4. Compared to Alternative 3, Alternative 5 represents a lower risk because the maximum number of Makah U&A and ORSVI whales that could be removed would be smaller (three compared to seven).

PBR of Whales in the ORSVI

If three whales from the ORSVI survey area were killed, it would slightly exceed the PBR for whales in the ORSVI survey area proposed by the Makah (potentially three whales killed compared to the PBR of 2.5 using current abundance estimates). In comparison, under the No-action Alternative there would be no risk of exceeding PBR. Alternative 5 could also result in an increased risk of exceeding PBR compared to Alternatives 2 and 4. The likely scenario under Alternatives 2 and 4 is that one ORSVI whale would be killed, while the maximum scenario is that three Makah ORSVI whales would be killed. Compared to Alternative 3, Alternative 5 would have a lower risk of exceeding PBR because the potential number of ORSVI whales killed would be smaller (three versus seven).

4.4.3.5.3 Change in Distribution or Habitat Use

There is a risk that implementing Alternative 5 could result in a change in gray whale distribution or habitat use in the coastal portion of the Makah U&A or elsewhere in the PCFA survey area, for the same reasons as described under Alternative 2.

Migrating Whales

Migrating whales travel 1 to 2 miles offshore on their northward migration and may travel further from shore during the southward migration (Section 3.4.3.1.4, Seasonal Migrations). Because hunting under Alternative 3 could occur year round, it could affect both migrating and feeding gray whales. Thus fewer than 60 migrating gray whales would potentially be approached in a year and fewer than 12 would be subjected to unsuccessful harpoon attempts. The number of whales approached would be less than one percent of the total gray whale population of 20,000, while the number exposed to unsuccessful harpoon attempts (12) would be an even smaller fraction. Thus while there is a potential for implementation of Alternative 5 to result in migrating gray whales changing their distribution or habitat use, the risk is likely small, suggesting that gray whale distribution and habitat use will not change compared to the No-action Alternative.

Feeding Whales

Hunting under Alternative 5 could occur year round and much of it would potentially take place during the period from May through September. During the period from June 1 through November 30, any gray whale found in the Makah U&A would, by definition, be a Makah U&A whale, and, by extension, a PCFA whale. As described previously, between seven and 31 whales have been identified in the Makah U&A in a single year, and between 129 and 206 have been identified in the PCFA in a single year. While the actual number of whales in the Makah U&A is

likely larger, it is probably not larger than the number of whales in the larger ORSVI. With the potential for 60 approaches and 12 unsuccessful harpoon attempts over 40 days, it is mathematically possible that every Makah U&A whale could be approached by tribal hunting vessels on multiple occasions, and that a substantial proportion of Makah U&A whales could be subjected to harpoon attempts. For PCFA whales, the number of whales present in any year is also likely larger than the number observed, although the actual number is unknown.

It is reasonable to expect that approaches by Makah whale-hunting canoes would cause a disturbance similar to or less than that observed from approaches of motorized whale-watching vessels. Thus whale response to approaches is likely to be temporary (minutes or hours). It is less certain what effect an unsuccessful harpoon attempt would have. It is uncertain whether the intensity of unsuccessful harpoon attempts would result in more than a temporary disturbance of Makah U&A whales and cause them to avoid portions of the Makah U&A either for a short period (days to weeks), or a longer period (for example, over a period of years). It is also uncertain whether such disturbance in the Makah U&A would cause PCFA whales to change their distribution or habitat use in the larger PCFA survey area. As described in Section 4.4.2.3, Change in Distribution or Habitat Use, availability of prey may be the factor most strongly affecting gray whale distribution during feeding. If prey is available in the Makah U&A or PCFA, hunting by the Makah Tribe might not result in either a short- or long-term response from summer-feeding whales. Many new whales are seen in the Makah U&A every year (Section 3.4.3.3.1, Summer Range Distribution and Habitat Use). Thus even if some whales do abandon the area as a result of hunting disturbance, new whales that had not previously been exposed to hunting might come into the area, indicating that gray whale distribution and habitat use will not change compared to the No-action Alternative.

Compared to Alternatives 2 and 4, Alternative 5 has a greater potential for resulting in a change in distribution or habitat use of feeding gray whales in the Makah U&A and PCFA survey areas. The opportunity for year-round hunting under Alternative 5 means that all whales subject to approaches or unsuccessful harpoon attempts could be summer-feeding whales, representing a larger proportion of Makah U&A and PCFA whales than would be the case under Alternatives 2 and 4. Compared to Alternative 3, Alternative 5 has a lower potential for resulting in a change in distribution or habitat use of feeding gray whales in the Makah U&A and PCFA survey areas. Although both alternatives allow year-round hunting and could result in most hunting occurring during the summer period, fewer whales would be approached or subjected to unsuccessful harpoon attempts.

4.4.3.5.4 Manner and Time to Death

Alternative 5 would have the same effects regarding manner and time to death for gray whales as described under Alternatives 2, 3, and 4, except that the total number of whales killed in a Makah hunt would be 10 rather than 20. Hunting efficiency could be one whale struck and lost for two whales harvested and so would be about the same as under Alternatives 2, 3, and 4, as compared to the No-action Alternative.

4.4.3.6 Alternative 6

Under Alternative 6, whale hunting may occur year round in both the coastal and Strait of Juan de Fuca portions of the Makah U&A. An average of four whales per year could be harvested, seven whales could be struck, and three struck and lost. During any five-year period, up to 20 whales might be harvested, with 35 struck and 15 struck and lost. Whales that are struck are considered killed. As many as 140 whales may be approached by whale-hunting vessels in any one year and up to 28 whales may be subjected to harpoon attempts. Hunting could potentially occur on a total of 40 days. Given the opportunity to hunt year round, it is likely the Tribe would be able to harvest the full number of whales allowed.

4.4.3.6.1 Change in Abundance and Viability of ENP Gray Whales

Under Alternative 6, as with all of the alternatives, including the No-action Alternative, the same number of whales would likely be harvested – 620 over five years and no more than 140 in any single year. The potential effects on the abundance of the ENP gray whale stock would likewise be the same – an average annual reduction of 124 whales per year. The potential effect on viability of the ENP gray whale stock would be negligible because the mortality level would not approach PBR, as discussed above under the No-action Alternative. Alternative 6 would not change the risk to the abundance and viability of the ENP gray whale stock compared to the No-action Alternative.

4.4.3.6.2 Change in Abundance of Gray Whales Using the Makah U&A and ORSVI Survey Areas

Under Alternative 6 there could be an increased risk to abundance of gray whales using the Makah U&A and ORSVI survey areas, compared to the No-action Alternative. This increase would be the same as that described under Alternative 3, for the reasons described in Section 4.4.2.2, Change in Abundance of Gray Whales Using the Makah U&A or ORSVI Survey Areas.

4.4.3.6.3 Change in Distribution or Habitat Use

There is a risk that implementing Alternative 6 could result in a change in gray whale distribution or habitat use in the overall Makah U&A or elsewhere in the PCFA survey area, for the same reasons as described under Alternative 2.

Migrating Whales

Migrating whales travel 1 to 2 miles offshore on their northward migration and may travel further from shore during the southward migration (Section 3.4.3.1.4, Seasonal Migrations). Because hunting under Alternative 3 could occur year round, it could affect both migrating and feeding gray whales. Thus fewer than 140 migrating gray whales would potentially be approached in a year and fewer than 28 would be subjected to unsuccessful harpoon attempts. The number of whales approached would be less than one percent of the total gray whale population of 20,000, while the number exposed to unsuccessful harpoon attempts (28) would be an even smaller fraction. Thus while there is a potential for implementation of Alternative 6 to result in migrating gray whales changing their distribution or habitat use, the risk is likely small, indicating that gray whale distribution and habitat use will not change compared to the No-action Alternative.

Feeding Whales

Hunting under Alternative 6 could occur year round and much of it would potentially take place during the period from May through September. Hunting would also likely occur in the Strait of Juan de Fuca portion of the Makah U&A. During the period from June 1 through November 30, any gray whale found in the Makah U&A would, by definition, be a Makah U&A whale, and, by extension, a PCFA whale. As described in Section 3.4.3.3.1, Summer Range Distribution and Habitat Use, between 8 and 35 whales have been identified in the overall Makah U&A in a single year, and between 129 and 206 have been identified in the PCFA in a single year. While the actual number of whales in the Makah U&A is likely larger, it is probably not larger than the number of whales in the larger ORSVI. With the potential for 140 approaches and 28 unsuccessful harpoon attempts over 40 days, it is mathematically possible that every Makah U&A whale could be approached by tribal hunting vessels on multiple occasions, and that every Makah U&A whale could be subject to harpoon attempts. For PCFA whales, the number of whales present in any year is also likely larger than the number observed, although the actual number is unknown.

It is reasonable to expect that approaches by Makah whale-hunting canoes would cause a disturbance similar to or less than that observed from approaches of motorized whale-watching

vessels. Thus whale response to approaches is likely to be temporary (minutes or hours). It is less certain what effect an unsuccessful harpoon attempt would have. It is uncertain whether the intensity of unsuccessful harpoon attempts would result in more than a temporary disturbance of Makah U&A whales and cause them to avoid portions of the Makah U&A either for a short period (days to weeks), or a longer period (for example, over a period of years). It is also uncertain whether such disturbance in the Makah U&A would cause PCFA whales to change their distribution or habitat use in the larger PCFA survey area. As described in Section 4.4.2.3, Change in Distribution or Habitat Use, availability of prey may be the factor most strongly affecting gray whale distribution during feeding. If prey is available in the Makah U&A or PCFA, hunting by the Makah Tribe might not result in either a short- or long-term response from summer-feeding whales. Many new whales are seen in the Makah U&A every year (Section 3.4.3.3.1, Summer Range Distribution and Habitat Use). Thus even if some whales do abandon the area as a result of hunting disturbance, new whales that had not previously been exposed to hunting might come into the area, suggesting that gray whale distribution and habitat use will not change compared to the No-action Alternative.

Compared to all other action alternatives, the opportunity to hunt in the Strait of Juan de Fuca portion of the Makah U&A under Alternative 6 means that a change in gray whale distribution could occur in the strait as well as in the coastal portion of the Makah U&A.

Compared to Alternatives 2 and 4, Alternative 6 has a greater potential for resulting in a change in distribution or habitat use of feeding gray whales in the Makah U&A and PCFA survey areas. The opportunity for year-round hunting under Alternative 6 means that all whales subject to approaches or unsuccessful harpoon attempts could be summer-feeding whales, representing a much larger proportion of Makah U&A and PCFA whales than would be the case under Alternatives 2 and 4.

Compared to Alternative 3, Alternative 6 would have similar effects, except that the opportunity to hunt in the Strait of Juan de Fuca portion of the Makah U&A means that a change in gray whale distribution could occur in that area as well. Compared to Alternative 5, Alternative 6 has a greater potential to result in a change in distribution or habitat use of gray whales because more whales would be subjected to approaches and unsuccessful harpoon attempts.

4.4.3.6.4 Manner and Time to Death

Alternative 6 would have the same effects regarding manner and time to death for gray whales as described under Alternatives 2 through 4. Hunting efficiency could be one whale struck and lost

for two whales harvested and so would be about the same as under Alternatives 2 through 4, as compared to the No-action Alternative.

4.5 Other Wildlife

4.5.1 Introduction

This section addresses the potential for the proposed alternatives to affect wildlife species in the project area. Species analyzed in this section include marine mammals (other than gray whales, see Section 4.5), birds, and reptiles (i.e., sea turtles). Analyses in this section address all species identified in Section 3.5, Other Wildlife Species, as occurring in the project area, including those listed as threatened or endangered under the ESA and those not listed. This analysis focuses on wildlife species that may occur in the project area and that have potential to be affected by hunt-related activities. For species that are not likely to occur near proposed hunt activities, no effects are expected.

There are three primary sources of potential effects of whale-hunt-related activities on wildlife considered in this analysis. First are the potential direct effects related to visual and noise disturbance from anticipated concentrations of aircraft and boat traffic and the use of guns and explosives associated with any hunt. Such disturbance may disrupt the behavior of individuals or groups of animals in the project area. Second are the potential indirect effects from visual and noise disturbance that may disrupt prey distribution or abundance, resulting in decreased foraging efficiency. Third is the potential for direct harm to marine mammals (other than gray whales) from increased vessel traffic and hunt-related activities that could cause injury or death if a marine mammal was struck by a vessel or a projectile associated with a hunt. The following sections discuss these issues in greater detail.

4.5.2 Evaluation Criteria

Three evaluation criteria were used to assess the potential direct and indirect effects of the alternatives on other wildlife species in the project area: potential changes in behavior due to disturbance (visual and noise), potential changes in prey availability, and potential for physical injury (e.g., from ship strikes or weapons). These criteria provide a way to analyze the potential effects of the alternatives on wildlife.

The following sections describe the potential for the alternatives to affect wildlife in the project area. For each alternative, the discussion addresses potential disturbance and injury and, where relevant, potential changes in prey availability. For each criterion, potential effects on marine

mammals (excluding gray whales) are described first, followed by birds and reptiles (turtles). For each species group, ESA-listed endangered and threatened species are addressed first, followed by those species that are not listed. Non-listed seabirds and other birds that use coastal habitats are analyzed by habitat association, described under Section 3.5.3.2.2, Non-listed Birds and Their Associated Habitats. That section reviews the habitat associations and discusses which species of birds are included in each zone. To reduce repetition, species that would probably be affected similarly under a particular evaluation criterion are addressed together.

4.5.2.1 Disturbance

Section 4.11, Noise, describes the sources and level of noise-related disturbance that may occur during a hunt. Section 3.5.3.3, Sensitivity of Wildlife to Noise and Other Disturbance, describes how wildlife typically respond to these types and sources of noise. Many activities associated with a whale hunt have the potential to generate noise levels that would exceed ambient levels in parts of the project area (Section 4.11.2.1, Noise Generated by Hunt-related Activities). Under current conditions, noise from vehicles, marine vessels, and aircraft is commonly heard throughout the Makah U&A. Other sources of noise include commercial areas, sports fields, logging operations, and the foghorn at Tatoosh Island. Natural sounds, such as those of wind and surf, contribute to high ambient noise levels in portions of the project area, particularly in areas close to the shoreline of the Pacific coast and the Strait of Juan de Fuca. A whale hunt and associated monitoring, protests, and law enforcement would be expected to result in increased noise and human activity levels. In addition, firearms and other explosive devices used to strike and kill a whale would produce high-intensity, short-duration noise.

Sources of noise and visual disturbance associated with whale hunt activities include aircraft overflights (both fixed wing and helicopter), boat traffic (including both motorized and non-motorized craft), gunfire, and explosives. Anthropogenic noise can be either transient or continuous and can result in a variety of effects on wildlife with consequences ranging from none to severe (Würsig and Richardson 2002). Examples of transient noise associated with whale-hunting under the action alternatives would include helicopters, planes, and explosions; examples of continuous noise include vessels underway.

Among the proposed alternatives, the No-action Alternative would pose the lowest risk of disturbance to other species of wildlife. Under all of the action alternatives, the greatest potential for direct effects on other wildlife species would be from noise and visual disturbance related to

increased human activity directly and indirectly associated with a whale hunt. This analysis considers the likelihood of effects on wildlife due to such increased disturbance.

Analyses in this section consider the nature and magnitude of hunt-related activities in relation to wildlife occurrence and behavior (e.g., nesting, migration, foraging, nursing, and other critical survival activities). For each species, species group, or habitat type, the analysis examines the proximity of hunt-related activities to sensitive areas (e.g., rookeries, nest sites, haulout sites). Alterations in wildlife behavior may occur if vessels, or aircraft associated with hunt-related activities travel through locations close enough to sensitive areas to disturb animals (Section 3.5.3.3.2, Boat Traffic, and Section 3.4.3.6.6, Vessel Interactions).

It is possible that the number and types of vessels and aircraft that would participate in each hunting expedition (including observation, protests, law enforcement, and media coverage) would vary among the action alternatives. For example, alternatives that allow year-round hunting could result in a greater number of observers overall because of an increased likelihood of more hunting occurring during periods of good weather. Conversely, alternatives that allow more hunts might attract less public interest over time and less media coverage. Because of the difficulty of predicting such variations, and how they might affect the precise numbers of vessels and aircraft participating in each hunt, this analysis assumes each hunting expedition would be accompanied by the same amount of vessel and aircraft activity and associated disturbance. Vessels and aircraft associated with each hunt would likely be similar to those associated with the previous hunts, described in Section 3.11.3.2.1, Atmospheric Noise. It is not possible to predict the specific location of hunt-related activity on a given day under any action alternative. The area in which hunting would be allowed would be the same among the action alternatives with two exceptions: (1) under Alternative 4, hunting would not be allowed within 200 yards of rocks and islands in the project area, and (2) under Alternative 6, hunting could also occur in the Strait of Juan de Fuca.

4.5.2.1.1 Marine Mammals (excluding Gray Whales)

As described in detail in Section 3.5.3.3, Sensitivity of Wildlife to Noise and Other Disturbance, marine mammals in the coastal environment (e.g., seals, sea lions, and sea otters) may react to changes in noise and human presence by altering behaviors such as breeding, nursing, grooming, foraging, or resting. The effects of such disturbance on marine mammals would be related primarily to the type, level, timing, and location of disturbance relative to species locations and activity. Animals might be disturbed at haulout sites and spend more time in the water, thereby

reducing rest periods, altering nursing frequency, and modifying thermoregulation. Species that breed in the project area (i.e., harbor seals and sea otters) could be disturbed during the summer, when hunt activities might disrupt pupping or breeding activities or interrupt the female/pup bond during nursing.

Whales, dolphins, and porpoises might react to increased disturbance related to a hunt by changing their swim speed or direction or increasing dive duration. The sight and sound of vessels might also disturb the foraging behavior of seals and sea lions in the water and may affect foraging and grooming behaviors of sea otters. Noise from vessels, aircraft, and weapons associated with whale hunting might disrupt the ability of predatory species (e.g., killer whales) to communicate and to locate or obtain prey. For all of these species of marine mammals, any resultant effects would likely be temporary (lasting a few minutes to a few hours) and localized (occurring near the hunt).

Section 4.11.2.1, Noise Generated by Hunt-related Activities, discusses the level and duration of noise anticipated from weapon use and vessel and aircraft activity associated with hunting. It is not possible to predict in advance the exact level of atmospheric or underwater noise that vessels and aircraft would produce on a typical day of hunting. Depending on the method used to kill a struck whale, the loudest noise levels associated with hunting would be from gunshots (atmospheric noise) or grenade explosions (underwater noise) (Section 4.11.2.1, Noise Generated by Hunt-related Activities). Noise from a gunshot would probably decay to ambient levels within 1 or 2 miles of the source (although this distance cannot be determined with certainty), while a grenade explosion underwater might not decay to ambient levels for several miles. Noise from these sources would last only a few seconds.

Overall, the number of marine mammals that would potentially occur close enough to hunting activities to be affected by the associated noise would probably be low. As presented in Table 3-11, frequency of occurrence of about half of the federal- and state-listed species of marine mammals in the project area is uncommon or rare. Nearly all of the species of marine mammals that may occur in the project area, including ESA-listed species, are wide-ranging and may travel long distances as part of their normal daily movements. Sea otters do not typically travel long distances on a daily basis but are known to travel extensively in the vicinity of the Makah U&A (Lance et al. 2004). Thus, any changes in behavior of these species due to disturbance from whale hunt-related activities would likely be temporary and would probably not have lasting effects on

individuals or populations. Noise effects specific to particular species and species groups of wildlife are discussed below.

ESA-listed Marine Mammals

Several ESA-listed species of wildlife are known to occur in the project area but would probably not be affected by the proposed whale-hunt-related activities because of their rare to uncommon occurrence along the Washington coast and/or their use of habitats too far from shore to encounter any hunt-related activities in the project area (Table 3-11). These species include five ESA-listed species of whales (sperm, blue, sei, fin, and right) and one ESA-listed pinniped (Steller sea lion). When present in Washington waters, all of the whale species typically occur in pelagic deep waters offshore in the Makah U&A beyond the bounds of where proposed hunting would likely occur. There may be brief periods during hunt-related activities, particularly as a result of aircraft activities or grenade explosions, when ESA-listed marine mammals would be exposed to increased noise levels and might modify their behavior (dive duration, swim direction, etc.) in response. Although ESA-listed species of marine mammals have a low likelihood of encountering hunt-related activities, the species that would have the highest likelihood of encountering hunt-related activities include the Steller sea lion, killer whale, and humpback whale. These species are discussed in further detail below.

As mentioned above, all species of marine mammals that may occur in the project area, including ESA-listed species, are wide-ranging and may travel long distances as part of their normal daily movements. Any changes in behavior of these species due to whale hunt-related disturbance would likely be temporary and would probably not have lasting effects.

Steller Sea Lion

Steller sea lions are common in and near the project area throughout the year and are most abundant in late summer, fall, and winter. They use offshore islands and rocks for resting and to nurse pups. Most offshore islands and rocks in the project area are less than 1 mile from the shoreline, whereas most hunting under the action alternatives would probably take place 1 mile or more offshore (as was the case with previous hunts). It is unlikely that any whale hunt activities would occur close to haulout sites for Steller sea lions, although the noise associated with helicopters and gunshots, especially, would carry much farther than the immediate hunt area. Steller sea lions also forage in waters within the Makah U&A. Disturbance associated with the use of vessels associated with a hunt might occasionally disrupt foraging behavior of Steller sea lions in the project area. As with other species of marine mammals that may occur in the project

area, Steller sea lions are wide-ranging and may travel long distances as part of their normal daily movements. Any changes in behavior due to whale-hunt-related disturbance would likely be localized and temporary and would probably not have lasting effects.

Killer Whale

Offshore, transient, and southern resident killer whales might occur in or near the project area year round. Of these, southern residents are the most likely to occur in the project area and may be present at any time of year (Section 3.5.3.1.1, ESA-Listed Marine Mammal Species). Transient whales may also be present sporadically. The greatest number of southern resident killer whales have been sighted in the summer in inland waters east of the Makah U&A. Very little information is available about the movements of southern resident killer whales off the Washington coast. It is unclear whether these whales spend a substantial amount of their time in the Strait of Juan de Fuca (71 FR 69054, November 29, 2006). Nonetheless, the potential exists for killer whales to be in the vicinity of a whale hunt and thus disturbed by the associated activities under any of the action alternatives.

As with other species of marine mammals, noise and human activity related to the use of vessels associated with whale hunting might cause killer whales to modify their behavior. As discussed in 3.5.3.3.1, ESA-listed Marine Mammal Species, listing factors for the killer whale included, among other things, noise and disturbance from vessel traffic. Killer whales may temporarily change dive duration or swim direction, for example, in response to hunt-related disturbance, particularly disturbance associated with the use of aircraft. Disturbance from vessels, aircraft, and weapons associated with whale hunting also has the potential to disrupt the ability of killer whales to communicate or find prey. As with other species of marine mammals that may occur in the project area, killer whales are wide-ranging and may travel long distances as part of their normal daily movements. Any changes in behavior of these species due to whale hunt-related disturbance would likely be localized and temporary and would probably not have lasting effects.

As discussed in 3.5.3.3.1, ESA-listed Marine Mammal Species, the primary constituent elements for the southern resident killer whale critical habitat include (1) water quality to support growth and development; (2) prey species of sufficient quantity, quality, and availability to support individual growth, reproduction, and development, as well as overall population growth; and (3) passage conditions to allow for migration, resting, and foraging. None of the proposed alternatives would appreciably affect these elements of critical habitat for this species.

Humpback Whale

Humpback whales occur occasionally in or near the project area and might occur in the vicinity of a whale hunt. Noise and visual disturbance from vessels, aircraft, or weapons could thus affect humpback whales above or below the water. Potential effects would include changed swim speed or direction or increased dive duration to avoid the noise.

As mentioned above, all species of marine mammals that may occur in the project area, including humpback whales, are wide-ranging and may travel long distances as part of their normal daily movements. Thus, any changes in behavior (migration, movements, and habitat use) of these species due to whale-hunt-related activities would likely be temporary and would probably not have lasting effects.

Non-ESA-listed Cetaceans

Of the 15 non-listed species of cetaceans discussed in Section 3.5.3.1, Marine Mammals, 12 are rare or uncommon off the Washington coast and/or use habitats in the pelagic environment, far from the vicinity of whale-hunting activities in the project area (Table 3-11). Thus these 12 species would probably not be affected by whale-hunt-related activities and are not considered further in this analysis. These 12 species include northern right whale dolphin, common dolphin, striped dolphin, Risso's dolphin, false killer whale, pilot whale, pygmy sperm whale, minke whale, Baird's beaked whale, curvier beaked whale, Hubb's beaked whale, and Stejneger's beaked whale. The three exceptions are harbor porpoise, which occur in the coastal environment, and Dall's porpoise and Pacific white-sided dolphins, which are infrequent visitors there. When any of these three species are present in coastal areas during a hunt, they would probably be affected by disturbance from vessels, aircraft, or weapons associated with a whale hunt. Whales, dolphins, and porpoises might react to hunt-related disturbance by changing their swim speed or direction or increasing dive duration. Noise from vessels, aircraft, and weapons associated with whale hunting might disrupt the ability of predatory species (e.g., killer whales) to communicate and to locate or obtain prey.

As mentioned above, all species of marine mammals that may occur in the project area, including the non-ESA-listed species of cetaceans, are wide-ranging and may travel long distances as part of their normal daily movements. Any changes in behavior of these species due to whale hunt-related activities would likely be temporary and would probably not have lasting effects.

Non-ESA-listed Pinnipeds

As discussed in Section 3.5.3.1, Marine Mammals, four non-ESA-listed species of pinnipeds are known to occur in the project area: harbor seal, California sea lion, northern elephant seal, and

northern fur seal. Of these species, only the California sea lions and harbor seals have a reasonable potential to occur in the vicinity of a hunt in the project area (Section 3.5.3.1.2, Common Species off Washington Coast). Northern fur seals and northern elephant seals occur infrequently and in relatively low abundance in the project area, or they occur in the pelagic environment where they would probably not encounter whale hunt-related activities. California sea lions and harbor seals are, however, common in the project area. Similar to Steller sea lions, both species use offshore islands and rocks for resting (California sea lions) or to nurse pups (harbor seals), thus their haulout sites would have a very low likelihood of being affected by hunt-related activities in the project area. California sea lions and harbor seals also forage in waters throughout the Makah U&A. Any potential effects on these species would likely be identical to those described above for Steller sea lions; any changes in behavior of these species due to whale hunt-related disturbance would likely be temporary and localized.

Northern Sea Otter

Northern sea otters are common in the project area throughout the year and can travel extensively or shift their distribution seasonally to forage or seek more sheltered waters (Lance et al. 2004). They generally inhabit shallow coastal waters less than 1 mile from shore, but they may occasionally be seen as far as 3 miles offshore. Disturbance from the use of vessels, aircraft, or weapons associated with whale hunting (as discussed in Section 4.5.2.1.1, Marine Mammals (excluding gray whales)) might affect sea otters that are swimming, foraging, or grooming in or near the project area, by causing them to spend time avoiding the activity and thus reducing foraging, resting, grooming, and breeding activities, including nursing or caring for young.

4.5.2.1.2 Other Marine Wildlife

ESA-Listed Species

Several ESA-listed species of wildlife are known to occur in the project area, including three ESA-listed species of birds (short-tailed albatross, brown pelican, and marbled murrelet) and four species of sea turtles (leatherback, green, loggerhead, and olive ridley). Although the bald eagle was recently delisted, the species is still protected under the Bald and Golden Protection Act, and is thus addressed with the other ESA-listed species below.

Short-tailed Albatross

When present in Washington waters, short-tailed albatrosses typically occur in pelagic, deep waters offshore in the Makah U&A beyond the bounds of where proposed hunting would occur. There may be brief periods during hunt-related activities, particularly as a result of aircraft

activities or grenade explosions, when a short-tailed albatross would be exposed to increased noise levels and might modify its behavior in response, but the likelihood of such an encounter would be low.

As is the case for most marine mammals in the project area, short-tailed albatrosses are wide-ranging and may travel long distances as part of their normal daily movements. Any changes in behavior of these species due to whale hunt-related disturbance would likely be temporary and localized.

Brown Pelican

Brown pelicans typically breed outside the region and arrive along the coast of Washington in June, foraging on schools of fish in and near the project area. Disturbance associated with vessel traffic, weapons discharge, or aircraft may inhibit foraging activities of brown pelicans in a particular area. If this occurs, pelicans would most likely move to other food sources nearby without detriment to energy resources, because schools of fish typically are available at numerous points along the coast. It is unknown how far away a hunt could occur without interfering with pelicans' foraging activities. Any negative impacts would probably be temporary and localized. The more often the hunt were conducted during the period pelicans are present, the greater the chance that it would disrupt pelican foraging activities.

Marbled Murrelet

Murrelets either dive or paddle away when approached by a boat, depending on the speed of the boat. If disturbance occurs in a foraging area where murrelets congregate, the birds potentially could lose an opportunity to find a fish. It is unknown how murrelets react to gunfire, helicopters, and other loud disturbances to which these birds are unaccustomed, although helicopters and gunfire would probably cause them to either dive or fly away from the area completely (Nelson 1997). Flushing birds might stress their energy reserves, given that they have to fly long distances to bring fish to their young during the breeding season (April 1 through September 15). The time of day that the disturbance occurred might also make a difference in the degree of impacts on this species. During the breeding season, most foraging takes place during the early morning hours (Nelson 1997).

Whale hunts and associated activities under action alternatives could disturb adult murrelets foraging at sea, potentially reducing the amount of prey brought to chicks. The likelihood of any disturbance is low, however, because hunt-related activities would occupy a small proportion of

the project area at any given time. Marbled murrelets would likely be able to find foraging opportunities in areas where no disturbance would occur, although this could be more difficult for birds undergoing a two-month molt (which occurs during the latter half of the year).

Bald Eagle

As mentioned above, although bald eagles were recently removed from the ESA list of threatened species, this analysis includes them in the section on ESA-listed species, to provide them particular consideration. Bald eagles are present in the project area throughout the year and they nest, roost, and forage along the coastline. Bald eagles are known to flush off nests and roost sites when people or vessels get too close, and they may be deterred from foraging in an area where many vessels congregate on the water (Stinson et al. 2001). Bald eagles are more sensitive to disturbance during the spring months when they nest. Flushing off their nests, particularly at the beginning of the breeding season, might cause nest abandonment or a reduction in physical conditions, which could in turn affect the ability to feed chicks. Once chicks hatch in May, there would be less likelihood of nest abandonment.

It is unlikely that any whale hunt activities would occur close to active bald eagle nests, as previous hunts have occurred 1 to 2 miles offshore; however, the noise associated with helicopters and gunshots, especially, would carry much farther than the immediate hunt area. The first few years would potentially result in the greatest risk of negative effects from noise to nesting bald eagles, as over the longer term they might acclimate to the noise and visual disturbance associated with hunt activities. Thus, production of chicks might drop for a few years until the eagles became acclimated.

Helicopters and fixed-wing aircraft and increased human activity associated with hunt-related activities would probably alter the behavior of bald eagles that may be present in the project area during a hunt. Bald eagles flush away from nesting or foraging sites when approached by helicopters as close as 0.4 mile. Flushing distances are greater in the breeding season than in winter. While eagles would flush when helicopters come within 1,000 feet in the winter, they would flush if helicopters would approach to within 1,500 feet when on a nest (Stalmaster and Kaiser 1997). It is likely that some eagles cannot tolerate human presence and its associated noise within a particular distance of their feeding or nesting activities.

Sea Turtles

Four species of sea turtles occasionally occur along the Washington coast: leatherback, green, loggerhead, and olive ridley. Leatherback sea turtles are seldom seen in the project area, but they may migrate along the Washington coast during non-breeding years; thus, they could be found in the project area at any point in time. This species occasionally forages in the deep pelagic waters off the Washington coast. Rarely, leatherbacks appear in bays and estuaries, although such venues are not their preferred habitat. Green, loggerhead, and olive ridley sea turtles are found in warmer waters and only approach the Washington coast in El Niño years. All four of these species of turtles would most likely continue to forage along the Washington coast under the action alternatives, especially during warm winter years. These species of turtles are not easily disturbed during foraging activities; if approached by boats, they would most likely move slowly away from any sources of disturbance. There may be some short-term effects related to temporary disturbance from hunt-related activities that would cause them to move away from a preferred feeding area, but this would probably be temporary. Since none of these species of turtles nests in Washington State, there would be no expected impacts from whale-hunt-related activities on their nests or nesting habitat.

Non-Listed Marine Birds and Their Associated Habitat

The project area includes some of the largest seabird colonies in the continental United States, with more than 100 species of birds using this area for nesting, wintering, or foraging. Analyses in this section focus on the six types of habitat these species use and the effects that the alternatives would have on these habitat types. All six habitat associations (beaches, bays, and estuaries; headlands and islands; nearshore marine habitat; inland marine habitat; marine shelf habitat; and oceanic habitat) are present in the project area and are discussed individually where appropriate.

Beaches, Bays, and Estuaries

The beaches, bays, and estuaries along the Olympic coast support large numbers of marine and shorebirds for both breeding and foraging, particularly during migration. These habitat associations support the highest numbers of species compared with other habitat associations. Disturbance from vessels and aircraft that pass near beaches, bays, and estuaries may have short-term effects on breeding colonies and migrating birds that use these habitat associations. Gunfire and helicopter noise is particularly likely to flush birds off nests if it is close to shore where these birds are nesting or if they are foraging just offshore. Additionally, noise from powerboats that approach the shore could cause birds unaccustomed to this activity temporarily to flush off nests.

If disturbance occurred during the breeding season (generally spring and summer), some nest abandonment might occur. It is difficult to determine what impact this type of direct short-term effect would have on the long-term productivity of populations as a whole, although it might be a negligible loss.

Potential disturbance of individual pairs of nesting birds that happened to be close to a whale butchering site on the shore could cause loss of that year's chicks. Any harvested whale would probably be brought to a beach on the Makah Reservation, so nesting colonies (and migrating aggregations) on the reservation would face the greatest risk of disturbance and displacement under the action alternatives. That risk would be associated primarily with the number of whales harvested.

As mentioned in Section 3.5.3.2.2, Non-listed Birds and Their Associated Habitats, human-made structures, such as jetties, pilings, and buoys, provide important roosting habitat for cormorants, gulls, and other birds. None of the proposed alternatives would alter any existing human-made structures, or result in the construction of new ones, that may be used by these species for roosting.

Coastal Headlands and Islands

Large numbers of ledge-nesting birds inhabit offshore rocks and islands in the project area. Coastal headlands and islands provide critical nesting, foraging, and overwinter migratory habitat for these species. Species of ledge-nesting birds in the project area may be easily flushed off nest sites, leading to abandonment, predation, and subsequent nest failure. In addition, raptors, passerines, and other marine birds also use these habitat associations. Noise associated with hunt activities, should hunting occur close to the headlands and islands, could potentially flush birds off nest sites, similar to the short- and long-term impacts discussed above under Beaches, Bays, and Estuaries. The potential for ledge-nesting species of birds to be affected by whale hunt-related activities in the project area, and the degree of effect, would depend largely on the timing and proximity of any potential hunt-related disturbance. The potential for such disturbance, and impacts to these species, would be greater under alternatives associated with higher numbers of days of hunting and those with hunting potentially occurring during the breeding season. Concerns about disturbance of birds on islands might be reduced under Alternative 4, which is the same as the Makah proposed hunt but restricts hunt-related activity around all rocks and islands.

Nearshore Marine Zone

Birds in the project area use nearshore marine habitats primarily for foraging. A variety of common marine birds also use this area as a migration corridor. Species richness and bird abundance are greatest in winter, although some seabirds may concentrate in large numbers during the summer. Species richness is relatively low in inland marine waters, with richness and bird densities higher in winter than summer. Most species found in this area forage in the winter or during migration.

Nearshore marine habitats are one of the zones where whale hunting could occur under the action alternatives. The nearshore zone occurs mostly within 1 mile of the shoreline. As with the previous hunts, most hunting under the action alternatives would probably take place 1 mile or more offshore. Noise from vessels and aircraft, gunfire, and other hunt-related activities would probably not be as intense as in the continental shelf zone farther offshore. The potential for hunt-related activities to result in disturbance of birds using nearshore marine habitats, therefore, would be relatively low compared to the potential for disturbance in habitats farther offshore. Whale hunting during summer (under Alternatives 3, 5, and 6), however, may target whales that are feeding in the project area, and may therefore take place closer to shore than hunting during winter or spring, which may target migrating whales further offshore (Alternatives 2 and 4).

Vessel noise and human activity associated with hunt activities would displace foraging birds. When a whale is harpooned, all birds foraging within a few hundred feet of the whale hunt would probably flush in response to the sounds of gunfire, helicopters, or other loud devices. Interrupted foraging might lead to increased stress on birds' metabolism, but the short- or long-term effects on the populations as a whole would be difficult to determine. Because bird densities are moderate in these habitat associations, the risk of losing nesting, foraging, and migrating birds would also be at moderate levels, even under current conditions.

Continental Shelf

This zone provides foraging habitat and a migration corridor for a variety of marine birds and turtles, primarily during winter and during late summer/early fall when both residents and migrants abound. Because bird densities are lower in this habitat association, the risk of losing foraging and migrating birds is also lower, compared to other zones closer to shore.

Much of this zone is 1 mile or more offshore, which corresponds with the area where most hunting under the action alternatives would probably take place (as was the case with previous hunts). Because the density of birds in this zone is lower than in areas closer to shore, and

because no breeding or roosting occurs in this zone, the risk of disturbance in these habitat associations would be lower than the risk in nearshore zones.

Continental Slope

The continental shelf hosts the lowest species richness among the habitat associations considered in this analysis and is limited to foraging birds or turtles as they migrate, or residents that forage in deep waters. Species associated with this zone are primarily gulls and terns. This area is approximately 9 miles offshore (Buchanan et al. 2001), and fewer bird species use this zone than other habitat associations closer to shore. It is likely that hunt-associated activities would occur closer to shore (within 1 to 2 miles). For these reasons, it is likely that any effects of whale hunting on foraging and migrating birds that use these deep ocean waters would be negligible.

4.5.2.2 Prey Availability

Transient killer whales consume gray whales. The analysis considers the likelihood and significance of reduced abundance or availability of prey for foraging killer whales. Under the action alternatives, the abundance of gray whales in the project area could decrease due to hunting or movement out of the area in response to noise and human presence. Such decreases might reduce abundance or availability of prey for killer whales, causing them to spend more time foraging and increasing the risk of predation or compromised health. The amount of whale hunting activity would indicate the likelihood that this might occur.

Regardless of the amount of whale hunting activity that would likely occur under any of the action alternatives, the loss of potential prey to killer whales due to removal of gray whales is unlikely to have individual or population-level effects on killer whales in the project area. The endangered southern resident killer whales eat fish and do not consume gray whales (or other marine mammals). Gray whales account for only 8 percent of observed predation by transient killer whales on marine mammals on the west coast of North America; calves and juvenile make up the bulk of the gray whales taken. Gray whales are also abundant in the project area. Thus, removal of a maximum of seven adult gray whales per year by whale-hunters under the action alternatives is unlikely to affect the prey base of killer whales in the project area. As noted in Section 4.4.3.2.3, ENP Gray Whale – Change in Distribution or Habitat Use, whale-hunt-related activities would likely have negligible affects on the present or future distribution of, or habitat use by, gray whales in the project area.

It is unlikely that any of the action alternatives would affect prey availability for other marine mammals, birds, or sea turtles through disturbance to the food chain (Section 4.3, Marine Habitat

and Species). Any disturbance of prey species would probably be temporary and localized. Because of the low likelihood of prey-related effects, potential effects on species other than killer whales are not discussed further.

4.5.2.3 Potential Injury

The analysis considers the likelihood of injury to cetaceans, pinnipeds, sea otters, and sea turtles due to being struck by a ship or impacts associated with a projectile (harpoon, bullet, or grenade) used during the hunt (as measured by the amount of whale hunting activity). It is extremely unlikely that birds would sustain injury from vessels or weapons used in a whale hunt. Any birds that might be near an area where a hunt was underway would almost certainly flush from the area. This analysis, therefore, addresses potential effects on marine mammals or turtles. Increased vessel activities associated with hunt activities and other vessels present as protester, observer, or enforcement would likely focus on hunt activities, and animals in the area inadvertently might be struck and injured.

4.5.2.3.1 Marine Mammals

Under all of the action alternatives, the potential for any marine mammals to be struck by projectiles would be remote and would be possible only if another animal were mistaken for a gray whale or were immediately adjacent to a gray whale during a strike attempt. Some larger whale species could be mistaken for a gray whale during offshore hunt activities due to similar size. Makah whalers would, however, probably be able to distinguish other species from gray whales because of the characteristic blow of each species, skin color, position of the dorsal fin, behavior, and other characteristics that the whalers are trained to identify. The Tribe's proposal includes safety measures before firing a weapon. Examples are minimum visibility and a signal from the lookout. Implementation of these measures would ensure a greater likelihood of positively identifying a gray whale before attempting a strike. Therefore, there is a very low likelihood that marine mammals, other than the target species (gray whales) would be struck by projectiles used during a whale hunt under the action alternatives.

Any killer whales that occur near gray whales would most likely be transients surveying the gray whales as possible prey. The killer whales would most likely associate only with female gray whales with calves, focusing on the calves as easy prey. Under all of the action alternatives, no strikes would be allowed on calves or adults accompanied by calves. Killer whales would probably not be near gray whales targeted by whale-hunt activities because of the age and size of the targeted whales. Makah whalers would probably not mistake a killer whale for a gray whale,

and killer whales would most likely not remain close enough to whale hunting activities to be hit by an errant harpoon or projectile. For these reasons, the chances of a killer whale being struck by a harpoon or projectile during a hunt would be negligible.

There is a slight possibility that a marine mammal other than a gray whale could be injured by a ship or an errant projectile associated with the hunt. Other marine mammals do not swim close to gray whales, except transient killer whales that may be preying on gray whales, as mentioned above. For this reason, along with the safety measures the Tribe has proposed (Section 2.3.3.2.7, Public Safety Measures and Enforcement), the chances that a harpoon or errant projectile might strike marine mammals other than killer whales are considered negligible and are, therefore, not discussed further.

It is unlikely that hunt-related activities could result in injury to marine mammals due to a ship strike or propeller injury. As discussed at Section 3.4.3.6.8, Ship Strikes, ships at least 263 feet long that travel at least 14 knots cause most lethal or severe injuries to whales. Vessels engaged in a hunt and associated activities would be much smaller. The largest ship involved in the previous hunts was the 95-foot protest vessel M/V Sirenian, which remained in Neah Bay during most hunt activities. Vessels engaged in and monitoring the hunt would travel mostly at the rate of the human-powered canoe, although law enforcement vessels might have to move more rapidly to intercept protest vessels violating the MEZ.

Because of their keen acoustic capabilities, killer whales would be aware of vessels in the area and would likely move away before the vessels were close enough to cause injury. Killer whales are adept, proficient swimmers, and they would most likely avoid vessels associated with the hunt. Other marine mammals, including seals, sea lions, and cetaceans, are also adept, fast swimmers that tend to avoid moving vessels. If they were in the path of a moving vessel, they would likely dive below and away from the vessel, out of harm's way. Sea otters are relatively slow swimmers (compared to pinnipeds) and might approach vessels when near shore. However, any otters near hunt activities would probably swim rapidly away, or dive below and away, from oncoming vessels.

4.5.2.3.2 Sea Turtles

Leatherback turtles are slow swimmers and are susceptible to collision with fast-moving vessels. Under the action alternatives, whale hunts and associated activities would result in temporary and localized increases in the number of fast-moving vessels in the vicinity of a whale hunt in the project area. Chase boats engaged in a whale hunt, as well as protest vessels and law enforcement

vessels, could inadvertently strike a turtle as it surfaced for air, causing injury or death. Given the highly endangered status of this species population, the loss of even one leatherback turtle in this manner could hinder recovery efforts for this species. However, given that leatherback turtles only rarely occur off the coast of Washington, the likelihood of such incidents would be negligible.

4.5.3 Evaluation of Alternatives

The effects of the six alternatives would differ among individual species and species groups (including those identified by habitat association) depending on their use of and occurrence in the project area. For example, hunt-related activities under the action alternatives would more likely affect certain pinnipeds than most cetaceans (except gray whales), given characteristics of their foraging behavior and distribution in the project area. Pelagic species (e.g., sperm whales, leatherback turtles) would less likely be affected by the action alternatives than those that commonly occur in the coastal environment (e.g., harbor seals, bald eagles). Among pinnipeds, harbor seals and California sea lions use haulout sites in the project area (Section 4.5.2.1.1, Marine Mammals (excluding gray whales)). They would, therefore, more likely experience effects of hunt-related activities than elephant seals or fur seals, which do not breed or haul out in the area.

The potential for hunt activity to result in disturbance, reduced prey availability, or injury to wildlife would depend on the timing of the hunt, the location of the hunt, and the number of days hunting occurs. Hunting that takes place at a time when a species is present (particularly breeding) in the project area would have a higher likelihood of affecting that species than hunting that takes place when the species is not present in the project area. Hunting that takes place more than 200 yards from rocks and islands (Alternative 4) has a lower likelihood of affecting species that are present on the rocks and islands. The more days of hunting that occur, the more potential there is for effects on wildlife. As mentioned above, this analysis assumes that the amount of hunt-related activity would be the same on any given day of a hunt. Thus each day of hunting during a given season would present the same potential for effects on wildlife, as would each day of hunting that occurs outside of 200 yards around rocks and islands.

4.5.3.1 Alternative 1

Under the No-action Alternative, no whale hunt would be permitted, and no whale hunting or associated activities (e.g., monitoring, protests, law enforcement) would be expected to occur. Levels of noise and human presence in the project area would vary with time and location, but

would probably not exceed current levels. Similarly, neither prey availability nor the risk of injury or death from collision or projectiles would likely change from current conditions.

Trends in the status of health, abundance, and habitat conditions for wildlife species would continue through state and federal conservation efforts pursuant to ESA, MMPA, and the Migratory Bird Treaty Act. Prohibitions on take under these acts would continue and would require permits from NMFS and USFWS that would be subject to public review (except in the case of the Migratory Bird Treaty Act). For all species (listed and non-listed), direct mortality from anthropogenic sources would probably remain low and (for marine mammals) would not approach the PBR level. Natural mortality from predation, disease, and other sources would most likely match current levels.

Some marine mammals, specifically those in the coastal environment (e.g., harbor seals, California sea lions, Steller sea lions, and sea otter), and most birds and turtles would continue to encounter noise and vessel traffic from sport and commercial fisheries vessels, sight-seeing boats, and other sources such as military vessels. Effects on these species at current levels are unknown.

Loss of gray whales as prey to transient killer whales would continue to be variable as the gray whale population naturally fluctuates. The timing and magnitude of killer whale foraging efforts on gray whales would probably not change under this alternative. The prey base for other species (e.g., other cetaceans, pinnipeds, sea otters, and birds) would continue to vary due to natural events and human perturbations such as fishing. Ongoing variations in prey abundance would have varying effects on individual species.

A small number of marine mammals in the coastal environment would continue to be exposed to vessel traffic. This might result in vessel strikes from commercial and recreational vessels. Turtles, which are slower swimmers, may be more susceptible than other species to vessel strikes. Implementation of the No-action Alternative would not result in any increase in current low levels of injury.

4.5.3.2 Alternative 2

Under Alternative 2, whale hunting would be allowed from December 1 through May 31 in the coastal portion of the Makah U&A. Four whales could be harvested per year, on average, seven whales could be struck, and three struck and lost. If a whale were struck, it would be presumed killed. For purposes of this analysis, the maximum number of gray whales killed in any year would be seven. The Tribe estimates there could be approximately four whales exposed to unsuccessful harpoon attempts and 10 whales approached for every whale struck (Section

2.3.3.2.2, Number Harvested). Any hunting would most likely occur principally during April and May and would probably occur over 7 to 30 days (Table 4-1). With seven strikes allowed, the analysis assumes there could be a maximum of 28 rifle shots fired or 21 grenade explosions.

As part of this alternative, the Tribe would not approach within 200 yards of Tatoosh Island and White Rock during May to minimize disturbance to feeding and nesting sea birds there. No hunting would occur after June 1, additionally protecting nesting sea birds during the fledging and post-fledging period. Section 4.5.2.1, Disturbance, describes the amount of vessel and aircraft activity expected to occur on any given day of hunting.

4.5.3.2.1 Marine Mammals

Under Alternative 2, effects associated with 7 to 30 days of whale-hunting in the coastal portion of the Makah U&A could lead to an increased risk to marine mammals other than gray whales, compared to the No-action Alternative (effects on gray whales are addressed in Section 4.4, ENP Gray Whale). The greatest potential for effects would be from vessel and noise disturbance. For most species, effects would probably not differ from those described in Section 4.5.2.1.1, Marine Mammals (excluding gray whales). Species for which the effects of Alternative 2 might differ from that generalized discussion are discussed below. The intensity of the effects would depend on the number of occasions on which such disturbance occurred (related to the number of days of hunting) and the portion of the animals' life history during which they occurred (hunt timing). Any effects would probably be temporary (lasting for a few minutes to a few hours) and localized (occurring close to the hunt), and would probably not have lasting deleterious effects on individuals or populations. For all species, the number of animals close enough to hunting activities to be disturbed would likely be low.

As noted in Section 4.5.2.1.1, Marine Mammals (excluding gray whales), transient or resident killer whales might be subject to increased disturbance by noise and human activity associated with a whale hunt under Alternative 2, compared to current conditions under the No-action Alternative. The number of animals close enough to hunting activities to be affected would likely be small; any hunt-related disturbance would be localized, of short duration and would probably not have lasting effects.

Alternative 2 would most likely not affect prey availability for killer whales, as gray whales are generally abundant in the project area, and hunting regulations would prohibit the killing of calves, the primary target of killer whales. As discussed in Section 4.5.2.3, Potential Injury, the

likelihood that any marine mammals might sustain an injury from a vessel or errant projectile would be extremely remote.

Steller sea lions are most abundant in the coastal portion of the Makah U&A during the time that hunting would most likely occur under Alternative 2. As mentioned above, Steller sea lions use offshore islands and rocks, closer to shore than the area where most hunting would occur, for resting and to nurse pups. Thus their haulout sites would have a very low likelihood of being affected by hunt-related activities under Alternative 2. Steller sea lions also forage in waters within the coastal portion of the Makah U&A. Hunt-related activity would increase the level of disturbance in this area beyond current levels under the No-action Alternative, thus increasing the potential for Steller sea lion foraging to be disrupted. The potential increase in disruption would likely occur over a period of 7 to 30 days during April and May. While Steller sea lions might be exposed to increased disturbance from whale hunting, beyond the level of disturbance that already occurs under current conditions (the No-action Alternative), the number of animals close enough to hunting activities to be affected by noise would probably be low. Any effects would most likely be localized and temporary. Overall effects on Steller sea lions would probably be negligible.

Sea otters are common in the coastal portion of the Makah U&A throughout the year. Vessel activity or noise from vessels, aircraft, or weapons associated with whale hunting might disturb otters that are swimming, foraging, or grooming, causing them to spend time avoiding the activity and reducing rest and grooming periods. Hunt-related activity and noise could also disrupt nursing or caring for young (Section 4.5.2.1.1, Marine Mammals (excluding gray whales)). While northern sea otters in the coastal portion of the Makah U&A might be exposed to increased levels of disturbance under Alternative 2 over a period of 7-30 days, compared to current levels of disturbance under the No-action Alternative, few animals (if encountered) are expected to remain close enough to hunting activities to be affected. Any disturbance would likely be focused on one or a few individual animals and be localized and temporary in nature. Therefore, overall effects on northern sea otters are expected to be minor.

4.5.3.2.2 Other Marine Wildlife

Under Alternative 2, effects associated with whale-hunt activities could lead to an increased risk to birds and turtles compared to the No-action Alternative. The greatest potential for effects on most species would be from vessel and noise disturbance, as described in Section 4.5.2.1.2, Other Marine Wildlife. Species for which the effects of Alternative 2 may differ from that generalized

discussion are discussed below. Such effects would probably be temporary (lasting for a few minutes to a few hours) and localized (occurring near the hunt). For all species, the number of animals close enough to hunting activities to be affected by disturbance would most likely be low. Any disturbance would be localized and of short duration and would probably not cause lasting deleterious effects for individuals or populations.

Brown Pelican

Hunting under Alternative 2 hunting would be limited to the period from December 1 through May 31. Since pelicans typically do not arrive along the coast of Washington until June, there would probably be no direct or indirect impacts from this alternative. If any pelicans arrived earlier than June 1, foraging individuals could be disturbed while feeding within the nearshore marine and islands habitat associations, should a whale hunt occur nearby. The risk of such encounters would be very remote, as pelicans would be unlikely to be in the area at this time of year and if they were, they would avoid congregations of vessel activity and forage elsewhere. For any pelicans present, the amount of disturbance would probably be minor, as brown pelicans are wide-ranging and the project area is large relative to the amount of area in which hunting would take place, giving pelicans a large area in which to forage undisturbed.

Bald Eagle

Hunting would most likely occur during April and May under Alternative 2, coinciding with the early portion of the breeding season for bald eagles, and leading to increased risks over the No-action Alternative. However, most hunt-related activities would occur 1 to 2 miles offshore and would thus be unlikely to disturb eagles at active nests. If any eagles were disturbed and flushed from their nests, they might abandon their nests, particularly if the disturbance occurs before chicks hatch in May, resulting in loss of that year's chicks. Some eagles in the project area may have developed tolerance for amounts of noise and human presence, as evidenced by the continued presence of breeding pairs when recreational and commercial boating traffic has increased (Table 3-39). Over the long term, eagles may also acclimate to increases in noise and human activity associated with whale hunts. The risk of negative effects associated with hunt-related disturbance would be greatest in the short term.

Marbled Murrelet

Under Alternative 2 there could be an increased risk to marbled murrelets compared to the No-action Alternative. Hunting during April and May would have the potential to disturb adult murrelets foraging at sea, potentially reducing the amount of prey brought to chicks. Pre-breeding

behaviors such as courtship and pair-bonding may also be affected during this period. The likelihood of any disturbance is low, however, because hunt-related activities would occupy a small proportion of the project area at any given time. Marbled murrelets would likely be able to find foraging opportunities in areas where no disturbance would occur. In addition, there would be no potential for hunt-related disturbance during most of the breeding season, which extends from April 1 through September 15.

Sea Turtles

Under Alternative 2 there would be a negligible increase in risks to sea turtles compared to the No-action Alternative. This is because it is extremely unlikely (though not impossible) that any of the four ESA-listed species of sea turtles would frequent areas in which a whale hunt would occur. In the unlikely event that a sea turtle was in the vicinity of whale hunting, any effects due to noise and human activity would probably be short-term and not result in any adverse effects. As discussed in Section 4.5.2.3, Potential Injury, the potential for injury to sea turtles due a ship or weapon strikes associated with a hunt would be extremely low due to the low abundance of these species throughout their range, including the project area.

Non-Listed Marine Birds and Their Associated Habitat

Under Alternative 2, hunting would likely occur in April and May over a period of 7 to 30 days in the coastal portion of the Makah U&A. Both the location and the time of year of the whale hunt coincide with the large number of marine birds using beaches, bays, and entrances to estuaries during the breeding and the winter migratory seasons. Compared to No-action Alternative, Alternative 2 would result in a greater potential for disturbance to breeding, roosting, and migrating birds. Depending on the severity of the effects, some birds' nesting attempts could fail. The potential for such occurrences to result in long-term effects on local populations of species breeding in this zone can not be determined with certainty. On one hand, many individuals may already be acclimated to a high level of human disturbance, especially in the northern portion of the Makah U&A (e.g., 4,000 annual angler trips out of Neah Bay [Table 3-23], along with other commercial and recreational vessel and aircraft traffic). On the other hand, the levels of noise and human activity associated with harpooning, securing, and dispatching a whale would be greater at that particular site than the largely transient activities that occur under current conditions. For species that use headlands and islands, Alternative 2 would provide no specific protection for the islands (other than Tatoosh and White Rock Islands) and small clusters of rock that provide breeding habitat. Hunt-related activities near these sites might disrupt nesting activity, with

potential effects similar to those described for species associated with beaches, bays, and estuaries.

4.5.3.3 Alternative 3

Under Alternative 3, whale-hunting would be allowed year round in the coastal portion of the Makah U&A. Four whales could be harvested per year, on average, seven whales could be struck, and three struck and lost. If a whale were struck, it would be presumed to be killed. For purposes of this analysis, the maximum number of gray whales killed in any year would be seven. The Tribe estimates there could be approximately four whales exposed to unsuccessful harpoon attempts and 10 whales approached for every whale struck (Section 2.3.3.2.2, Numbers and Status of Whales Harvested). Hunting would most likely occur over a period of 40 days (Table 4-1). With seven strikes allowed, the analysis assumes there could be a maximum of 28 rifle shots fired or 21 grenade explosions. Alternative 3 does not prohibit hunting around any rocks and islands.

4.5.3.3.1 Marine Mammals

Under Alternative 3, effects associated with 40 days of whale-hunting the coastal portion of the Makah U&A could lead to an increased risk to marine mammals compared to the No-action Alternative. The greatest potential for effects would be from vessel and noise disturbance. For most species, effects would probably not differ from those described in Section 4.5.2.1.1, Marine Mammals (excluding gray whales). Species for which the effects of Alternative 2 might differ from that generalized discussion are discussed below. The intensity of the effects would depend on the number of occasions on which such disturbance occurred (related to the number of days of hunting) and the portion of the animals' life history during which they occurred (hunt timing). Any effects would probably be temporary (lasting for a few minutes to a few hours) and localized (occurring close to the hunt), and would probably not have lasting deleterious effects on individuals or populations. For all species, the number of animals close enough to hunting activities to be disturbed would likely be low.

For the reasons described under Alternative 2, transient or resident killer whales might be subject to increased disturbance from a whale hunt under Alternative 3, compared to current conditions under the No-action Alternative, but the number of animals close enough to hunting activities to be affected would likely be small, any disturbance would be localized and temporary, and there would likely be no lasting effects. Also for the reasons described under Alternative 2, Alternative 3 would most likely not affect prey availability for killer whales, as gray whales are generally

abundant in the project area, and hunting regulations would prohibit the killing of calves, the primary target of killer whales. As discussed in Section 4.5.2.3, Potential Injury, the likelihood that any marine mammals might sustain an injury from a vessel or errant projectile would be extremely remote.

Whale hunts would likely occur year round under Alternative 3, including during the summer when Steller and California sea lions are less abundant than at other times of year, because all but a few males and juveniles of each species move out of the project area for breeding sites in Oregon or British Columbia. Hunt-related activities could, however, adversely affect harbor seals breeding on coastal islands or rocks in the project area during June and July by disrupting pupping or breeding activities or interrupting the female/pup bond during nursing. While harbor seals might be exposed to these sources of noise, the number of animals close enough to hunting activities to be affected would probably be low. Any disturbance would be localized and temporary, and overall effects on Steller and California sea lions would probably be minor.

Sea otters are common in the project area throughout the year and are most abundant during the spring. Vessel activity or noise from vessels, aircraft, or weapons associated with whale hunting that occurs during this time might disturb otters that are swimming, foraging, or grooming causing them to spend time avoiding the activity and reducing rest periods. Hunt-related activity and noise could also disrupt nursing or caring for young at haulout sites in the project area (Section 4.5.2.1.1, Marine Mammals (excluding gray whales)). While northern sea otters might be exposed to these sources of noise, the number of animals close enough to hunting activities to be affected would probably be low. Any disturbance would likely be focused on one or a few individual animals and be localized and temporary in nature. Therefore, overall effects on northern sea otters are expected to be minor.

Compared to Alternative 2, Alternative 3 could have greater potential to disturb marine mammals generally because there would be more days of hunting (40 versus 7 to 30). In addition, there would be a greater potential for hunting to occur at all times of year under Alternative 3, making it more likely that hunting activities would overlap with periods when all species might be present and/or during all sensitive periods for all species. Also compared to Alternative 2, Alternative 3 would have an increased potential for injury because there would be more days of hunting, though the potential for injury would still be negligible.

4.5.3.3.2 Other Marine Wildlife

Under Alternative 3, effects associated with whale-hunt activities could lead to an increased risk to birds and turtles compared to the No-action Alternative. The greatest potential for effects on most species would be from vessel and noise disturbance, as described in Section 4.5.2.1.2, Other Marine Wildlife. Species for which the effects of Alternative 3 may differ from that generalized discussion are discussed below. Such effects would probably be temporary (lasting for a few minutes to a few hours) and localized (occurring near the hunt). For all species, the number of animals close enough to hunting activities to be affected by disturbance would most likely be low. Any disturbance would be localized and of short duration and would probably not cause lasting deleterious effects for individuals or populations.

Brown Pelican

Hunting under Alternative 3 would likely occur year round in the coastal portion of the Makah U&A. Some hunting would likely occur after June 1, the time that the pelicans typically arrive along the coast of Washington. Potentially as many as 40 days of hunting could occur when pelicans are present. Compared to current conditions under the No-action Alternative, the increased level of activity in the area could increase the number of times that foraging pelicans are disturbed. Any pelicans foraging in the vicinity of a hunt would likely flush and move to another foraging area away from the disturbance. Brown pelicans are a wide-ranging species and the size of the project area is large relative to the amount of area in which hunting would take place at any given time; thus, pelicans would have a large area in which to forage undisturbed. Any effects on pelicans from hunt-related disturbance over the 40 days of hunting under Alternative 3 would likely be short-term and temporary and would probably not cause lasting deleterious effects for individuals or the population.

Compared to Alternative 2, Alternative 3 would have a greater risk of disturbing brown pelicans because hunting would be allowed during the time the pelicans are likely to be present and because Alternative 3 would likely result in more days of hunting (40 versus 7 to 30).

Bald Eagle

Hunting would most likely occur year round under Alternative 3, potentially coinciding with both the early portion of the breeding season for bald eagles, as well as during the fledging period (after chicks hatch in May), leading to increased risks over the No-action Alternative. Most hunt-related activities would occur 1 to 2 miles offshore and would thus be unlikely to disturb eagles at active nests on shore. If any eagles were disturbed and flushed from their nests, there would be a

risk that they might abandon their nests, resulting in a loss of that year's chicks. If the disturbance occurred after chicks hatch in May, nest abandonment would be less likely. Some eagles in the project area may have developed tolerance for amounts of noise and human presence, as evidenced by the continued presence of breeding pairs when recreational and commercial boating traffic has increased (Table 3-39). Over the long term, eagles may also acclimate to increases in noise and human activity associated with whale hunts. The risk of negative effects associated with hunt-related disturbance would be greatest in the short term.

Compared to Alternative 2, Alternative 3 could result in greater disturbance of bald eagles primarily because of the increased number of hunting days (40 versus 7 to 30).

Marbled Murrelet

Hunting under Alternative 3 would likely occur year round over a period of 40 days. Hunting would be likely to occur during the breeding season for marbled murrelets (April 1 through September 15), which could disturb foraging murrelets and potentially reduce the amount of prey brought to chicks. Pre-breeding behaviors such as courtship and pair-bonding may also be affected during the spring. The likelihood of any disturbance is low, however, because hunt-related activities would occupy a small proportion of the project area at any given time. Marbled murrelets would likely be able to find foraging opportunities in areas where no disturbance would occur, although this could be more difficult for birds undergoing a two-month molt (which occurs during the latter half of the year).

Compared to Alternative 2, Alternative 3 has a greater potential for adverse impacts to marbled murrelets from hunt-related disturbance because hunting could occur over more days (40 versus 7 to 30) and could occur during the breeding season, when the severity of the disturbance would likely be greater.

Sea Turtles

Under Alternative 3 there would be a negligible increase in risks to sea turtles compared to the No-action Alternative. This is because it is extremely unlikely (though not impossible) that any of the four ESA-listed species of sea turtles would frequent areas in which a whale hunt would occur. In the unlikely event that a sea turtle was in the vicinity of whale hunting, any effects due to noise and human activity would probably be short-term not result in any adverse effects. As discussed in Section 4.5.2.3, Potential Injury, the potential for injury to sea turtles due a ship or weapon strikes associated with a hunt would be extremely low due to the low abundance of these species throughout their range, including the project area.

Compared to Alternative 2, there would be a slight increase in risk to sea turtles because of the increased number of days of hunting (40 versus 7 to 30).

Non-listed Marine Birds and Their Associated Habitat

Under Alternative 3, hunting would likely occur year round over a period of 40 days in the coastal portion of the Makah U&A. Both the location and the time of year of the whale hunt coincide with the large number of marine birds that uses beaches, bays, and entrances to estuaries during the breeding and the winter migratory seasons. Compared to No-action Alternative, Alternative 3 would result in a greater potential for disturbance to breeding, roosting, and migrating birds. Depending on the severity of the effects, some birds' nesting attempts could fail. The potential for such occurrences to result in long-term effects on local populations of species breeding in this zone can not be determined with certainty. On one hand, many individuals may already be acclimated to a high level of human disturbance (e.g., 4,000 annual angler trips out of Neah Bay [Table 3-23], along with other commercial and recreational vessel and aircraft traffic). On the other hand, the levels of noise and human activity associated with harpooning, securing, and dispatching a whale would be greater at that particular site than the largely transient activities that occur under current conditions. For species that use headlands and islands, Alternative 3 would not include specific protection around any rocks and islands. Hunt-related activities near these sites might disrupt nesting activity, with potential effects similar to those described for species associated with beaches, bays, and estuaries.

Compared to Alternative 2, Alternative 3 might pose a greater risk of disturbance to non-listed marine birds because hunting, and its related noise impacts, would occur throughout the breeding season, rather than just during the beginning of the breeding season. Also compared to Alternative 2, Alternative 3 would not afford specific protection to birds using Tatoosh Island and White Rock. On the other hand, due to the ability of tribal members to hunt year round, whale hunting under Alternative 3 could be more spread out over the year and less concentrated during the breeding season of April and May.

4.5.3.4 Alternative 4

Under Alternative 4, the same number of gray whales could be harvested, struck, and struck and lost as under Alternative 2 during the same season (December 1 and May 31) and in the same area (along the coastal portion of the Makah U&A). Alternative 4 would restrict hunting within 200 yards of rocks and islands in the Washington Islands National Wildlife Refuges, a restriction that would probably not change the number of hunting days, vessels, aircraft, or weapons

discharges. The restriction around rocks and islands would likely reduce some of the effects analyzed under Alternative 2 for harbor seals, California sea lions, and sea otters foraging in sanctuary and refuge waters or using refuge lands for resting or breeding. As under Alternative 2, few marine mammals would likely be exposed to hunting activities, and any effects would probably be localized and temporary. Possible adverse impacts to sea birds and turtles foraging in sanctuary and refuge waters or using refuge lands for resting or breeding would be reduced due to restrictions under this alternative. Therefore, the increased potential for adverse impacts to birds and turtles under Alternative 4, compared to current conditions under the No-action Alternative, would be similar to but slightly less than the increased potential under Alternative 2, as a larger area would be protected from frequent vessel traffic and associated noise.

4.5.3.5 Alternative 5

Under Alternative 5, whale-hunting would be allowed year round in the coastal portion of the Makah U&A. Up to two whales could be harvested per year, on average, three whales could be struck, and one struck and lost. If a whale were struck, it would be presumed to be killed. For purposes of this analysis, the maximum number of gray whales killed in any year would be three. The Tribe estimates there could be approximately four whales exposed to unsuccessful harpoon attempts and 10 whales approached for every whale struck (Section 2.3.3.2.2, Numbers and Status of Whales Harvested). Hunting would most likely occur over a period of 20 days (Table 4-1). With three strikes allowed, the analysis assumes there could be a maximum of 12 rifle shots fired or 9 grenade explosions. Alternative 5 does not prohibit hunting around any rocks or islands.

4.5.3.5.1 Marine Mammals

Under Alternative 5, effects associated with 20 days of whale-hunting the coastal portion of the Makah U&A could lead to an increased risk to marine mammals compared to the No-action Alternative. The greatest potential for effects would be from vessel and noise disturbance. For most species, effects would probably not differ from those described in Section 4.5.2.1.1, Marine Mammals (excluding gray whales). Species for which the effects of Alternative 5 might differ from that generalized discussion are discussed below. The intensity of the effects would depend on the number of occasions on which such disturbance occurred (related to the number of days of hunting) and the portion of the animals' life history during which they occurred (hunt timing). Any effects would probably be temporary (lasting for a few minutes to a few hours) and localized (occurring close to the hunt), and would probably not have lasting deleterious effects on individuals or populations. For all species, the number of animals close enough to hunting activities to be disturbed would likely be low.

For the reasons described under Alternative 2, transient or resident killer whales might be subject to increased disturbance from a whale hunt under Alternative 5, compared to current conditions under the No-action Alternative, but the number of animals close enough to hunting activities to be affected would likely be small, any disturbance would be localized and temporary, and there would likely be no lasting effects. Also for the reasons described under Alternative 2, Alternative 5 would most likely not affect prey availability for killer whales, as gray whales are generally abundant in the project area, and hunting regulations would prohibit the killing of calves, the primary target of killer whales. As discussed in Section 4.5.2.3, Potential Injury, the likelihood that any marine mammals might sustain an injury from a vessel or errant projectile would be extremely remote.

Whale hunts would likely occur year round under Alternative 5, including during the summer when Steller and California sea lions are less abundant than at other times of year, because all but a few males and juveniles of each species move out of the project area for breeding sites in Oregon or British Columbia. Hunt-related activities could, however, adversely affect harbor seals breeding on coastal islands or rocks in the project area during June and July by disrupting pupping or breeding activities or interrupting the female/pup bond during nursing. While harbor seals might be exposed to these sources of noise, the number of animals close enough to hunting activities to be affected would probably be low. Any disturbance would be localized and temporary, and overall effects on northern sea otters would probably be minor.

Sea otters are common in the project area throughout the year and are most abundant during the spring. Vessel activity or noise from vessels, aircraft, or weapons associated with whale hunting that occurs during this time might disturb otters that are swimming, foraging, or grooming, causing them to spend time avoiding the activity and reducing rest periods. Hunt-related activity and noise could also disrupt nursing or caring for young in the project area (Section 4.5.2.1.1, Marine Mammals (excluding gray whales)). While northern sea otters might be exposed to these sources of noise, the number of animals close enough to hunting activities to be affected would probably be low. Any disturbance would likely be focused on one or a few individual animals and be localized and temporary in nature. Therefore, overall effects on northern sea otters are expected to be minor.

Compared to Alternatives 2 and 4, Alternative 5 would have about the same number of occasions on which hunting, and potential disturbance, could occur (20 versus 7 to 30 days). There would be a greater potential for hunting to occur at all times of year under Alternative 5, making it more

likely that hunting activities would overlap with periods when all species might be present and/or during all sensitive periods for all species. Potential for injury would be about the same because of a similar number of days of hunting.

Compared to Alternative 3, Alternative 5 would have half as many occasions on which hunting, and potential disturbance, could occur (20 versus 40 days). Weapons discharges would also likely be fewer under Alternative 5 (12 rifle shots or 9 grenade explosions versus 28 rifle shots and 21 grenade explosions). Under both alternatives, hunting could occur year round and so overlap with periods when all species might be present and/or during all sensitive periods for all species. Potential for injury would be less under Alternative 5 because of a similar number of days of hunting.

4.5.3.5.2 Other Marine Wildlife

Under Alternative 5, effects associated with whale-hunt activities could lead to an increased risk to birds and turtles compared to the No-action Alternative. The greatest potential for effects on most species would be from vessel and noise disturbance, as described in Section 4.5.2.1.2, Other Marine Wildlife. Species for which the effects of Alternative 3 may differ from that generalized discussion are discussed below. Such effects would probably be temporary (lasting for a few minutes to a few hours) and localized (occurring near the hunt), and would probably not cause lasting deleterious effects for individuals or populations. For all species, the number of animals close enough to hunting activities to be affected by disturbance would most likely be low.

Brown Pelican

Hunting under Alternative 5 would likely occur year round in the coastal portion of the Makah U&A. Some hunting would likely occur after June 1, the time that the pelicans typically arrive along the coast of Washington. Potentially as many as 20 days of hunting could occur when pelicans are present. Compared to current conditions under the No-action Alternative, the increased level of activity in the area could increase the number of times that foraging pelicans are disturbed. Any pelicans foraging in the vicinity of a hunt would likely flush and move to another foraging area away from the disturbance. Brown pelicans are a wide-ranging species and the size of the project area is large relative to the amount of area in which hunting would take place at any given time; thus, pelicans would have a large area in which to forage undisturbed. Any effects on pelicans from hunt-related disturbance over the 20 days of hunting under Alternative 3 would likely be short term and temporary and would probably not cause lasting deleterious effects for individuals or populations.

Compared to Alternatives 2 and 4, Alternative 5 would have increased risk of disturbing brown pelicans because hunting would be allowed during the time the pelicans are likely to be present.

Compared to Alternative 3, Alternative 5 would have less risk of disturbing brown pelicans. Although hunting would occur year round under both alternatives, including times when brown pelicans are present, there would be half as many occasions on which hunting would occur (20 versus 40 days).

Bald Eagle

Hunting would most likely occur year round under Alternative 5, potentially coinciding with both the early portion of the breeding season for bald eagles, as well as during the fledging period, leading to increased risk over the No-action Alternative. Most hunt-related activities would occur 1 to 2 miles offshore and would thus be unlikely to disturb eagles at active nests. If any eagles were disturbed and flushed from their nests, there would be a risk that they might abandon their nests, resulting in a loss of that year's chicks. If the disturbance occurred after chicks hatch in May, nest abandonment would be less likely. Some eagles in the project area may have developed tolerance for amounts of noise and human presence, as evidenced by the continued presence of breeding pairs when recreational and commercial boating traffic has increased (Table 3-39). Over the long term, eagles may also acclimate to increases in noise and human activity associated with whale hunts. The risk of negative effects associated with hunt-related disturbance would be greatest in the short term.

Compared to Alternatives 2 and 4, Alternative 5 would result in about the same approximate number of occasions on which disturbance would occur (20 versus 7 to 30 days). There could, however, potentially be less risk of disturbance under Alternative 3 because some of the hunting would occur after chicks hatch in May, when eagles are less likely to abandon their nest.

Compared to Alternative 3, Alternative 5 would result in less risk of disturbance to bald eagles, because there would likely be fewer occasions on which disturbance might occur (20 versus 40 days). Under both alternatives, hunting would occur year round, so the likely severity of the disturbance would be about the same under both alternatives for each hunting occasion.

Marbled Murrelet

Hunting under Alternative 5 would likely occur year round over a period of 20 days. Hunting would be likely to occur during the breeding season for marbled murrelets (April 1 through September 15), which could disturb foraging murrelets and potentially reduce the amount of prey brought to chicks. Pre-breeding behaviors such as courtship and pair-bonding may also be

affected during this period. The likelihood of any disturbance is low, however, because hunt-related activities would occupy a small proportion of the project area at any given time. Marbled murrelets would likely be able to find foraging opportunities in areas where no disturbance would occur, although this could be more difficult for birds undergoing a two-month molt (which occurs during the latter half of the year).

Compared to Alternatives 2 and 4, Alternative 5 has a greater potential for adverse impacts to marbled murrelets from hunt-related disturbance. Although there would be about the same number of occasions on which disturbance could occur (20 versus 7 to 30 days), hunting under Alternative 5 could occur during the breeding season, when the severity of the disturbance would likely be greater.

Sea Turtles

Under Alternative 5 there would be a negligible increase in risks to sea turtles compared to the No-action Alternative, for the same reasons as described under Alternative 2.

Compared to Alternatives 2 and 4, there would be about the same level of risk to sea turtles because of the number of days of hunting would be about the same (20 versus 7 to 30 days).

Compared to Alternative 5 there would likely be half as much risk because there would likely be half as many days of hunting (20 versus 40).

Non-listed Marine Birds and Their Associated Habitat

Under Alternative 5, hunting would likely occur year round over a period of 20 days in the coastal portion of the Makah U&A. Both the location and the time of year of the whale hunt coincide with the large number of marine birds that uses beaches, bays, and entrances to estuaries during the breeding and the winter migratory seasons. Compared to No-action Alternative, Alternative 5 would result in a greater potential for disturbance to breeding, roosting, and migrating birds. Depending on the severity of the effects, some birds' nesting attempts could fail. The potential for such occurrences to result in long-term effects on local populations of species breeding in this zone cannot be determined with certainty. On one hand, many individuals may already be acclimated to a high level of human disturbance (e.g., 4,000 annual angler trips out of Neah Bay [Table 3-23], along with other commercial and recreational vessel and aircraft traffic). On the other hand, the levels of noise and human activity associated with harpooning, securing, and dispatching a whale would be greater at that particular site than the largely transient activities that occur under current conditions. For species that use headlands and islands, Alternative 5 would not include specific protection around any rocks or islands. Hunt-related activities near

these sites might disrupt nesting activity, with potential effects similar to those described for species associated with beaches, bays, and estuaries.

Compared to Alternatives 2 and 4, Alternative 5 would result in about the same number of occasions on which non-listed marine birds could be exposed to disturbance. Alternative 5 might pose a greater risk of disturbance, however, because hunting would occur throughout the breeding season, rather than just during the beginning of the breeding season. Also compared to Alternatives 2 and 4, Alternative 5 would not afford specific protection to birds using rocks and islands in the project area. On the other hand, due to the ability of tribal members to hunt year round, whale hunting under Alternative 5 could be more spread out over the year and less concentrated during the breeding season of April and May.

Compared to Alternative 5 there would likely be half as much risk to non-listed marine birds because there would likely be half as many days of hunting (20 versus 40) spread throughout the year.

4.5.3.6 Alternative 6

Alternative 6 would include the same provisions as Alternative 3 except that hunting would also be allowed in the Strait of Juan de Fuca portion of the Makah U&A. Alternative 6 would be expected to result in the same number of hunt attempts and the same number of whales struck, harvested, and struck and lost as Alternative 3. The potential for adverse impacts to other wildlife would thus be about the same under Alternative 6 as under Alternative 3. Some effects might be slightly different either because a species might occur more or less in the Strait or might complete a part of its life history differently (including at a different time) in the Strait than in the coastal portion of the Makah U&A. The following sections discuss any potential differences between effects under Alternative 3 and 6 due to these differences.

4.5.3.6.1 Marine Mammals

Sea otters are more likely to use the coastal portion of the Makah U&A than the Strait, although they briefly moved into the Strait in the 1990s. If some hunting under Alternative 6 were diverted to the Strait, Alternative 6 would thus have a lower risk of disturbance to sea otters. Harbor seals have a longer pupping season in the Strait than in the coastal portion of the Makah U&A (June to August in the Strait versus June and July on the coast). Thus there is a longer period of time that hunting in the strait could disturb harbor seals and nursing pups. Whale-hunt-related activities from June through August near seal pupping or nursing sites could cause short-term interruption of the mother/pup relationship. As with effects described under Alternative 3 for the coastal

portion of the Makah U&A, few marine mammals of any species would likely be disturbed by hunting activities, and any disturbance would probably be localized, temporary, and not have lasting effects.

4.5.3.6.2 Other Marine Wildlife

Under Alternative 6, more potential habitat for wintering, nesting, and foraging eagles and foraging marbled murrelets would potentially be exposed to disturbance from hunt-related activities, as more coastline would be exposed to hunting. On the other hand, because of the larger area in which hunting could occur, noise from hunting activities potentially affecting other marine wildlife would be more spread out. Overall, such noise would probably not affect any more eagles than if the hunt were confined to the outer Washington coast. The density of marbled murrelets is known to be higher in the Strait of Juan de Fuca (Huff et al. 2006) so more individual birds may be disturbed by hunt-related activities in this area. Marbled murrelets would likely be able to find foraging opportunities in areas where no disturbance would occur, although this could be more difficult for birds undergoing a two-month molt (which occurs during the latter half of the year).

It is unlikely that any ESA-listed species of sea turtles would come into the Strait of Juan de Fuca while migrating or foraging off the Washington coast. Thus risks would be lower under Alternative 6.

Under Alternative 6, more habitat for non-listed nesting and foraging sea birds in the project area would potentially be exposed to disturbance from hunt-related activities than under the other action alternatives, because more area around coastline and islands would be exposed to hunting. However, as mentioned above, the disturbance associated with hunt-related activities under this alternative would probably be more widely distributed than under the other action alternatives. Furthermore, because more rocks, islands, and associated densities of nesting sea birds occur along the outer coast of the project area, expanding the hunting area to the strait would probably result in a shift of some of the hunting away from these sensitive areas and to the strait. This shift in hunting activity would result in a lower risk to nesting seabirds in the project area as compared to Alternative 3.

4.6 Economics

4.6.1 Introduction

This section addresses the potential for the alternatives to affect economic conditions in the project area. Whale-hunt-related activities have the potential to affect tourism, the household use of whale products, the whale-watching industry, shipping, sport and commercial fishing, and hunt-related management and law enforcement. As discussed in Section 3.6, Economics, the labor force residing on the Makah Reservation in 2000 was about 613 persons, or approximately 3 percent of the total wage and salary workforce in Clallam County. Total personal income for the Makah Reservation is probably an even smaller proportion of countywide total personal income, because per capita income of reservation residents is substantially lower than countywide per capita income (Section 3.6.3.2.3, Personal Income). Because the economic contribution of the Makah Reservation to the countywide economy is so small, the potential for any changes on the reservation under the alternatives to have a noticeable effect on economic conditions in Clallam County as a whole is negligible. Moreover, economic effects outside the reservation are expected to be negligible in the context of the countywide economy. For these reasons, potential effects on Clallam County as a whole will not be addressed in this analysis.

One potential economic effect of the action alternatives that was not included in this analysis was the economic burden on individuals or households engaged in hunting if the cost of hunting is borne by individuals rather than by the tribal government. In 2002, the Makah tribal Council decided not to provide financial support for a hunt, leaving it up to whale-hunting families to support any hunts, consistent with tribal tradition. However, the Council did not indicate whether it would financially support future hunts should they be authorized. If individual families were to finance hunts under the action alternatives, the economic impacts on some Makah households could be substantial, given the high costs of supplies and services necessary to participate in the numerous activities related to whale hunting. Aside from the expenses of actually engaging in the hunt, there would be the costs of acquiring seagoing canoes and other whale-hunting equipment, training time, and hosting ceremonial feasts. These costs must be viewed in the light of both the depressed economic situation of many Makah households (Section 3.6.3.2.3, Personal Income) and the Makah Tribe restriction that prohibits tribal members who participate in a whale hunt from receiving monetary compensation. It is likely that a family would launch its own whale hunting enterprise only if that family were economically successful during the several months between whale hunting seasons.

These economic constraints would likely affect the number of hunts that could take place in any given year. However, the magnitude of the household costs arising from the whale hunt, and the distribution of these costs across the Makah community, were not reasonably foreseeable because of uncertainty about what costs families would bear rather than the community as a whole, and about the number of families that would organize a whale-hunting crew.

4.6.2 Evaluation Criteria

The criteria used to determine the potential for effects on economic conditions under the alternatives include the potential change in revenue, employment, and/or economic value associated with (1) tourist-related business activity, (2) household consumption of whale products and manufacture and sale of traditional handicrafts, (3) the whale-watching industry, (4) commercial shipping and sport and commercial fishing, and (5) hunt-related management and law enforcement. The following sections discuss these matters in greater detail and identify how the effects of the alternatives may be assessed and differentiated.

4.6.2.1 Tourism

Tourism is a relatively large industry in Clallam County; visitors spent $140 million in the County in 2003 (Table 3-17). Spending in the food and beverages services sector accounted for about 28 percent of total visitor spending and in the accommodations sector accounted for about 19 percent of total visitor spending. Figures are not available for the amount of revenue generated by reservation tourism and recreation or the number of jobs and amount of personal income that depend on visitor spending, but about 10 percent of jobs in the local area are in sectors that depend directly on tourism (Table 3-22).

Activities associated with a whale hunt, including the hunt itself and harvest-related ceremonies and celebrations, have the potential to affect the tourism industry in Clallam County by changing the number of visitors to the area and their travel expenditures. Persons seeking opportunities to view a whale hunt may visit trails and beaches in the Olympic National Park, OCNMS, and the Makah Reservation. It is possible that visitation to these areas would increase under the action alternatives, as interested observers seek vantage points to view the hunt. Also, there is the potential for persons attracted to the area by hunt-related activities (such as protesters, law enforcement officers, media representatives, or other observers) to engage in other activities, such as camping, sightseeing, or wildlife viewing. Spending associated with these activities could increase under the action alternatives.

As described in Section 3.6.3.3.1, Summary of Economic Effects of the Makah Gray Whale Hunts, no quantitative information is available concerning the economic effects of the Makah Tribe's practice whale hunt exercises in late 1998, or their whale hunting in the spring of 1999 and of 2000. Protests and media coverage of these events may have temporarily generated an increase in the number of people in the area, who might have sought accommodations and services in the communities of Neah Bay, Clallam Bay, and Sekiu. Some anecdotal information suggests this was the case, while other anecdotal information suggests it was not. No economic data demonstrate that the influx of visitors during previous hunt-related events resulted in an increase in the number of rooms rented or in other economic activity. Given the likely influx of visitors coming to Neah Bay to observe, protest, or report on the hunt, or to participate in tribal ceremonies and celebrations, it is reasonable to expect there would be a short-term increase in tourist-related business activity associated with these visitors. Any short-term effect is likely to be minor, and may diminish as more hunts occur. Section 3.6.3.3.1, Summary of Economic Effects of the Makah Gray Whale Hunts, indicates that there were fewer protestors at the 2000 hunt than the 1999 hunt. Over the long term, there is no information suggesting that the hunts in 1999 and 2000 had any lasting effect on tourism in Clallam County or Neah Bay. Thus, while a whale hunt might attract visitors to the Neah Bay area, it is likely that any positive effect would be short-term and minor.

In addition to attracting visitors to Clallam County when hunt-related activities occurred, Makah whale hunting might have a broader and longer-term positive effect on the Tribe's efforts to bolster the tribal tourism sector of the reservation economy. As Jollie and Green (2001) report:

> Visitors mostly learned about the Makah Tribe through whaling notoriety and Olympic National Park and hiking trail advertisements. . . . The controversy over whaling has had a direct impact on tourism as people are drawn to the area by media reporting of the whaling events.

Controversy surrounding resumption of whale hunting has rekindled international interest in the Makah people at the same time as tribal tourism and other types of cultural tourism are rapidly gaining popularity throughout the world (Washington State Parks 2004). The Makah Tribe has been an active participant in programs by Washington State and the Affiliated Tribes of Northwest Indians to market tribal tourism (Affiliated Tribes of Northwest Indians undated; Jollie and Green 2001; May 2001). Although the government sector is the dominant employer on the Makah Reservation (Section 3.6.3.2.2, Employment), tourism is also considered a key element of the local economy (Section 3.6.3.2.4, Contribution of Tourism to the Local Economy).

Any positive effects of a whale hunt on tourism (both locally and County-wide) could be offset to some extent if opposition to the hunt resulted in boycotts of Olympic Peninsula tourism activities, including boycotts of Neah Bay specifically. Section 3.6.3.3.1, Summary of Economic Effects of the Makah Gray Whale Hunts, describes efforts to organize a boycott of the Makah nation, but no available information indicates the boycott had any effect on tribal enterprises. Similarly there is no evidence that calls for boycotts of Olympic Peninsula tourism had any negative economic impact on tourist-related businesses in the area. It is possible that some persons who might participate in a boycott would not do so if the whale hunting is conducted with restrictions on hunt timing, area, or the number or identity of whales that may be struck. Protest activities and vocal opposition to the hunt have come from groups that have expressed opposition to whale hunting under any conditions, however (Section 4.8.3, Social Environment, Evaluation of Alternatives). Persons opposed to whale hunting under any conditions would be likely to participate in a boycott under any of the action alternatives.

The effects on tourism would depend primarily on (1) the anticipated number of persons who might be attracted to the area by hunt-related activities (such as reporters, protestors, or observers), and (2) the anticipated amount, intensity, duration, scope, and content of media coverage. These two factors are also discussed in Section 4.12, Aesthetics.

4.6.2.2 Household Use of Whale Products

Under current conditions, Makah tribal members do not have the opportunity to consume freshly harvested whale products. Drift whales or whales incidentally caught in fishing operations may provide an opportunity to consume whale products or to produce hand-crafted articles made from whale products (Section 2.4.2, Subsistence Use of Drift Whales). If a whale hunt were authorized under any of the action alternatives, Makah tribal members could consume the meat, blubber, and other edible products obtained from harvested whales (Section 2.3.3.2.6, Whale Product Use and Distribution). Moreover, within the borders of the United States, tribal members could share whale products from any hunt with relatives of participants in the harvest, with others in the local community (both non-relatives and relatives), or with persons in locations other than the local community with whom local residents share familial, social, cultural, or economic ties.

Subsistence foods products from a whale would not generate revenue through market sales, but would meet nutritional needs of Makah families. Thus attaching a dollar value to food products from harvested whales is difficult. Nevertheless, the harvest of whales for food has economic value to households as they potentially replace foods that families would otherwise have to

purchase. The distribution of subsistence products through sharing networks makes it likely that many households and individuals would enjoy the economic benefits of a whale harvest.

The Tribe's 2006 household whale hunting survey indicated that 80 percent of those surveyed desired whale meat as part of their regular diet (Section 3.10.3.5.1, Makah Whaling). Considering the numbers of whales that could be harvested under the action alternatives, and the customary sharing of subsistence resources among tribal members (Section 3.10.3.5.2, Makah Subsistence Consumption), the per capita economic value of whale products as a food resource would probably be small. The whale products consumed in 1999 equaled approximately 2.4 pounds per capita (Section 3.10.3.5.1, Makah Whaling). Nevertheless, the reintroduction of whale food products into the Makah community could help offset potential food shortages if other subsistence resources diminish, and could prevent people from having to spend cash to replace subsistence foods (Renker 1996; 2007).

In addition, the Makah Tribe could sell or offer for sale non-edible whale products used to create authentic articles and native handicraft and clothing, including artwork, within the United States under any of the action alternatives (Section 2.3.3.2.6, Whale Product Use and Distribution). A whale hunt would likely increase the availability of non-edible whale products for the manufacture and sale of traditional handicrafts. The Makah have a long tradition of manufacturing carvings, baskets, and other items for sale to collectors and tourists (Erikson 2003), and "[t]ribal artisans also produce carvings, jewelry, and silk screen designs for sale in local shops and regional galleries" (Section 3.6.3.2.1, General Description of the Local Economy). Seventy-six percent of Makah households expressed a desire for whale bones, possibly to revitalize certain crafts (Section 3.10.3.5.1, Makah Whaling). Hand-crafted articles made from whale products could become sources of income for some Makah households and a means of perpetuating indigenous art forms and crafts. Renker (1996) notes that the bones of a gray whale incidentally caught in 1995 were distributed to Makah artists through the Makah Cultural and Research Center, which is one of the largest retail outlets of Makah artwork on the reservation (Erikson 2003). According to Renker (2007), some Makah indicated they were disappointed that the bones of the whale harvested in the 1999 hunt were not made available to the community for private use. They were used by the local school for a bone preservation project instead (Section 3.10.3.5.1, Makah Whaling).

The amount of whale products for household consumption and the manufacture and sale of traditional handicrafts would depend on the number of whales that could be harvested.

4.6.2.3 Whale-watching Industry

Whale-watching is not economically important in Clallam County, but there are whale-watching operations outside the county in Westport, Washington and Vancouver Island, British Columbia (Section 3.6.3.3.2, Commercial Value of Whales). Information on the current numbers of whale-watching expeditions, whale-watching passengers, whale-watching revenues in these areas, or people employed in the whale-watching sector is not available. A Makah gray whale hunt could affect whale-watching revenues or employment if a hunt caused prospective passengers to avoid whale-watching, if a hunt occurred in the vicinity of whale-watch operations and disturbed whales away from the area, or if whales altered their behavior as a result of hunting and avoided whale-watching vessels. For the reasons discussed below, it is unlikely that whale-hunting under any of the action alternatives would have more than a negligible effect on whale-watching revenues or employment within or outside the project area through any of these mechanisms.

First, while negative publicity about Makah whale hunting could reduce public participation in whale-watching in general, there is no information demonstrating such an effect. In addition, it is unlikely that whale-hunting activities under the action alternatives would interfere with whale-watching tours in the project area. There is no evidence that whale-watching operators conduct tours targeting gray whales in the project area. There are few whale-watching tours or charters in Clallam County, although whale-watching charters are available through one resort in Sekiu and may be available through some sport fishing boat operators (Section 3.6.3.3.2, Commercial Value of Whales). Most whale-watching operations in Washington State focus on killer whales in Puget Sound and the eastern portion of the Strait of Juan de Fuca (an area outside the Makah U&A) (NMFS 2001). While gray whale watching is an important tourist activity off Westport, located on Washington's Pacific coastline at Grays Harbor (Section 3.6.3.3.2, Commercial Value of Whales), that area is approximately 80 miles south of the Makah U&A. Most of Westport's charter boat businesses offer whale-watching trips from March to May, when gray whales can be viewed just off the coast during their annual migration. It is unlikely that these tour operators would expend the time and fuel to travel to the Makah U&A when gray whales are present immediately offshore. Whale-watching tours from Westport, therefore, would be unlikely to encounter hunt-related activities under any of the action alternatives. The gray whales are northbound at that time and pass Westport before reaching the Makah U&A farther north. Whale-hunting activities under any of the action alternatives, therefore, would be extremely unlikely to scare whales away from areas where they may be encountered by whale-watching tours out of Westport, even during the peak tour period of March through May.

Whale-watching is also an important tourist activity off Vancouver Island (Section 3.6.3.3.2, Commercial Value of Whales). Although most Vancouver Island-based whale-watch operators also advertise opportunities for viewing other wildlife, including gray whales, the whale-watching tours and charters focus largely on opportunities for viewing killer whales. Further, none of these operators describes tours that include the Makah U&A.

Finally, it is unlikely that gray whales would respond to a Makah tribal hunt by avoiding whale-watch vessels (Section 3.4.3.6.6, Vessel Interactions). ENP gray whales have been exposed to hunting for decades by Chukotka natives, yet that ongoing hunt has not translated into a general avoidance of boats by gray whales (NMFS 2001; Hoyt and Hvenegaard 2002). There is no evidence to suggest that hunting by the Makah Tribe would cause a change in behavior that has not yet been demonstrated to result from a far more extensive hunt. ENP gray whale behavior also does not appear to have been affected by other types of human and vessel activity. As described in Section 3.4.3.6.6, Vessel Interactions, these whales migrate through waters occupied by large numbers of commercial and private vessels. Off the coast of Los Angeles, California, during the whale-watching season, Rugh et al. (1999) reported that 8 to 12 boats may follow a single whale. The number of approaches incident to Makah whale hunting would be minor compared to the whales' existing level of exposure to vessels.

If a Makah gray whale hunt were to alter gray whale behavior, it is not possible to estimate the amount of decrease that might occur in revenues of whale-watch operators. Current revenues of whale-watch operators are unknown, and there is no information available or that could reasonably be obtained that would allow an estimation of how much whale-watching revenues might decrease if gray whale behavior were altered by a Makah hunt. The extent to which a Makah hunt had an effect on gray whale behavior, and a subsequent indirect effect on whale-watching revenues, would depend primarily on factors that could cause whales to avoid boats, including the number of whales that could be struck and the estimated number of whales with harpoon attempts and approaches.

4.6.2.4 Shipping and Ocean Sport/Commercial Fishing

Under current conditions, the value of commercial shipping in Washington State is $63 billion, a substantial proportion of which is the result of shipping that passes through the project area (Washington Joint Transportation Committee 2007, see Section 3.6.3.1.4, Commercial Shipping). Estimated revenues from sport fishing trips from Neah Bay that targeted salmon, steelhead, groundfish, halibut, and albacore tuna ranged between about $1.6 million and $2.4 million

annually (in 2000 dollars) from 1997 to 2004 (Section 3.6.3.2.5, Contribution of Ocean Sport Fishing to the Local Economy). Most fishing derbies in Clallam County take place during late spring through early autumn. The value of commercial fish landings at the Port of Neah Bay since 2000 has ranged from $4.0 to $5.7 million annually (Section 3.6.3.2.6, Contribution of Ocean Commercial Fishing to the Local Economy).

If whale-hunting restricted the operations of commercial shipping traffic or sport and commercial fishing vessels, it could affect revenues or employment associated with these sectors. Vessels not involved in whale hunting would have to maintain prudent distances from whale hunts as a safety precaution. As discussed in Section 2.3.3.2.7, Public Safety Measures and Enforcement, there would be a moving exclusionary zone (MEZ) with a 500-yard radius centered on tribal vessels actively engaged in a whale hunt under any of the action alternatives. No person or vessel would be able to enter the MEZ when it was activated, except for the authorized Makah whale hunt vessel, a media pool vessel preauthorized by the Coast Guard, or another vessel or person preauthorized by the Coast Guard. The requirement to remain outside the MEZ could increase operating costs if it caused vessels to take longer routes to reach their destinations or could decrease revenues if it prevented fishing vessels from accessing fishing grounds. It is possible that revenues associated with shipping, sport fishing, or commercial fishing could decrease in response to these restrictions.

The small size and limited duration of the MEZ would likely result in negligible disruption of commercial shipping or sport and commercial fishing. Further, as described in Section 4.13.2.2, Marine Traffic, hunt-related activities would probably not interfere with commercial shipping traffic because most, if not all, hunting would likely occur within the Coast Guard RNA, which lies almost entirely within the OCNMS area to be avoided.

The potential for any of the alternatives to affect shipping or sport and commercial fishing would depend primarily on the number of times the MEZ would be activated. It is not possible to predict how many times the MEZ would be activated on a given day of hunting, but it is reasonable to expect that the number of times per day of hunting would be the same, on average. For sport fishing operations, the potential for an effect could also depend on the season that hunting is allowed. Sport fishing for salmon occurs during the summer and early fall, while sport fishing for other species occurs year round (Section 3.6.3.2.5, Contribution of Ocean Sport Fishing to the Local Economy). Hunting that occurs on summer days would have a greater potential to affect sport fishing than hunting that occurs on winter days.

4.6.2.5 Management and Law Enforcement

Under current conditions, NMFS' annual budget for marine mammal management in the Northwest Region ranges from zero to $500,000 per year. The overall budget for monitoring the ENP gray whale population is approximately $65,000. Within the ENP gray whale budget, funding has been provided for photo-identification studies of gray whales in local survey areas with one purpose, among others, being management of a potential Makah gray whale hunt. It is uncertain whether NMFS would continue to fund the photo-identification program if a hunt was not authorized. Because no gray whale hunting currently occurs, there are no NMFS observers associated with a hunt.

If a whale hunt were authorized under any of the action alternatives, it is likely that hunting would be monitored and evaluated for its impact on the ENP gray whale population in general and on whales identified in local survey areas in particular. Funding would likely continue for the photo-identification studies aimed at identifying whales in local survey areas. Estimated annual costs for the photo-identification study are $65,000 (NMFS 2008). Funding would also likely be provided for NMFS and Makah observers during and immediately following a hunt (Section 2.3.3.2.7, Other Environmental Protection Measures). Cost of a NMFS observer could be as high as $7,000 per month (i.e., averaging $233 per day of hunting) (NMFS 2008).

If whale hunting by the Tribe engendered protests by whaling opponents, as it has in the past, there would likely be law enforcement operations to maintain order. Past law enforcement activities have involved the United States Coast Guard, NMFS Office of Law Enforcement, the State of Washington, Clallam County Sheriff's Office and Makah tribal police. Estimated costs for all but non-tribal agencies could approach $43,000 per day, with the bulk of costs associated with United States Coast Guard aircraft and vessels (NMFS 2008, Table 4-3). An additional $2,790 per month could be incurred to provide mobile command facilities for enforcement personnel (NMFS 2008)

Under any of the action alternatives, costs associated with hunt observers or with law enforcement would depend primarily on the number of days of hunt-related activity (which could include preparations for hunts and protests of hunt; Table 4-3). It is not possible to predict the number of days of preparation or protests that would occur for each day of hunting. Estimated enforcement costs for any of the alternatives may therefore be conservative. Costs for photo-identification studies would likely be the same regardless of the action alternative implemented.

4.6.3 Evaluation of Alternatives

The following sections consider the potential for the alternatives to affect economic conditions both within and outside the project area. Potential effects outside the project area include such things as changes in revenue or employment associated with whale-watching and tourism. For each alternative, the discussion addresses the potential effects on tourism, household use of edible and non-edible whale products, the whale-watching industry, commercial shipping and sport and commercial fishing, and management and law enforcement.

Under any of the action alternatives, tourist-related enterprises in and around the project area could experience a minor increase in business activities over the short term. Interested tourists and other visitors would most likely visit the project area to observe the whale hunt and might participate in harvest-related celebrations as media stories raised public awareness of the Makah whale hunt and the Tribe's whale hunting tradition. Some individuals might decide not to visit the project area based on negative publicity about the whale hunt. Overall, it is reasonable to expect more visitors would be drawn to the area than avoid the area as a result of a whale hunt, potentially resulting in a minor short-term increase in tourism-related business activity. The amount of any such potential short-term increase would likely depend on the number of days of hunting under a particular alternative. Thus alternatives with more days of hunting would likely result in a greater increase.

The potential also exists for increased long-term business activity as a result of expansion of the tribal tourism sector of the reservation economy. Such a potential is likely linked to whether hunting occurs at all and is therefore likely to be similar across all of the action alternatives.

Under any of the action alternatives, the potential for whale products to become available for household consumption and the making and selling of handicraft articles would increase due to the opportunity for tribal members to harvest whales. The amount of any increase would depend on the number of whales likely to be harvested under a particular alternative. Thus alternatives with higher harvest levels would likely result in a greater increase.

The lowest risk of adverse effects on whale-watching operators, commercial shipping traffic and sport and commercial fisheries would occur under the No-action Alternative because no whale hunts would be permitted under this alternative. Under any of the action alternatives, it is unlikely that Makah whale hunting would have more than a negligible effect on whale-watching, for the reasons described above (Section 4.6.2.3, Whale-watching Industry). To the extent such an impact did occur, its amount would probably depend on the number of whales that could be

struck or exposed to harpoon attempts and approaches. Thus alternatives that result in greater numbers of strikes, harpoon attempts, or approaches would have a greater potential to adversely affect whale-watch operators.

The potential for disruption of commercial shipping traffic and sport and commercial fisheries would probably be negligible because of the small size and duration of the MEZ. To the extent such an impact did occur, its amount would probably depend on the number of times the MEZ was activated, which would depend on the number of days of hunting. Thus alternatives that result in more days of hunting would have a greater potential to adversely affect commercial shipping traffic and sport and commercial fisheries.

The potential for economic effects associated with the costs of law enforcement and management would be lowest under the No-action Alternative, while alternatives that involve more days of hunting and longer hunting seasons could potentially have higher associated costs.

4.6.3.1 Alternative 1

Under the No-action Alternative, no whale hunt would be permitted, and no whale hunting or associated activities (e.g., ceremonies, celebrations, protests, monitoring, law enforcement) would be anticipated. There would be no potential for visitors to view hunt-related activities in the project area or to participate in harvest-related celebrations. There would also be no potential for media coverage of the whale hunt that might, in turn, generate interest in the Makah Reservation as a cultural tourism destination. Consequently, the level of business activity for tourist-related enterprises in and around the project area would not be expected to differ from the current level.

With the possible exception of products from drift whales, there would be no potential for households to consume whale meat and blubber or use non-edible whale products for the manufacture and sale of traditional handicrafts. There would be no potential for a whale hunt to disrupt the whale-watching industry, commercial shipping, or sport or commercial fishing. Consequently, the economic conditions of the whale-watching industry, commercial shipping, and sport and commercial fishing would probably not differ from current conditions. The lack of whale hunting would make monitoring and enforcement unnecessary, so there would be no additional costs associated with these activities. The current costs for photo-identification studies may or may not continue.

4.6.3.2 Alternative 2

Under Alternative 2, hunting would be expected to occur on a total of 7 to 30 days, mostly during April and May. The limit on the number of struck whales would be seven and the limit on the

number of harvested whales would be an average of four per year with a maximum of five in any one year. Approximately 28 whales would be exposed to harpoon attempts and 140 would be approached annually. Compared to the No-action Alternative, under which there would be no hunting, Alternative 2 is likely to result in (1) minor short-term increases in tourism from the likely 7 to 30 days of hunting, (2) an increase of four whales annually available for household use by Makah tribal members, (3) negligible changes in whale-watching revenues, (4) minor increases in interference with shipping and sport/commercial fishing vessels, and (5) an increase in expenditures for management and law enforcement.

4.6.3.2.1 Tourism

Under Alternative 2 visitors would likely be drawn to the project area on the 7 to 30 days that whale-hunting that would occur, potentially creating a minor increase in the level of business activity for nearby tourist-related businesses, compared to the No-action Alternative (under which no visitors would come to the project area to observe whale hunts). The increased business activity would likely be short-term (lasting only during the period that the whale hunt was occurring), as visitors would come to observe the hunt and to participate in harvest-related celebrations. Hunting would be allowed from December 1 through May 31, but would most likely occur during April and May. Potential inclement weather during April and May could deter visitors from coming to observe a whale hunt or participate in harvest-related ceremonies.

It is uncertain whether a hunt would result in a long-term increase in tourism. Publicity about the whale hunt could generate interest in the Makah Reservation as a cultural tourism destination, while some individuals might not visit the project area due to negative publicity about the whale hunt.

4.6.3.2.2 Household Use of Whale Products

Compared to the No-action Alternative (under which no whales could be harvested and the Tribe would have access only to drift whales or whales incidentally caught in fishing gear), up to five whales annually could be harvested under Alternative 2, with an average annual harvest of four whales allowed. Limits would be placed on the harvest of identified whales, which could affect the Tribe's ability to harvest the full number of whales allowed. The hunting season would be restricted to the period from December 1 through May 31, with most hunts likely occurring during April and May. Potential inclement weather during these months would likely affect the number of days the Tribe could hunt, which could also affect the Tribe's ability to harvest the full number of whales allowed.

Under Alternative 2 the amount of whale products available for household consumption, manufacturing, and selling of traditional handicrafts would increase over current conditions (the No-action Alternative). The increase would come from whales the Tribe was actually able to harvest, which would likely be four whales annually. The actual number of whales harvested each year may be lower because of the constraints on identified whales and hunting season.

4.6.3.2.3 Whale-watching Industry

Compared to the No-action Alternative (under which no whales would be struck, exposed to harpoon attempts, or approached by hunters), under Alternative 2, up to seven whales may be struck annually, 28 exposed to unsuccessful harpoon attempts, and 140 approached. Limits would be placed on the harvest of identified whales, which could affect the Tribe's ability to harvest the full number of whales allowed. This in turn could affect the number of whales struck, exposed to unsuccessful harpoon attempts, and approached. The hunting season would be restricted to the period from December 1 through May 31, with most hunts likely occurring during April and May. Potential inclement weather during these months would likely affect the number of days the Tribe could hunt, which could also affect the number of whales struck, exposed to unsuccessful harpoon attempts, and approached.

As described in Section 4.6.2.3, Whale-watching Industry, there is no information to suggest individuals would avoid whale-watching tours if a Makah hunt is authorized, and it is unlikely that Makah hunting would activities would overlap geographically with whale-watching tours. It is also unlikely that gray whales would respond to a Makah tribal hunt by avoiding whale-watch vessels. As described in Section 4.5, Other Wildlife, it is likely that any effects of a hunt on other marine mammals, which might be a target of whale-watch operators, would be localized and temporary. To the extent such an effect might occur under Alternative 2, it is not possible to estimate the amount of decrease that might occur in revenues of whale-watch operators. Current revenues of whale-watch operators are unknown, and there is no information available or that could be obtained that would allow an estimation of how much revenues might decrease if ENP gray whale behavior were altered by a Makah hunt.

4.6.3.2.4 Shipping and Ocean Sport/Commercial Fishing

Compared to the No-action Alternative (under which there would be no whale hunts and no activation of the MEZ) activation of the MEZ on 7 to 30 days during a whale hunt under Alternative 2 would lead to an increased potential for restricting operations of commercial

shipping vessels and sport and commercial fisheries. Hunting would occur primarily in April and May.

The small size and limited duration of the MEZ would likely result in negligible disruption o f commercial shipping or sport and commercial fishing. Further, as described in Section 4.13.2.2, Marine Traffic, hunt-related activities would probably not interfere with commercial shipping traffic because most, if not all, hunting would likely occur within the Coast Guard RNA, which lies almost entirely within the OCNMS area to be avoided. Also, most sport fishing for salmon occurs outside the time that whale hunting would take place under Alternative 2. Consequently, only minor economic impacts to commercial shipping or sport and commercial fisheries would be expected as a result of implementing Alternative 2.

4.6.3.2.5 Management and Law Enforcement

Compared to the No-action Alternative (under which no whale-hunting or associated protests would occur) Alternative 2 could result in 7 to 30 days of hunting and associated protests. The costs for hunt observers would increase over current conditions by the number of days of hunting. The cost for law enforcement would increase over current conditions by the number of days activities occurred that required a law enforcement presence. Such activities might include hunting, protests, and ceremonies. Actual days of hunting would represent the minimum number of days on which a law enforcement presence might be required, while the number of days requiring a law enforcement presence might be twice as many days as actual days of hunting. It is uncertain whether the existing photo-identification study would continue to be funded under the No-action Alternative. If not, then its continuation under Alternative 2 would represent an increased cost beyond current conditions.

Under Alternative 2, costs would be incurred for NMFS and Makah observers during the 7 to 30 days that hunting occurred, resulting in an increase in costs over current conditions (the No-action Alternative). Estimated costs for a NMFS observer for 7 to 30 days could be as high as $7,000 (based on a monthly rate) (NMFS 2008).

If whale hunting by the Tribe engenders protests by whaling opponents, as it has in the past, there could also be costs associated with law enforcement activities. It is not possible to predict how many of the 7 to 30 days of hunting likely under Alternative 2 would require a law enforcement presence, or which governmental entities would provide law enforcement (federal, state, local and tribal). As described under Section 4.6.2.5, Management and Law Enforcement, estimated costs for all non-tribal enforcement agencies could approach $43,000 per day, with overall costs

ranging from $529,232 to as much as $1.5 million depending on the number of hunt days (Table 4-3). As with the other alternatives, the bulk of costs would be associated with United States Coast Guard aircraft and vessels (NMFS 2008).

4.6.3.3 Alternative 3

Under Alternative 3, hunting would be expected to occur on a total of 40 days year round. The limit on the number of struck whales would be seven and the limit on the number of harvested whales would be an average of four per year with a maximum of five in any one year. Approximately 28 whales would be exposed to harpoon attempts and 140 would be approached annually. Compared to the No-action Alternative, under which there would be no hunting, Alternative 3 is likely to result in (1) minor short-term increases in tourism from the likely 40 days of hunting, (2) an increase of four whales annually available for household use by Makah tribal members, (3) negligible changes in whale-watching revenues due to changes in whale behavior as a result of interactions between hunters and whales, (4) minor increases in interference with commercial shipping and sport and commercial fishing vessels, and (5) an increase in expenditures for management and law enforcement over the likely 40 days of hunting.

4.6.3.3.1 Tourism

Compared to the No-action Alternative (under which no whale hunts would occur to draw visitors to the project area), the whale hunt and associated activities under Alternative 3 would likely draw visitors to the project area on the days that hunting occurred, potentially creating a minor increase during those days in the level of business activity for tourist-related enterprises nearby. The increased business activity would likely be short term (lasting only as long as the hunt), as visitors would come to observe the hunt and to participate in harvest-related celebrations. Thus potential increases in business activity under Alternative 3 would likely occur on a total of 40 days. Because there would be no limits on the hunting season, hunting would likely occur year round. It is uncertain whether a hunt would result in a long term increase in tourism. Publicity about the whale hunt could generate interest in the Makah Reservation as a cultural tourism destination, while some individuals might not visit the project area due to negative publicity about the whale hunt.

Compared to Alternative 2, the increased number of days of hunting (40 versus 7 to 30) would probably result in more visitors who would come to the Makah Reservation to observe a whale hunt and/or participate in activities associated with the hunt, such as harvest-related celebrations. The number of whale hunts portrayed in the media would also likely increase, increasing the

interest in the Makah Reservation as a cultural tourism destination. In addition, because hunts would likely occur during the summer when visitation by tourists to the Olympic Peninsula is comparatively higher than April and May (when hunting would likely occur under Alternative 2), this could further increase business activity for tourist-related enterprises in and around the project area.

4.6.3.3.2 Household Use of Whale Products

Compared to the No-action Alternative (under which no whales could be harvested and the Tribe would have access only to drift whales or whales incidentally caught in fishing gear) up to five whales annually could be harvested, with an average annual harvest of four whales allowed. No limits would be placed on the harvest of identified whales, and no limits would be placed on the hunting season. Hunting would likely occur year round. Under Alternative 3 the amount of whale products available for household consumption, manufacturing, and selling of traditional handicrafts would increase over current conditions (the No-action Alternative). The increase would come from whales the Tribe was actually able to harvest, which would likely be four whales annually, on average. The lack of limits on harvest of identified whales and hunting seasons would make it likely the Tribe could harvest the full number allowed.

Compared to Alternative 2, the lack of restrictions on the harvest of identified whales and the lack of restrictions on hunting seasons would increase the Tribe's ability to harvest the full number of whales. Consequently, the potential for whale products to be available for household consumption and the making and selling of traditional handicraft articles would likely be higher than under Alternative 2. The potential increase in income for households that participate in the making and selling of such articles would likewise be higher.

4.6.3.3.3 Whale-watching Industry

Compared to the No-action Alternative (under which no whales would be struck, exposed to harpoon attempts, or approached by hunters), under Alternative 3, up to seven whales may be struck annually, 28 exposed to unsuccessful harpoon attempts, and 140 approached. No limits would be placed on the harvest of identified whales or hunting seasons.

As described in Section 4.6.2.3, Whale-watching Industry, there is no information to suggest individuals would avoid whale-watching tours if a Makah hunt is authorized, and it is unlikely that Makah hunting activities would overlap geographically with whale-watching tours. It is also unlikely that gray whales would respond to a Makah tribal hunt by avoiding whale-watching vessels. As described in Section 4.5, Other Wildlife, it is likely that any effects of a hunt on other

marine mammals, which might be a target of whale-watching operators, would be localized and temporary. To the extent such an effect might occur under Alternative 3, it is not possible to estimate the amount of decrease that might occur in revenues of whale-watching operators. Current revenues of whale-watching operators are unknown, and there is no information available or that could be obtained that would allow an estimation of how much revenues might decrease if ENP gray whale behavior were altered by a Makah hunt.

The number of whales allowed to be harvested or struck under Alternative 3 would be the same as under Alternative 2. However, the lack of restrictions on the hunting season and the harvest of identified whales would make it more likely the Tribe could harvest the full number of whales allowed. Therefore, the potential for a change in revenues of whale-watching operators, compared to the No-action Alternative, could be somewhat higher than the potential described under Alternative 2.

4.6.3.3.4 Shipping and Ocean Sport/Commercial Fishing

Compared to the No-action Alternative (under which there would be no whale hunts and no activation of the MEZ) activation of the MEZ on 40 days during a whale hunt under Alternative 3 would lead to an increased potential for restrictions on the movement of commercial shipping traffic and sport and commercial fisheries. However, the small size and duration of the MEZ would make it likely that restrictions on vessel movement or fishing operations caused by activation of the MEZ would be negligible. Further, as described in Section 4.13.2.2, Marine Traffic, hunt-related activities would most likely not interfere with commercial shipping traffic because most, if not all, hunting would probably occur within the Coast Guard RNA, which lies almost entirely within the OCNMS area to be avoided. Consequently, only minor economic impacts to commercial shipping or sport and commercial fisheries would be expected as a result of implementing Alternative 3.

Compared to Alternative 2, the additional days of hunting (40 versus 7-30) would result in more instances of the MEZ being activated. This would increase the potential for whale hunting to interfere with commercial shipping or sport and commercial fishing operations beyond the potential under Alternative 2. In addition, under Alternative 3, hunting could occur year round, compared to Alternative 2, which would restrict hunting to the period from December 1 through May 31, with most hunting likely occurring in April and May. Although commercial shipping and fishing occur year round, sport fishing is more likely to occur during summer months, particularly sport fishing vessels departing from Neah Bay. Thus for hunting that occurs after June 1 under

Alternative 3, there is a greater potential for activation of the MEZ to interfere with sport fishing, compared to the interference likely on a day of hunting under Alternative 2.

4.6.3.3.5 Management and Law Enforcement

Compared to the No-action Alternative (under which no whale-hunting or associated protests would occur) Alternative 3 could result in 40 days of hunting and associated protests. The amount of increase in costs for hunt observers and law enforcement would increase over current conditions by the number of days of hunting. It is uncertain whether the existing photo-identification study would continue to be funded under the No-action Alternative. If not, then its continuation under Alternative 3 would represent an increased cost beyond current conditions.

Under Alternative 3, costs would be incurred for NMFS and Makah observers during the 40 days that hunting occurred, resulting in an increase in costs over current conditions (the No-action Alternative). Estimated costs for a NMFS observer for 40 days of hunting could be as high as $42,000 (based on rate of $7,000 per month over a span of six months) (NMFS 2008).

If whale hunting by the Tribe engenders protests by whaling opponents, as it has in the past, there could also be costs associated with law enforcement activities. It is not possible to predict how many of the 40 days of hunting likely under Alternative 3 would require a law enforcement presence, or which governmental entities would provide law enforcement (federal, state, local and tribal). As described under Section 4.6.2.5, Management and Law Enforcement, estimated costs for all non-tribal enforcement agencies could approach $43,000 per day, with overall costs estimated at $2.1 million. As with the other alternatives, the bulk of costs would be associated with United States Coast Guard aircraft and vessels (NMFS 2008; Table 4-3). Compared to Alternative 2, these costs would be greater because of the potentially greater time span allowed for hunting.

4.6.3.4 Alternative 4

Alternative 4 would include the same limits on the number of whales harvested as Alternative 2 and would impose the same restrictions on the hunting season. The additional restrictions contained in Alternative 4 (no hunting within 200 yards of rocks and islands in the Washington Islands National Wildlife Refuges) would not be expected to influence the number of days of hunting, the number of whales struck or harvested, or the number of whales exposed to harpoon attempts or approaches. Therefore, Alternative 4 has the same potential as Alternative 2 to result in a change in revenue, employment, and/or economic value, relative to the No-action Alternative, associated with (1) tourist-related business activity, (2) household consumption and

manufacture and sale of traditional handicrafts, (3) the whale-watching industry, (4) commercial shipping, sport/commercial fishing, and (5) hunt-related management and law enforcement.

4.6.3.5 Alternative 5

Under Alternative 5, hunting would be expected to occur on a total of 20 days year round. The limit on the number of struck whales would be three and the limit on the number of harvested whales would be two in any one year. Approximately 12 whales would be exposed to harpoon attempts and 60 would be approached annually. Compared to the No-action Alternative, under which there would be no hunting, Alternative 5 is likely to result in (1) minor short-term increases in tourism from the likely 20 days of hunting, (2) an increase of up to 2 whales annually available for household use by Makah tribal members, (3) negligible changes in whale-watching revenues due to changes in whale behavior as a result of interactions between hunters with whales, (4) minor increases in interference with shipping and sport/commercial fishing vessels, and (5) an increase in expenditures for management and law enforcement over the likely 20 days of hunting.

4.6.3.5.1 Tourism

Compared to the No-action Alternative (under which no whale hunts would occur to draw visitors to the project area), the whale hunt and associated activities under Alternative 5 would likely draw visitors to the project area on the days that hunting occurred, potentially creating a minor increase during those days in the level of business activity for tourist-related enterprises nearby. The increased business activity would likely be short term (lasting only as long as the hunt), as visitors would come to observe the hunt and to participate in harvest-related celebrations. Thus potential increases in business activity under Alternative 5 would likely occur on a total of 20 days. Because there would be no limits on the hunting season, hunting would likely occur year round, including during the summer period. Thus inclement weather would not be likely to deter visitors from coming to observe whale hunts. It is uncertain whether a hunt would result in a long-term increase in tourism over current conditions under the No-action Alternative. Publicity about the whale hunt could generate interest in the Makah Reservation as a cultural tourism destination, while some individuals might not visit the project area due to negative publicity about the whale hunt.

Compared to Alternative 2, there would be about the same number of days of hunting under Alternative 5 (20 versus 7 to 30), but they would likely occur during the summer, compared with April and May under Alternative 2. More visitors are likely to come observe a hunt during

summer months, when weather conditions are more favorable. Thus it is likely that more visitors would come to observe the hunts under Alternative 5 than Alternative 2, with an attendant potential minor increase in business activity for tourist-related enterprises.

4.6.3.5.2 Household Use of Whale Products

Compared to the No-action Alternative (under which no whales could be harvested and the Tribe would have access only to drift whales or whales incidentally caught in fishing gear) up to two whales annually could be harvested annually under Alternative 5. No limits would be placed on the harvest of identified whales, and no limits would be placed on the hunting season. Hunting would likely occur year round.

Under Alternative 5 the amount of whale products available for household consumption, manufacturing, and selling of traditional handicrafts would increase over current conditions (the No-action Alternative). The increase would come from whales the Tribe was actually able to harvest, which would likely be two whales annually. The lack of limits on harvest of identified whales and hunting seasons, and the relatively low harvest level, would make it likely the Tribe could harvest the full number allowed.

Compared to Alternatives 2, 3, and 4, the lower number of whales that may be harvested (two per year versus an average of four per year) is likely to result in fewer whale products being available for household consumption and the making and selling of traditional handicraft. The potential increase in income for households that participate in the making and selling of such articles would likewise be lower.

4.6.3.5.3 Whale-watching Industry

Compared to the No-action Alternative (under which no hunts would occur and no whales would be struck, exposed to harpoon attempts, or approached by hunters), under Alternative 5, there may be 20 days of hunting, up to three whales may be struck annually, up to 12 whales may be exposed to unsuccessful harpoon attempts, and up to 60 whales may be approached.

As described above (Section 4.6.2.3, Whale-watching Industry) there is no information to suggest that individuals would avoid whale-watching tours if a Makah hunt were authorized, and it is unlikely that Makah hunting activities would overlap geographically with whale-watching tours. It is also unlikely that gray whales would respond to a Makah tribal hunt by avoiding whale-watching vessels. As described in Section 4.5, Other Wildlife, it is likely that any effects of a hunt on other marine mammals, which might be a target of whale-watching operators, would be localized and temporary. To the extent such an effect might occur under Alternative 5, it is not

possible to estimate the amount of decrease that might occur in revenues or employment associated with whale-watching. Current revenues and employment in whale-watching operations are unknown, and there is no information available or that could be obtained that would allow an estimation of how much revenues might decrease if ENP gray whale behavior were altered by a Makah hunt.

Compared to Alternatives 2, 3, and 4, fewer whales could be harvested (two versus four per year), struck (three versus seven per year), exposed to harpoon attempts (12 versus 28) and approaches (60 versus 140). Therefore, the potential for interactions between hunting and whale-watching, or for whale-hunting to affect whale behavior around whale-watching vessels, is less than under Alternatives 2, 3, or 4.

4.6.3.5.4 Shipping and Ocean Sport/Commercial Fishing

Compared to the No-action Alternative (under which there would be no whale hunts and no activation of the MEZ) activation of the MEZ on 20 days of whale hunting under Alternative 5 would lead to an increased potential for restrictions on the movement of commercial shipping traffic and sport and commercial fisheries. However, the small size and duration of the MEZ would make it likely that restrictions on vessel movement or fishing operations caused by activation of the MEZ would be negligible. Any resulting economic effects on commercial shipping or sport and commercial fishing operations would also likely be negligible. In addition, hunt-related activities would most likely not interfere with commercial shipping traffic because most, if not all, hunting would probably occur within the Coast Guard RNA, which lies almost entirely within the OCNMS area to be avoided (Section 4.13.2.2, Marine Traffic). Consequently, only minor economic impacts to commercial shipping or sport and commercial fisheries would be expected as a result of implementing Alternative 5.

Compared to Alternatives 2 and 4, there would be about the same number of days of hunting (20 versus 7 to 30), likely resulting in about the same number of instances of the MEZ being activated. Thus there would be about the same potential for whale hunting to interfere with commercial shipping or sport and commercial fishing operations under Alternative 5 as under Alternatives 2 and 4. Because hunting would be allowed year round and would likely occur in the summer under Alternative 5, there is greater potential for a given instance of activating the MEZ to interfere with sport salmon fishing. Thus Alternative 5 could have a slightly greater potential to affect sport salmon fishing.

Compared to Alternative 3, Alternative 5 would result in fewer days of hunting (20 versus 40) and fewer instances of the MEZ being activated. Hunting under both alternatives would be allowed year round and would likely occur in the summer so there would not be a difference between the two alternatives for each instance of the MEZ being activated. For these reasons, there would be a lower potential for whale hunting to interfere with commercial shipping or sport and commercial fishing operations under Alternative 5 as under Alternative 3.

4.6.3.5.5 Management and Law Enforcement

Compared to the No-action Alternative (under which no whale-hunting or associated protests would occur) Alternative 5 could result in 20 days of hunting and associated protests. The amount of increase in costs for hunt observers and law enforcement would increase over current conditions by the number of days of hunting. It is uncertain whether the existing photo-identification study would continue to be funded under the No-action Alternative. If not, then its continuation under Alternative 5 would represent an increased cost beyond current conditions.

Under Alternative 5, costs would be incurred for NMFS and Makah observers during the 20 days that hunting occurred, resulting in an increase in costs over current conditions (the No-action Alternative). Estimated costs for a NMFS observer for 20 days could be as high as $42,000 (based on rate of $7,000 per month over a span of six months) (NMFS 2008).

If whale hunting by the Tribe engenders protests by whaling opponents, as it has in the past, there could also be costs associated with law enforcement activities. It is not possible to predict how many of the 20 days of hunting likely under Alternative 5 would require a law enforcement presence, or which governmental entities would provide law enforcement (federal, state, local and tribal). As described under Section 4.6.2.5, Management and Law Enforcement, estimated costs for all non-tribal enforcement agencies could approach $43,000 per day, with overall costs estimated at $1 million (Table 4-3). As with the other alternatives, the bulk of costs would be associated with United States Coast Guard aircraft and vessels (NMFS 2008). Compared to Alternatives 2 and 4, costs for management and law enforcement would be about the same because the number of days of hunting would be about the same (20 days versus 7 to 30). Compared to Alternative 3, costs would be less (approximately half) under Alternative 5 because fewer hunting days are expected (NMFS 2008).

4.6.3.6 Alternative 6

Alternative 6 would include the same provisions as Alternative 3 except that hunting would also be allowed in the Strait of Juan de Fuca portion of the Makah U&A. Alternative 6 would be

expected to result in the same number of hunting days year round as Alternative 3, the same number of whales harvested, struck, exposed to harpoon attempts and approaches, and the same number of instances of the MEZ being activated. Therefore, Alternative 6 has the same potential as Alternative 3 to result in a change in revenue, employment, and/or economic value, relative to the No-action Alternative, associated with (1) tourist-related business activity, (2) household consumption and manufacture and sale of traditional handicrafts, (3) the whale-watching industry, and (4) hunt-related management and law enforcement.

Regarding shipping and fishing, the ability to hunt in the Strait of Juan de Fuca could result in activation of the MEZ in the Strait (although current Coast Guard regulations regarding an MEZ for a Makah gray whale hunt do not extend into the strait). As described in Section 4.6.2.4, Shipping and Ocean Sport/Commercial Fishing, any effects on vessel movements are expected to be negligible. The potential for the MEZ to be activated in the strait under Alternative 6 would not be expected to result in different effects on shipping and fishing activities than would occur under Alternative 3. Therefore, Alternative 4 has the same potential as Alternative 2 to result in a change in revenue, employment, and/or economic value, relative to the No-action Alternative, associated with shipping or fishing.

TABLE 4-3. ESTIMATED COSTS OF ENFORCEMENT-RELATED ACTIVITIES AND RESOURCES

Entity	Unit Cost	No-action Alternative		Alternatives 2 & 4		Alternatives 3 & 6		Alternative 5	
		Freq.	Cost	Freq.	Cost	Freq.	Cost	Freq.	Cost
U.S. Coast Guard	$55,544 per day	*	*	7-30 days	$277,172 - $1,187,880	40 days	$1,583,840	20 days	$791,920
Washington State Patrol	$1,072 per day	*	*	60 days	$64,320	120 days	$128,640	30 days	$32,160
Clallam County Sheriff	$1,640 per day	*	*	60 days	$98,400	120 days	$196,800	30 days	$49,200
NMFS Enforcement (Variable)	$680 per day	*	*	7-60 days	$4,760 - 20,400	56 days	$38,080	28 days	$19,040
NMFS Enforcement (Fixed) & Compliance Monitoring	$9,790 per month	*	*	2 months	$19,580	6 months	$58,740	6 months	$58,740
NMFS Gray Whale Monitoring	$65,000 per year	*	*	Annual	$65,000	Annual	$65,000	Annual	$65,000
Total Costs		*		**$529,232 - $1,455,580**		**$2,071,100**		**$1,016,060**	

Freq. = Frequency * Assumes no change from existing costs.

4.7 Environmental Justice

4.7.1 Introduction

Executive Order 12898, *Environmental Justice*, requires that federal agencies "identify and address the . . . disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." Based on assessment of the demographic data presented in Section 3.7, Environmental Justice, and preliminary analysis of the type and location of effects potentially resulting from the proposed action, the potential population of concern for this environmental justice analysis consists of members of the Makah Tribe, which is a Native American population. As described in Section 3.7, Environmental Justice, this is a low-income, as well as a minority, population.

4.7.2 Evaluation Criteria

The EPA Office of Civil Rights and Environmental Justice developed guidance for all federal agencies conducting environmental justice analyses. This environmental justice analysis follows the EPA guidelines, which offer a range of categories to indicate the presence or absence of environmental justice effects (EPA 1998).This evaluation draws topically from the range of indicator categories EPA (1998) outlined. These categories correspond to effects described in Section 4.6, Economics, Section 4.8, Social Environment, and Section 4.10, Ceremonial and Subsistence Resources, of this EIS. The EPA environmental justice guidelines also indicate that impacts on human health should be considered in environmental justice analyses. As discussed in Section 4.16, Human Health, available information is insufficient to assess the potential of any of the alternatives to affect human health, either positively or negatively.

Analyses in this section also do not address the potential for the alternatives to affect the safety of Makah tribal members because environmental justice contemplates impacts imposed on minority and low-income populations by a federal agency. The proposed action is based on the Tribe's MMPA waiver request and the other action alternatives include variations on the restrictions identified in the Tribe's request. Risks associated with whale hunting would be undertaken voluntarily by the Tribe. The safety of hunt participants and others is addressed in Section 4.15, Public Safety. Authorization of a whale hunt under the action alternatives would likely result in some level of whale hunting activity by Makah tribal members, increasing the potential for hunt-related injury above the current level of injury under the No-action Alternative.

This analysis was based on a qualitative assessment of adverse effects that would result from the proposed alternatives for each of the three resource areas evaluated. A determination of an

environmental justice impact would occur if these adverse effects were to have a disproportionate effect on the environmental justice population of concern. A disproportionately high and adverse effect on minority and low-income populations means an adverse effect that (1) is predominantly borne by a minority population and/or a low-income population; or (2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non low-income population.

4.7.3 Evaluation of Alternatives

The following sections compare the potential for the alternatives to affect economic conditions in the project area. For each alternative, the discussion addresses the potential economic; ceremonial and subsistence resources; social environment; and human health effects on the Makah Tribe and other low-income or minority populations.

Business activity at tourist-related enterprises in Neah Bay generates jobs and income for tribal members (Section 3.6.3.2.4, Contribution of Tourism to the Local Economy). As described in Section 4.6.2.1, Tourism, whale hunts may create short-term increases in tourist-related business activity during a whale hunt. A whale hunt may also create an opportunity over the long term for the Tribe to attract visitors to Neah Bay who are interested in observing traditional cultural activities. On the other hand, hunting could also lead to boycott attempts by whale-hunting opponents, which could reduce the number of visitors to Neah Bay. If, on balance, the absence of a whale hunt resulted in less tourism-related business activity in Neah Bay (compared to under the action alternatives), a disproportionate share of the adverse economic effects might fall on the Makah Tribe.

Potential short-term increases in business activity for tourist-related enterprises on the Makah Reservation would likely be lower under Alternatives 2 and 4 compared to Alternatives 3 and 6 because hunting would be limited to winter periods under Alternatives 2 and 4, when visits to the Olympic Peninsula by tourists are relatively lower. Potential tourism benefits to the Tribe under Alternative 5 would probably be lower than under Alternatives 3 and 6, because there would likely be fewer days of hunting (20 versus 40). Potential tourism benefits to the Tribe under Alternative 5 would probably be slightly higher than under Alternatives 2 and 4, because the number of days of hunting would be about the same (20 versus 7 to 30), but hunting days would likely occur during a period of better weather and greater tourist activity. Regarding the Tribe's

ability to attract more visitors over the longer term because of a hunt, all of the action alternatives are likely to have an equal effect, compared to the No-action Alternative.

Under the No-action Alternative, no freshly harvested whale products would be available to Makah households. The quantity of whale products available to Makah households for consumption and making and selling handicraft articles would be limited to drift whales or whales taken incidentally in fisheries. A disproportionate share of these adverse effects would fall upon the Makah Tribe, which would have been the primary users of such products. Lack of such product would make largely unavailable a traditional subsistence resource for household members and the Makah community as a whole.

The potential for edible and non-edible whale products to become available would probably be lower under Alternatives 2 and 4 than Alternatives 3 and 6 because weather and other logistical considerations related to the timing of the hunt might constrain the Tribe's ability to reach the full limit on the number of whales allowed for harvested in any given year. The potential for whale products to become available under Alternative 5 would be lower under the other Alternatives because of the lower limit on the number of whales that may be harvested.

Under the No-action Alternative, subsistence and cultural activities related to whale hunting (e.g., preparation, hunting, butchering, sharing, consuming, dancing, singing, and rituals) would be more limited than under the action alternatives. A disproportionate share of the adverse effects on subsistence uses, traditional knowledge and activities, spiritual connection to whale hunting, and cultural identity would fall upon the Makah Tribe. The Makah's stated need for the whale hunt is to allow the Tribe to exercise its treaty whale hunting rights to provide a traditional subsistence resource to the community and to sustain and revitalize the ceremonial, cultural, and social aspects of its whale hunting traditions. Alternatives 2, 4, and 5 would have the positive ceremonial and subsistence effects associated with a resumption of Makah whale hunting, but would restrict whale hunting in various ways that might make these benefits lower than under Alternatives 3 and 6.

Under the No-action Alternative, the benefits to the social environment (for example, community cohesion) that the Makah Tribe attributes to whale hunting would not be realized, potentially increasing social tension within the Makah Tribe. To the extent they occurred, these adverse social impacts would be borne predominantly by Makah Tribe members. Other treaty tribes could view NMFS' action under the No-action Alternative as a breach of faith by the United States government in upholding treaty rights, depending on the reasons for the denial of the request.

Any social tension created by this perception would not fall equally on all populations, but would predominantly be borne by Native Americans. Under any of the action alternatives, the social benefits that the Makah Tribe attributes to whale hunting would be realized; however, whale hunts would also probably exacerbate the social tensions between Tribe members who do and those who do not support the hunt. There is insufficient information to determine whether the potential social benefits to the Makah Tribe would offset the potential adverse social effects. Consequently, it is not possible to determine if the action alternatives would result in disproportionately high and adverse social effects on the Makah Tribe. Under any of the action alternatives, official recognition that traditional activities such as whale hunting are culturally valuable, despite their controversial nature, could be reassuring to Native Americans in general.

4.7.3.1 Alternative 1

4.7.3.1.1 Economics

Under the No-action Alternative, no whale hunt would be permitted, and there would be no short-term increases in business activity as visitors come to Neah Bay to view hunt-related activities or to participate in harvest-related celebrations. In addition, there be no potential for media coverage of the whale hunt to generate interest in the Makah Reservation as a cultural tourism destination. As a result, this alternative might limit the long-term opportunities for the Makah to expand the tribal tourism sector of the reservation economy. On the other hand, under the No-action Alternative it is unlikely there would be attempts to boycott Neah Bay because of whale hunting. If, on balance, the absence of a whale hunt under the No-action Alternative resulted in less tourism-related business activity in Neah Bay (compared to under the action alternatives), a disproportionate share of these adverse effects might fall on the Makah Tribe.

With the possible exception of products from drift whales or whales incidentally caught in fisheries, there would be no potential for households to consume whale meat and blubber or use non-edible whale products for the manufacture and sale of traditional handicrafts. The potential for households to gain additional income from making and selling traditional handicrafts would not be realized. As noted in Section 3.7.3.3.3, Makah Tribe, Native Americans living on the Makah Reservation have substantially lower incomes and experience higher poverty rates than residents throughout Clallam County. The adverse impact of this unrealized household income would be borne predominantly by Makah households. The Makah households would principally use the whale products to provide a traditional subsistence resource to household members and the wider Makah community and to derive income from the manufacture and sale of traditional native handicrafts.

4.7.3.1.2 Ceremonial and Subsistence Resources

Under the No-action Alternative, some subsistence and cultural activities related to whale hunting (e.g., preparation, hunting, butchering, sharing, consuming, dancing, singing, and rituals) would not be expected to occur. A disproportionate share of the adverse effects on subsistence uses, traditional knowledge and activities, and spiritual connection to whale hunting, and cultural identity would fall upon the Makah Tribe. The Makah's stated need for the whale hunt is to allow the Tribe to exercise treaty whale hunting rights to provide a traditional subsistence resource to the community and to sustain and revitalize the ceremonial, cultural, and social aspects of its whale hunting traditions.

4.7.3.1.3 Social Environment

Under the No-action Alternative, the benefits to the social environment (for example, community cohesion) that the Makah Tribe attributes to whale hunting would not be realized, potentially increasing social tension within the Makah Tribe. To the extent that they would occur, these adverse social impacts would be borne predominantly by members of the Makah Tribe.

The No-action Alternative could also create social tensions between the Makah Tribe and other social groups, or between Native Americans generally and other social groups. The social tension created by this perception would not fall equally on all populations, but would predominantly be borne by Native American populations.

4.7.3.2 Alternative 2

4.7.3.2.1 Economics

In comparison to the No-action Alternative, there could be a minor increase in the level of business activities of tourist-related enterprises in and around the project area. Over the longer term, the Tribe would have opportunities to bolster the tribal tourism sector of the reservation economy, as media stories would increase public awareness of the Makah whale hunt and the Tribe's whale hunting tradition. Boycott attempts, however, could reduce any long term benefits from tourism.

Compared to the No-action Alternative, the potential for whale products to become available to Makah households for consumption and the making and selling of handicraft articles would increase as a result of the resumption of Makah whale hunting. The increased potential for whale products to become available for household consumption and the making and selling of traditional handicraft articles would have a beneficial effect on Makah households.

4.7.3.2.2 Ceremonial and Subsistence and Resources

In contrast to the No-action Alternative, Alternative 2 would have multiple positive ceremonial and subsistence effects on the Makah Tribe associated with a resumption of whale hunting. Alternative 2, like the other action alternatives, would be consistent with the Makah's stated need for the whale hunt, which is to allow the Tribe to exercise its treaty whale hunting rights to provide a traditional subsistence resource to the community and to sustain and revitalize the ceremonial, cultural, and social aspects of its whale hunting traditions.

4.7.3.2.3 Social Environment

In contrast to the No-action Alternative, the benefits to the social environment (for example, increased increase social bonding within the Makah Tribe) that the Tribe attributes to whale hunting would be realized. However, social tensions exist between tribal members who support the hunt and those who do not. Whale hunts under Alternative 2 would probably exacerbate these tensions. There is insufficient information to determine whether the potential social benefits to the Makah Tribe would offset the potential adverse social effects. Consequently, it is impossible to determine if Alternative 2 would result in disproportionately high and adverse social effects.

Alternative 2 would make it possible for the Tribe to carry on traditional whale hunting that is sanctioned by the IWC. In contrast to the No-action Alternative, official recognition that traditional activities such as whale hunting are culturally valuable, despite their controversial nature, would likely be reassuring to Native Americans in general.

4.7.3.3 Alternative 3

4.7.3.3.1 Economics

In comparison to the No-action Alternative, there could be a minor increase in the level of business activities of tourist-related enterprises in and around the project area. Over the longer term, the Tribe would have opportunities to bolster the tribal tourism sector of the reservation economy, as media stories would increase public awareness of the Makah whale hunt and the Tribe's whale hunting tradition. Boycott attempts, however, could reduce any long term benefits from tourism.

Compared to the No-action Alternative, the potential for whale products to become available to Makah households for consumption and the making and selling of handicraft articles would increase as a result of the resumption of Makah whale hunting. The increased potential for whale products to become available for household consumption and the making and selling of traditional handicraft articles would have a beneficial effect on Makah households.

Compared to Alternative 2, Alternative 3 would afford more days of hunting (40 versus 7-30) on which there could be increased business activity caused by an influx of visitors. The ability to hunt year round and the lack of limits on identified whales would make it more likely the Tribe could harvest the full number of whales under Alternative 3, thus more whale products would be available for consumption and the production of handicrafts.

4.7.3.3.2 Ceremonial and Subsistence Resources

In contrast to the No-action Alternative, Alternative 3 would have multiple positive ceremonial and subsistence effects on the Makah Tribe associated with a resumption of whale hunting. Alternative 3, like the other action alternatives, would be consistent with the Makah's stated need for the whale hunt, which is to allow the Tribe to exercise its treaty whale hunting rights to provide a traditional subsistence resource to the community and to sustain and revitalize the ceremonial, cultural, and social aspects of its whale hunting traditions.

Compared to Alternative 2, the ability to hunt year round would increase the opportunities for hunting whales and for resident participation. Consequently, the positive ceremonial and subsistence effects that the Makah would experience as a result of a resumption of whale hunting would be greater under Alternative 3 than under Alternative 2. Alternative 3, like the other action alternatives, would be consistent with the Makah's stated need for the whale hunt.

4.7.3.3.3 Social Environment

In contrast to the No-action Alternative, the benefits to the social environment (for example, increased increase social bonding within the Makah Tribe) that the Tribe attributes to whale hunting would be realized. However, social tensions exist between tribal members who support the hunt and those who do not. Whale hunts under Alternative 3 would probably exacerbate these tensions. There is insufficient information to determine whether the potential social benefits to the Makah Tribe would offset the potential adverse social effects. Consequently, it is impossible to determine if Alternative 3 would result in disproportionately high and adverse social effects.

Alternative 3 would make it possible for the Tribe to carry on traditional whale hunting that is sanctioned by the IWC. In contrast to the No-action Alternative, official recognition that traditional activities such as whale hunting are culturally valuable, despite their controversial nature, would likely be reassuring to Native Americans in general.

The amount of social benefit the Makah Tribe experiences under Alternative 3 would probably be the same as under Alternative 2.

4.7.3.4 Alternative 4

Alternative 4 would include the same limits on the number of whales harvested as Alternative 2 and would impose the same restrictions on the hunting season. The additional restrictions contained in Alternative 4 (no hunting within 200 yards of rocks and islands in the Washington Islands National Wildlife Refuges) would not be expected to influence the number of days of hunting or the number of whales struck or harvested. Therefore, Alternative 4 has the same potential as Alternative 2 to result in a change in the economic circumstances, ceremonial and subsistence resources, or social environment of the Makah Tribe.

4.7.3.5 Alternative 5

4.7.3.5.1 Economics

In comparison to the No-action Alternative, there could be a minor increase in the level of business activities of tourist-related enterprises in and around the project area. Over the longer term, the Tribe would have opportunities to bolster the tribal tourism sector of the reservation economy, as media stories would increase public awareness of the Makah whale hunt and the Tribe's whale hunting tradition. Boycott attempts, however, could reduce any long term benefits from tourism.

Compared to the No-action Alternative, the potential for whale products to become available to Makah households for consumption and the making and selling of handicraft articles would increase as a result of the resumption of Makah whale hunting. The increased potential for whale products to become available for household consumption and the making and selling of traditional handicraft articles would have a beneficial effect on Makah households.

Compared to Alternatives 2 and 4, Alternative 5 would afford about the same number of days hunting (20 versus 7 to 30) on which there could be increased business activity caused by an influx of visitors. The lower limits on harvest whales (three versus five) would result in fewer whale products being available for Makah households. Compared to Alternative 3, Alternative 5 would afford fewer days of hunting (20 versus 40) and therefore fewer days of increased business activity.

4.7.3.5.2 Ceremonial and Subsistence Resources

In contrast to the No-action Alternative, Alternative 5 would have multiple positive ceremonial and subsistence effects on the Makah Tribe associated with a resumption of whale hunting. Alternative 3, like the other action alternatives, would be consistent with the Makah's stated need for the whale hunt, which is to allow the Tribe to exercise its treaty whale hunting rights to

provide a traditional subsistence resource to the community and to sustain and revitalize the ceremonial, cultural, and social aspects of its whale hunting traditions.

Compared to Alternatives 2 and 4, the number of days of hunting would be about the same (20 versus 7 to 30), but the ability to hunt year round could increase the opportunities for hunting whales and for resident participation. Consequently, the positive ceremonial and subsistence effects that the Makah would experience as a result of a resumption of whale hunting could be greater than under Alternatives 2 and 4. Compared to Alternative 3, Alternative 5 would afford fewer days of hunting (20 versus 40) and therefore potentially fewer opportunities for resident participation and less subsistence/cultural satisfaction.

4.7.3.5.3 Social Environment

In contrast to the No-action Alternative, the benefits to the social environment (for example, increased increase social bonding within the Makah Tribe) that the Tribe attributes to whale hunting would be realized. However, social tensions exist between tribal members who support the hunt and those who do not. Whale hunts under Alternative 5 would probably exacerbate these tensions. There is insufficient information to determine whether the potential social benefits to the Makah Tribe would offset the potential adverse social effects. Consequently, it is impossible to determine if Alternative 5 would result in disproportionately high and adverse social effects.

Alternative 3 would make it possible for the Tribe to carry on traditional whale hunting that is sanctioned by the IWC. In contrast to the No-action Alternative, official recognition that traditional activities such as whale hunting are culturally valuable, despite their controversial nature, would likely be reassuring to Native Americans in general.

The amount of social benefit the Makah Tribe experiences under Alternative 5 would probably be the same as under Alternatives 2, 3, and 4.

4.7.3.6 Alternative 6

Alternative 6 would include the same provisions as Alternative 3 except that hunting would also be allowed in the Strait of Juan de Fuca portion of the Makah U&A. Alternative 6 would be expected to result in the same number of hunting days year round as Alternative 3 and the same number of whales harvested. Therefore, Alternative 6 has the same potential as Alternative 3 to result in a change in the economic circumstances, ceremonial and subsistence resources, or social environment of the Makah Tribe.

4.8 Social Environment

4.8.1 Introduction

This section addresses the potential for the alternatives to affect the social environment of the Makah Tribe, other tribes, and the general public. As described in Section 3.8, Social Environment, various groups and individuals either oppose or support the Makah whale hunt. Makah tribal members and other tribes generally support the hunt, while feelings among the general public are more mixed. Many adamantly oppose the hunt. NMFS' denial of a whale hunt under the No-action Alternative could create tension on the part of the Makah and other Indian tribes toward whale hunting opponents and the federal government, depending on the reasons for a denial. Conversely, a decision to authorize a whale hunt, and subsequent hunting, could lead to tensions on the part of whale hunting opponents towards the Makah and other Indian tribes and the federal government. Regardless of the decision, like-minded groups could experience moments of increased social bonding.

4.8.2 Evaluation Criteria

Any of the alternatives could affect relationships and interactions among members of the Makah Tribe, other tribes, and the general public. These effects would be expressed to varying degrees as social tension or social bonding, depending on the feelings of individual group members about whale hunting. The criteria for determining the potential effects of the alternatives on the social environment are primarily qualitative, based on the anticipated magnitude and duration of changes in social tensions or social bonding. The amount and content of media coverage might intensify protests and local social tensions. The following three sections describe how social interactions within and among the three interest groups identified in Section 3.8, Social Environment, might be affected under the alternatives.

4.8.2.1 Makah Tribal Members

As noted in Section 3.10.3.5.1, Makah Whaling, the 1999 whale hunt appeared to bolster social accord within the Makah community. Participants in the hunt reported enduring intense physical and spiritual training, which culminated in a deep bond between whalers (Section 3.10.3.5, Contemporary Makah Society). More broadly, most tribal members believe that restoration of whale hunting improved social and cultural conditions on the reservation (Section 3.8.3.1, Makah tribal members). Based on these experiences, as well as the potential benefits associated with reinforcing cultural identity (Section 4.10, Ceremonial and Subsistence Resources), whale hunts under the action alternatives could increase social bonding within the Tribe. Conversely, a

decision to deny the Tribe's request to hunt whales could lead to feelings of resentment toward the federal government by those tribal members who support the hunt, depending on the reason for the denial (Section 4.10.3.1, Ceremonial and Subsistence Resources – Alternative 1).

A whale hunt might also generate social tension between tribal members who support the hunt and those who do not. Whale hunts under the action alternatives would probably exacerbate tensions, which might be expressed as vocal dissent and public or private criticism of tribal members who speak out against the hunt.

Under the action alternatives, tension would also increase between tribal members who support the hunt and individuals or group members (including some members of other tribes) who oppose the hunt. As mentioned in Section 3.8.3.1, Makah Tribal Members, tribal members have expressed frustration with protesters and others who oppose the hunt, and some engaged in physical conflicts with protesters during the previous hunts.

4.8.2.2 Other Tribes

Many native organizations have expressed support for Makah whale hunting. In addition, some members of other regional tribes have stated the importance of solidarity with the Makah (Section 3.8.3.2, Other Tribes). Following the successful hunt in 1999, members of other tribes attended a community potlatch hosted by the Makah, witnessing the proceedings and sharing food. Whale hunts under the action alternatives would probably increase social bonding between the Makah and other native groups in the region, the United States, and worldwide. At the same time, members of other tribes might be subject to anti-whaling and anti-Indian sentiments expressed by whaling opponents. Similar to the Makah, other tribes might respond to the No-action Alternative with reinforced feelings of disillusionment with the federal government.

4.8.2.3 Other Individuals and Organizations

Section 3.8.3.3, Other Individuals and Organizations, describes the range of attitudes about Makah whale hunting held by people locally, statewide, nationally, and internationally, as well as people affiliated with various organizations. Those expressing support for the Makah gray whale hunt have mentioned treaty rights, the relative health of the gray whale population, and the cultural meaning ascribed to whaling by the Makah. Opponents of the hunt have commented on the beauty, intelligence, and community structure of whales, the existence value of gray whales (collectively and individually), the pain individual whales experience if struck or killed in a hunt, and the possibility that the local economy might be impacted by a boycott in response to a whale

hunt. Organizations that oppose whaling in general include animal-rights and marine conservation organizations, the whale-watching industry, and anti-treaty constituents.

Based on the experience of previous hunts, whale hunting under the action alternatives would inspire a wide range of feelings among persons and groups who oppose the hunt, including sorrow, frustration, and anger (Section 3.8.3.3, Other Individuals and Organizations). These feelings would be based in the concerns listed above, among others. Experience from the hunts and hunt exercises in 1998, 1999, and 2000 indicates that the resulting tensions might be expressed through demonstrations, attempts to interfere with hunt activities, or other forms of protest. These expressions might be directed at Makah tribal members, other tribes, and other individuals and organization members who have expressed support for the Makah whale hunt. Several incidents involving violent or near-violent confrontations between hunt opponents and tribal members occurred before and during the previous hunts (Section 3.8.3.3, Other Individuals and Organizations). Other expressions of tension that followed the successful 1999 hunt included death threats and anti-whaling messages delivered to tribal members and the Coast Guard, as well as incidents of Makah tribal members being refused service in area businesses. Some expressions of social tension directed at the Makah are founded in racism and anti-Indian sentiment, as well as resentment over the previous whale hunts. Such expressions would likely continue under all of the alternatives, including the No-action Alternative.

A whale hunt could also increase social bonding among whaling opponents, through a sense of shared adversity and a common cause. Under the No-action Alternative, hunt opponents might bond by celebrating a decision not to issue a permit. Similarly, supporters of the Makah gray whale hunt may bond through celebration under the action alternatives and through shared frustration under the No-action Alternative.

4.8.3 Evaluation of Alternatives

The following sections consider the potential for the alternatives to affect the social environment of the Makah Tribe, other tribes, and the general public. Under the action alternatives, each hunt attempt would probably result in protests and media coverage, with the associated effects described above, under Section 4.8.2, Evaluation Criteria. Most protest activities and vocal opposition to the hunt have come from groups that have expressed opposition to whale hunting under any conditions. For example, the website of one of the most active protest organizations states, “Whales should not be slaughtered anytime or anywhere by any people. These are socially complex, intelligent mammals whose numbers worldwide have been diminished severely” (Sea

Shepherd Conservation Society 2007). It is possible that restrictions on the total number of whales harvested, or on the number of identified whales harvested, would reduce the amount and intensity of opposition to a hunt. There is information that would allow a prediction of the difference in social tensions under alternatives that would place limits on harvest of identified whales versus those that would not. This analysis therefore treats the potential type and magnitude of effects on the social environment as depending on whether hunting occurs, the number of hunting expeditions, and the amount and content of associated media coverage. Alternatives that include more hunting expeditions would provide opportunities for more expression of social tension among those with opposing viewpoints the hunt, as well as added opportunities for increased bonding among persons sharing similar viewpoints.

As noted in Section 3.8.3.3, Other Individuals and Organizations, many people who watch whales in the project area on a regular basis attach existence values to individual whales that have been identified through photo-identification studies. It is possible that these people may express greater opposition to alternatives that do not include limits on the number of photo-identified whales (Alternatives 3, 5, and 6), compared to alternatives that do (Alternatives 2 and 4).

The lowest risk of adverse effects on the social environment would occur under the No-action Alternative, because no whale hunts would be permitted and there would be fewer occasions for confrontation between supporters and opponents of whale hunting compared to any of the action alternatives. Under all of the action alternatives, whale hunts would result in episodes of increased social tension between hunt supporters and opponents. Each hunt would be expected to result in increased tension as well as increased opportunities for social bonding between like-minded observers, compared to the No-action Alternative. The number of occasions that social tensions would likely exceed conditions under the No-action Alternative would likely correspond to the number of days that hunting would occur under each alternative. As discussed in Section 4.1, Introduction, Alternatives 2 and 4 would likely result in 7 to 30 days of hunting, Alternative 5 would likely result in 20 days of hunting, and Alternatives 3 and 6 would likely result in as many as 40 days (Table 4-1). Among the action alternatives, therefore, Alternatives 2 and 4 would have the lowest risk of adverse effects on the social environment, Alternative 5 would have a moderate risk, and Alternatives 3 and 6 would have the greatest risk, based on the number of occasions of elevated tension due to whale hunting.

The alternative with the lowest potential of providing benefits to Makah tribal members through social bonding would be the No-action Alternative. Any of the action alternatives would provide some potential for benefits to tribal members through social bonding.

4.8.3.1 Alternative 1

Under the No-action Alternative, no whale hunt would be permitted, and no whale hunting or associated activities (e.g., ceremonies, celebrations, protests, law enforcement) would be anticipated. Individuals and organizations who oppose the Makah gray whale hunt would not engage in demonstrations, attempts to interfere with hunt activities, or other forms of protest. There would, therefore, be no potential for episodes of increased social tensions associated with a whale hunt. Supporters of the Makah whale hunt might bond through a sense of shared adversity and a common cause, and hunt opponents (including some Makah tribal members) might bond by celebrating a decision not to authorize a hunt. Similarly, social bonding and other potential social benefits described above and in Chapter 3 would not be realized under the No-action Alternative. Renker (2007) cited observations of a connection between unhealthy social behaviors and the inability to practice traditional rituals. Such behaviors could become more common among Makah tribal members. In addition, the Makah and other tribes might feel continued tension toward hunt opponents and the federal government, due in part to anger over a perceived lack of respect for tribal traditions and treaty rights.

4.8.3.2 Alternative 2

Any whale hunts that occurred under Alternative 2 would result in increased tension between hunt supporters and opponents, compared to the No-action Alternative. As described under 4.8.3, Evaluation Criteria, the potential type and magnitude of effects on the social environment would likely be affected by the number of hunting expeditions. As described in Section 4.1, Introduction, there would likely be 7 to 30 days of hunting per year under Alternative 2. The degree of tension expressed by some hunt opponents might also be affected by the number of identified whales that could be killed. Alternative 2 would likely result in about one identified whales being killed each year.

Supporters and opponents would be drawn from all three of the interest groups (i.e., Makah tribal members, other tribes, and other individuals and organizations) described above and in Section 3.8.3, Existing Conditions. The reactions of individual members of interest groups would be determined primarily by each person's set of values and beliefs. Members of specific organizations, which are generally made up of people who share similar values and beliefs, would

likely express similar reactions. Members of local communities and Indian tribes (including the Makah) would be more likely to differ from one another, because those groups are based on cultural, geographical, or familial ties instead of particular belief systems.

Individuals and organizations who oppose the Makah gray whale hunt may engage in demonstrations, attempts to interfere with hunt activities, or other forms of protest. Some tribal members or other hunt supporters may engage in confrontations with protesters. Social tensions might be expressed as described above or in other ways.

4.8.3.3 Alternative 3

Any whale hunts that occurred under Alternative 3 would result in increased tension between hunt supporters and opponents, compared to the No-action Alternative. As described under Section 4.8.2, Evaluation Criteria, the potential type and magnitude of effects on the social environment would likely be affected by the number of hunting expeditions. As described in Section 4.1, Introduction, there would likely be 40 days of hunting per year under Alternative 3. This would create more opportunities for the expression of social tension than under Alternative 2, and more opportunities relative to the No-action Alternative. The degree of tension expressed by some hunt opponents might also be affected by the number of identified whales that could be killed. Alternative 3 could result in as many as seven identified whales being killed each year, which is seven times as many as would be likely under Alternative 2. Thus there would be a greater potential for social tension regarding killing identified whales than under Alternative 2, and greater potential relative to the No-action Alternative.

The types of reactions and social tensions would be similar to those described under Alternative 2 and in Section 4.8.2, Evaluation Criteria, but would likely occur with greater frequency under Alternative 3 because of the increased number of days of hunting. The social tensions also might be more intense because of the lack of limits on harvesting identified whales.

4.8.3.4 Alternative 4

Alternative 4 would likely result in the same number of days of hunting and the same harvest of identified whales as Alternative 2. Therefore, effects on the social environment under this alternative would be similar to those under Alternative 2, and the comparison to the No-action Alternative would be similar.

4.8.3.5 Alternative 5

Any whale hunts that occurred under Alternative 5 would result in increased tension between hunt supporters and opponents, compared to the No-action Alternative. As described under

Section 4.8.2, Evaluation Criteria, the potential type and magnitude of effects on the social environment would likely be affected by the number of hunting expeditions. As described in Section 4.1, Introduction, there would likely be 20 days of hunting per year under Alternative 5. This would create about the same number of opportunities for the expression of social tension as under Alternatives 2 and 4, fewer opportunities relative to Alternative 3, and more opportunities relative to the No-action Alternative. The degree of tension expressed by some hunt opponents might also be affected by the number of identified whales that could be killed. Alternative 5 could result in as many as three identified whales being killed each year, which is three times as many as would be likely under Alternative 2, but less than half as many as would be possible under Alternative 3. Thus there would be a greater potential for social tension regarding killing identified whales than under Alternative 2, a lesser potential relative to Alternative 3, and greater potential relative to the No-action Alternative.

4.8.3.6 Alternative 6

Alternative 6 would likely result in the same number of days of hunting and the same harvest of identified whales as Alternative 3. Therefore, effects on the social environment under this alternative would be similar to those under Alternative 3, and the comparison to the No-action Alternative would be similar.

4.9 Cultural Resources

This section addresses the potential for the alternatives to affect cultural resources in the project area, including historic sites, archaeological sites, and traditional cultural properties. The analysis considers the potential for whale hunting or related activities to affect physical sites with cultural significance. Ways in which hunt-related activities could affect cultural sites include physical damage from towing a whale to shore, or trampling of sensitive sites by persons observing or participating in a hunt or related activities. Potential effects on cultural practices and the cultural identity of the Makah Tribe are addressed in Section 4.10, Ceremonial and Subsistence Resources.

Three historic sites listed on the National Register of Historic Places occur in the waters or shoreline of the Makah U&A (Section 3.9.3.1, National Historical Register Sites). These are Quimper's Landing, Tatoosh Island, and the Wedding Rock Petroglyphs. Under the No-action Alternative, the potential for adverse effects on these sites would not differ from the potential under current conditions. There is a low risk of intentional or unintentional damage or disturbance by recreational users or other people in the areas where these sites occur.

It is improbable that any of these historic sites would be affected by activities directly related to harvesting a whale (such as towing the whale to shore, butchering, and transporting whale products from the landing site) under any of the action alternatives. Quimper's Landing is in the northeast waters/shore of Neah Bay and would not be affected by towing a whale to shore or landing it at Front Beach, which is at the opposite side of the bay. At Tatoosh Island, logistical challenges related to the transport of people, equipment, and butchered whale products make it unlikely that any whales would be landed at that site. In addition, the Tatoosh Island lighthouse is geographically separate from the rocky shore. Moreover, the island is owned by the Tribe and was traditionally used for landing whales, so few (if any) non-tribal onlookers would be present at the landing site and landing a whale there would be in keeping with Makah cultural tradition. The beach where the Wedding Rock Petroglyphs occur is a remote, off-reservation location that lacks vehicle access, making it an unlikely site for landing whales.

The potential for listed historic sites to be damaged by hunt observers or onlookers is also low. The only site where this could occur is the Wedding Rock Petroglyphs, because Quimper's Landing is in the water and access to Tatoosh Island is restricted by the Makah Tribe. Although it is unlikely that a whale would be landed at the beach where the Wedding Rock Petroglyphs are found, interested parties at certain vantage points along the access trail could view some hunt activities on the water. It is possible that persons viewing a whale hunt might accidentally tread or encroach upon an existing archaeological or historic site. Because many activities associated with whale hunting would occur in marine locations not visible from the shoreline, the possibility of such accidental harm to this site is remote. Any damage to the Wedding Rocks Petroglyphs from shore-based visitors would likely be unrelated to any whale-hunting activities.

Unlisted sites, such as the shell midden sites along eroding beach terraces in the Olympic National Park, are also unlikely to be affected for the reasons described above. Makah whalers would be most likely to choose a beach on reservation lands for landing a whale, to facilitate access for butchering and celebrations. Moreover, any whale that is landed and butchered would be close to the water's edge and not as far upland as the midden sites.

Many unlisted sacred sites on the Makah Reservation were traditionally used by Makah whalers and their families to prepare for whale hunting. Some ceremonial use of these sites would likely occur under the No-action Alternative, but the use would not necessarily be related to whale hunting. Under the action alternatives, the cultural value of these sacred sites would be enhanced by their use for whale hunting-related ceremonies. As noted in Section 3.9.3.3, Other Culturally

Important Sites, the only traditional cultural property identified for this analysis is First Beach. Under the No-action Alternative, this site would not be used for any practices directly related to whale hunting. Use of this site for butchering whales under the action alternatives would be consistent with its traditional use by the Makah.

4.10 Ceremonial and Subsistence Resources

4.10.1 Introduction

This section addresses the potential for the alternatives to affect the Makah Tribe's efforts to revive ceremonial and subsistence practices associated with hunting and using whales, which in turn affect Makah culture. The Makah Tribe has a long history of hunting whales (Section 3.10.3.4, Makah Historic Whaling), as well as culturally significant treaty language reserving the right to hunt whales. Despite a more than 70-year hiatus in hunting whales before the 1999 and 2000 hunts, the Makah have maintained a close cultural and ceremonial association to this traditional activity. Makah ceremonial and subsistence practices associated with whale hunting undertaken by some members include preparation for the hunt, the hunt itself, processing and distribution of the products, and consumption of products from the hunt (Section 3.10.3.5.1, Makah Whaling). Also important is the satisfaction many tribal members derive from harvesting, preparing, sharing and eating traditional food; practicing traditional activities and applying and transmitting traditional knowledge; participating in ceremonial practices and spiritual connections associated with whales and whale hunting; and reinforcing cultural identity associated with the whale hunt and related activities (Section 3.10.3.5.1, Makah Whaling).

Persons whose ceremonial and subsistence practices could be affected by the alternatives include residents of the Makah Reservation, members of the Tribe who live elsewhere, nearby treaty tribes, and more widespread indigenous people. Makah tribal members who live off the reservation could be affected because strong kinship and cultural ties extend beyond the reservation's boundaries. Non-Makah tribes and other indigenous people could be affected due to the close social and cultural ties among indigenous people (Section 3.8.3.2, Other Tribes).

Potential effects of the alternatives on archaeological resources associated with whale hunting are addressed in Section 4.9, Cultural Resources. Potential effects on the exercise of ceremonial and subsistence practices of indigenous people worldwide (by influencing the behavior of other countries toward indigenous people within their borders) are addressed in Section 4.17, National and International Regulatory Environment.

4.10.2 Evaluation Criteria

Several criteria were used to determine the potential effects of the alternatives on the Tribe's the ceremonial and subsistence practices related to whale hunting and the subsistence use of whales. They can be grouped into four categories: (1) subsistence use, (2) traditional knowledge and activities, (3) spiritual connection to whale hunting, and (4) cultural identity. The following four sections describe these categories in greater detail, and subsequent sections discuss the effects of each alternative on these aspects of ceremonial and subsistence practices. All of the alternatives have the potential to affect the Tribe's ceremonial and subsistence practices and Makah culture (Braund et al. 2007).

4.10.2.1 Subsistence Use

Subsistence use includes, among other things, harvesting, processing, sharing and consuming foods. The ability to use a customary resource for subsistence depends on the availability of and access to that resource in traditional harvest locations. The resource must be available in sufficient numbers and of adequate health to allow a locally satisfactory harvest. A satisfactory harvest, in turn, would allow the subsistence community to participate in related activities. Access to resources can be affected by roads or trails that enhance access, by physical barriers (such as demonstrators who block access), by regulatory barriers, or by social barriers (such as an influx of recreational boaters into an area, displacing traditional users or resources). Traditional subsistence users of a resource may derive satisfaction from harvesting, processing, sharing, and consuming traditional foods. These activities reinforce traditional knowledge through use, exchange of knowledge, and training in traditional ways of performing subsistence activities (Section 3.10.3.5.2, Makah Subsistence Consumption).

Under any of the alternatives, the extent to which the Tribe can engage in subsistence use of whales would depend on the ability to hunt, the timing and area of the hunt, and the number of whales that could be harvested.

4.10.2.2 Traditional Knowledge and Activities

Surviving on locally available resources requires an intimate understanding of the environment based on a long-term relationship with the surrounding land, water, and resources. This knowledge comes from continued interaction with and observation of the surrounding environment and resources through subsistence activities as well as through oral tradition passed down from elders to other community members, and shared by active community residents. Individuals who carry and transfer this knowledge are generally those with a long history of

participation in subsistence activities. The more a culturally important activity is practiced, the more likely it is that knowledge of that activity will pass from generation to generation. This valuable knowledge is not simply given away. Instead, community members who perform culturally important activities relay the knowledge, and younger participants earn the right to help as they learn from their elders. In some cases, only a limited number of people know specific skills (e.g., a harpooner) (Section 3.10.3.5.1, Makah Whaling).

If there is a hiatus in practicing the activity, the knowledge may be lost. It may take a long time, but eventually knowledge of specific elements of the activity wanes as elders die, especially if the cultural activities are not actively practiced. Maintaining traditional and cultural knowledge regarding whale hunting requires active participation in whale hunting (Section 3.10.3.4.1, Cessation of the Hunt).

Along with the knowledge of an activity, there are specific indigenous words (vocabulary) used to describe the activity, preparation for the activity, the hunting equipment, the weather and elements, the food, and ways to prepare the food, comprising a seemingly endless and detailed list. Participation in the traditional activity results in more use of indigenous words and language to describe the activity; this, in turn, results in increased cultural awareness and more people and communities identifying themselves with their indigenous culture (cultural identity through shared language). In time, knowledge, activity, and transmission from generation to generation become part of an oral tradition (Section 3.10.3.5.1, Makah Whaling).

Under any of the alternatives, the number of traditional activities tribal members can practice and the number of times they can practice them, as well as the amount of traditional knowledge tribal members can apply and transmit, would depend on the number of opportunities to hunt and harvest whales and the number of whales available for the Tribe to use. The number of opportunities to hunt, and the number of whales available, would depend on the timing and area of the hunt and on the number of whales that could be harvested.

4.10.2.3 Spiritual Connection to Whale hunting

Makah whale hunting rituals, spiritual and physical training, songs, dances, and ceremonial activities are well documented historically and in association with the 1999 and 2000 whale hunts (Section 3.10.3.4, Makah Historic Whaling, and Section 3.10.3.5.1, Makah Whaling). Whale hunts increase participation in ceremonial activities and rituals related to whale hunting. Similarly, the spiritual connection to whale hunting is strengthened as participants prepare for and conduct the whale hunt and then share the proceeds of the harvest. Makah whale hunting

reinforces the relationship between the Makah and the whales. Makah tribal lore indicates that when the hunters and family prepare for the hunt and conduct it properly, perform the appropriate rituals, and live the culturally correct way, the whale gives itself to the Makah.

The amount of spiritual connection that tribal members have to whale hunting would depend primarily on the ability to hunt. The extent of that opportunity could also affect tribal members' spiritual connection to whale hunting. The extent of the opportunity to hunt would depend on the timing and area of the hunt and on the number of whales that could be harvested.

4.10.2.4 Cultural Identity

Under current conditions, the cultural identity of Makah tribal members is expressed in a variety of ways, including fishing, singing, dancing, potlatching, making traditional handicraft articles, and using the Makah language. Section 3.10.3.5, Contemporary Makah Society, describes the various activities available to tribal members to experience and strengthen their cultural identity. The Makah tribal and cultural identity associated with whale hunting in particular is well documented (Section 3.10.3.5.3, Symbolic Expression of Whaling). Actively hunting whales enhances the community's connection to its whale hunting history and reinforces the sense of connection to the local marine environment and to ancestors who used the resource in the past. Other measures of cultural identity associated with whale hunting include the following:

- Use of the whale as a cultural symbol
- Pride in whale hunting traditions
- Traditional values of pride, self esteem, responsibility, and identification with the past
- Local perceptions of community cultural identity with whale hunting
- Tribal identity
- A sense of the community cooperatively working together toward the common cultural goal of preparing to hunt, harvesting, processing, distributing, and eating the product of their communal labor
- A sense of autonomy

The amount of cultural identity associated with whale hunting would depend primarily on the ability to hunt. The extent of the opportunity to hunt could also affect the amount of cultural identity derived from whale hunting. The extent of the opportunity to hunt would in turn depend on the timing and area of the hunt and on the number of whales that could be harvested.

4.10.3 Evaluation of Alternatives

The following sections compare the potential for the alternatives to affect Makah ceremonial and subsistence practices. For each alternative, the analysis considers its effect on ceremonial and subsistence practices, including subsistence uses, traditional knowledge and activities, spiritual connection to whale hunting, and cultural identity that would result from a decision by the federal government to permit or deny the Makah Tribe's request to hunt whales. For those alternatives that would allow hunting, the analysis also considers the effect of hunting regulations on the same set of ceremonial and subsistence practices.

The No-action Alternative carries the greatest risk of adverse effects on the Makah Tribe's ceremonial and subsistence practices associated with whale hunting. This is because under the No-action Alternative, no whale hunting would be allowed so these practices either could not occur or would be restricted. In contrast, Alternatives 2 through 6 would all allow the Makah to hunt whales, with variations in season, area, and harvest limits. Having an opportunity to hunt whales would enable the Tribe to engage more frequently in a greater range of ceremonial and subsistence practices, compared to current conditions under the No-action Alternative. The amount of increase could be affected by regulations on hunting. Possible regulations include limits on the timing and area that a hunt would be allowed, and on the number of whales that could be struck and harvested, including limits on identified whales. Alternative 6, with the least amount of regulation on hunting, has the greatest potential to benefit the Tribe's ceremonial and subsistence practices associated with hunting whales.

In the following discussions of Alternatives 2 through 6, the degree of change from the current condition (No-action Alternative), and the comparison to other alternatives, is included in the summary of effects section.

4.10.3.1 Alternative 1

Under the No-action Alternative, no whale hunt would be permitted. Gray whales would continue to be available in that they are abundant in traditional harvest areas, but the Makah would not have access to hunt them. Tribal members could engage in some activities associated with whale hunting, such as performing ceremonies and rituals; building whale-hunting canoes; or processing, sharing and consuming drift whales or whales incidentally caught in fisheries. Only four whales have been reported entangled in nets in the past 15 to 20 years, and the Tribe used only one such whale in 1995 (Section 2.4.2, Subsistence Use of Drift Whales). Moreover, many of these permitted activities have limited cultural value if they are not practiced in connection

with actual whale hunts. Many other activities associated with the actual hunt would not be permitted and could not occur, such as approaching, striking, killing and towing whales to shore.

Under the No-action Alternative, transfer of knowledge related to whale hunting would be limited to discussions of past whale hunting, and revitalized culture bearers who would participate in whale hunting would not be forthcoming. There would be no language and vocabulary growth related to whale-hunting activities, and the oral tradition of whale hunting would focus on historic activities and would not include ongoing participation in this culturally central activity.

Under current conditions, the opportunity for tribal members to experience a spiritual connection to whale hunting is limited to a connection with past whale hunting. Whale hunting songs and dances would likely remain within whale hunting families, but the 70-year hiatus would resume and there would be little reason or opportunity to perform and share them with the larger community. Without any whale hunting activity, the spiritual connection to whale hunting may eventually wane, and young Makah tribal members would lack any active whaler role models living what the Makah consider a culturally proper life that they could respect, admire, and emulate. The community connection to whale hunting would remain a connection to the past without any present reinforcement based on active participation in whale hunting activities.

Although the amount of whale hunting activity and associated cultural use of whales would not differ from current levels, tribal identity could erode in the absence of opportunities to participate in an activity central to Makah cultural identity. The community would have little or no opportunity or incentive to work cooperatively to prepare for the hunt; to harvest, butcher, share, and eat whale; or to participate in song and dance festivals celebrating a successful harvest. Individual and community pride associated with conducting these activities would not occur, and self-esteem could decline among those Makah tribal members (88.8 percent) (Renker 2007) who believe the Tribe should continue to hunt whales.

In addition, because contemporary Makah cultural identity includes the 150-year-old treaty right to hunt whales, this alternative would continue to reinforce the sense that the Makah are not in control of their destiny, and it would undermine a sense of autonomy within the community. For Makah who believe strongly in their cultural heritage and treaty rights, this alternative would reinforce their feeling of disillusionment with the federal government.

4.10.3.2 Alternative 2

Under Alternative 2, the Tribe may strike up to seven whales per year, harvest four whales on average per year (with a maximum of five in any one year) and strike and lose three whales per

year. Hunting is limited to the period from December 1 through May 1, in the coastal portion of the Makah U&A. Limits would be imposed on the harvest of identified whales. Section 4.1, Introduction, describes the number of days of hunting likely to occur under Alternative 2, and the reasons for expecting that it may be difficult for the Tribe to harvest the full limit of whales allowed under this Alternative. The first part of this analysis describes some of the practical effects of the hunting conditions imposed by Alternative 2, and the Makah's perceptions and expectations regarding these conditions. The second part of the analysis considers the potential effect of implementing Alternative 2 on the Makah's subsistence use of whales; practice of traditional activities and application and transmission of traditional knowledge; spiritual connection to whaling; and cultural identity.

4.10.3.2.1 Limits on Whale Hunting

Hunt Timing

Under Alternative 2, the Makah Tribe has proposed to limit hunting to the period from December 1 through May 31. The period December 1 through May 31 is characterized by inclement weather that would likely limit the number of times the Makah could engage in a hunt to approximately 7 to 30 days per year. Whale hunting traditionally occurred year-round, whenever whales were present, and there was a need for them Braund et al. (2007). Historically, the hunting season for gray whales began in March, when they appeared in numbers off Tatoosh Island on their coastal migration north, and resumed in November during their migration south. Pods of humpback and grays may have remained in the area all summer (Huelsbeck 1994), permitting whale hunting to occur from early spring through the fall (Section 3.10.3.4, Makah Historic Whaling). Some tribal members view summer and fall as the best times to hunt whales because they are migrating south and weather conditions are ideal (Braund et al. 2007).

By allowing hunting only during the winter and spring months, when severe weather would be a frequent occurrence, Alternative 2 would likely limit the number of hunting days to 7 to 30 days. This in turn could make it difficult to harvest the four whales annually allowed under Alternative 2. In addition, tribal members would not have the latitude to harvest whales at opportune times, such as when whales are available or when hunters are prepared.

Hunting Area

Restricting whale hunts to the portions of the U&A west of the Bonilla-Tatoosh line would keep the Makah from hunting whales in the Strait of Juan de Fuca. Historically, Makah whaled both in the ocean and in the Strait, depending on weather, wind, and the presence of whales. Disallowing

whale hunts in the Strait would eliminate a large area from hunter access. It would also reduce opportunities to kill a whale close to the community. A greater distance between the site of a whale kill and the location of the landing beach would mean a greater distance over which the whale carcass would have to be towed, with a greater chance of the meat spoiling. Enforcing this restriction would also eliminate a traditional whale-hunting territory.

Some Makah tribal members believe that excluding the Strait of Juan de Fuca from their hunting area would place whalers at increased risk, would prohibit them from whale hunting where their ancestors had traditionally whaled, and would affect their ability to successfully take a whale (Braund et al. 2007). The Makah traditionally hunted in the Strait, where boating conditions are safer because the weather is calm, compared to the ocean, which can have 25-foot waves (Braund et al. 2007). The restriction on location would contrast with traditional hunting, which occurred when and where the whales presented themselves, including in the Strait (Braund et al. 2007).

By allowing hunting only in the coastal portion of the Makah U&A, combined with restrictions on hunt timing, Alternative 2 would likely limit the number of hunting days to 7 to 30 days. This in turn could make it difficult to harvest the four whales annually allowed under Alternative 2. In addition, tribal members would not have the latitude to harvest whales at opportune locations, such as when whales are available in the Strait or weather conditions are more favorable.

Strike and Harvest Limits

Because the Makah have harvested only one whale in the last seven-plus years (the 1999 harvest), there are few current whale harvest data upon which to assess the effect of the size of the harvest in terms of meeting Makah needs. However, as described in Section 3.10.3.5.2, Makah Subsistence Consumption, the Makah do rely on subsistence foods for a significant portion of their diet and emphasize marine resources. Furthermore, the 2001 tribal survey found that 81 percent of the respondents consumed whale products (blubber, meat, or oil) obtained from the 1999 hunt, and 87 percent would like to have these products available in the future (Renker 2002 in Section 3.10, Ceremonial and Subsistence Resources). According to Renker's 2006 household survey (Renker 2007), 71.7 percent of survey respondents wanted whale meat in the households on a regular basis, and 67.1 percent wanted whale oil.

Sepez (2001) calculated that the Makah households received an estimated 2.4 pounds of whale meat (.55 pounds) and blubber (1.8 pounds) per capita from the 1999 whale hunt. Makah members have commented that the one whale was not adequate to feed the entire community (Braund et al. 2007). It was not large enough to go around as a meaningful source of food.

According to Sepez's (2001) analysis (Section 3.10.3.5.1, Makah Whaling), the 1999 whale harvested by the Makah yielded approximately "2,000 to 3,000 pounds of meat and 4,000 to 5,000 pounds of blubber, most of which was consumed at the community potlatch."

This information indicates that there is a high demand for whale products, and one whale would not likely meet that need. It is uncertain whether four whales annually would meet contemporary Makah needs. The primary indication they would is the fact that the Makah have requested an average of four whales annually (i.e., approximately one whale per year per Makah village) (Renker 2007). If the Tribe had the opportunity to strike seven whales, harvest four, and strike and lose three annually, that would provide substantial opportunity to the Makah to prepare for, hunt, process, share, and participate in ceremonial activities associated with whale hunting. Under Alternative 2, limits on timing and area of the hunt along with limits on the number of identified whales that may be harvested from the PCFA survey area, would make it difficult for the Makah to harvest the full quota. Thus the number of whales the Makah could actually hunt and harvest under Alternative 2 may in practice be somewhat fewer than the average annual limit of four allowed under Alternative 2.

4.10.3.2.2 Opportunity to Resume Whale Hunting

Subsistence use

Under Alternative 2, the opportunity to resume hunting and harvesting whales would increase the Makah Tribe's ability to engage in a broad range of subsistence practices that are currently not possible or are severely limited. Under Alternative 2 the Makah could hunt for gray whales, a traditional marine resource, from December 1 through May 31 in the coastal portion of their U&A, using many of their traditional methods. It is reasonable to expect that the hunt timing would allow 7 to 30 days of hunting per year. The Tribe could harvest as many as four whales per year, and the Makah community could process, share, and consume this traditional food.

Under Alternative 2, the amount of the Tribe's subsistence use would thus increase from no opportunity to hunt under current conditions to an opportunity to hunt in the coastal portion of the Tribe's U&A for 7 to 30 days, from December 1 through May 31. The amount of subsistence use of whales would also increase by four harvested whales per year compared to the current potential use of perhaps one whale every five years under the No-action Alternative. Under Alternative 2, with its limited hunting season, it may be difficult for the Tribe to harvest the full limit of four whales on average per year. On the other hand, the hunting season under Alternative 2 occurs during the whales' southward migration when, according to some tribal members, the

whales are fatter and would thus provide more products for ceremonial and subsistence use than whales harvested during the fall northward migration or early in the summer feeding period (which begins June 1).

The amount of satisfaction the Tribe would derive from this increased subsistence use of whales would also likely increase compared to current conditions. The Tribe's needs statement indicated that 67.1 percent of surveyed households would like whale oil on a regular basis, 71.7 percent would like whale meat on a regular basis, and 47.4 percent would like whale blubber on a regular basis (Renker 2007).

Traditional Knowledge and Activities

As described above, under current conditions tribal members may engage in some, but not all, of the traditional activities associated with subsistence use of whales. The ability to actively hunt whales, which is prohibited under current conditions, would be allowed under Alternative 2, increasing the number of traditional activities that tribal members could practice. Specifically, tribal members could search for and find whales and strike, harvest, and tow whales to shore. The number of times tribal members could participate in searching for and finding whales would increase compared to the No-action Alternative by approximately 7 to 30 days per year, from December 1 through May 31. The number of times they could participate in striking, harvesting, and towing whales to shore would increase by up to seven whales struck per year and four whales harvested per year on average. The increase in the number of times these activities are performed would also increase the amount of traditional knowledge associated with the activities, and the opportunities to apply and transmit that knowledge.

In addition to permitting some currently-prohibited activities, thus increasing the number of traditional activities that could be practiced, implementation of Alternative 2 could increase the number of times tribal members engage in activities that are not currently prohibited. Specifically, tribal members are not currently prevented from building large whale-hunting canoes or fabricating and maintaining whale-hunting equipment, but there is little practical reason for them to do so. If a whale hunt were authorized under Alternative 2, there would likely be an increase in the number of times that tribal members practice these activities.

Similarly, tribal members are not currently prohibited from processing and consuming whale products from drift whales, but the opportunity to do so is limited. The number of times tribal members could participate in processing whales would increase from the current potential of perhaps one whale every five years to four whales per year. The amount of whale products tribal

members could share and consume would similarly increase from one whale every five years to four whales per year, although limits on hunt timing and harvest of identified whales might make it difficult for tribal members to harvest the full limit.

Under Alternative 2 tribal members would again actively practice the skills necessary to build large whale-hunting canoes; fabricate and maintain whale hunting-equipment; search for and find whales; strike, harvest, and tow whales to shore; butcher and distribute them; and perform ceremonial songs and dances to celebrate successful hunts. As a result, words and vocabulary related to preparing to hunt, hunting, harvesting, towing, and processing whales, as well as sharing, preparing, and consuming whale products, could become more widely used than they currently are (Braund et al. 2007). Makah cultural awareness, both inside and outside of the Tribe, would become more pronounced, and the whale-hunting component of the Makah oral tradition would grow.

In contrast to the No-action Alternative, Alternative 2 would enable new generations to participate in whale hunting activities; develop, apply and transmit knowledge of whale hunting; and learn and use words related to whale hunting. Makah youth would have active whalers as role models. With a resumption of whale hunting,

Spiritual Connection to Whale Hunting

Under Alternative 2, the ability to resume whale hunting could increase the Makah's spiritual connection to whale hunting over the current connection, as whale-hunting activity could resume and recur year after year. This is because the connection would be current and ongoing, rather than a connection to a past activity that can no longer be pursued (Braund et al. 2007).

Cultural Identity

As described above and in Section 3.10.3.5, Contemporary Makah Society, Makah tribal members currently have a variety of ways to express and reinforce their cultural identity. Also as described above and in Sections 3.10.3.4, Makah Historic Whaling, and 3.10.3.5.3, Symbolic Expression of Whaling, whale hunting was a culturally central activity in historic Makah society and the Tribe's whale-hunting past remains culturally important. Under Alternative 2, Makah whale-hunting rituals, spiritual training, songs, dances, and ceremonial activities would likely increase over current conditions, and regularly recur, reinforcing Makah cultural identity. The opportunity under Alternative 2 to regularly harvest, process, share, and consume whale products could lead to increased communal activities and an increase in tribal members' sense of community. The whale hunting ceremonies that whalers and family members would follow for

the hunt could provide the Makah with an additional social framework, which could contribute to community social and spiritual stability.

4.10.3.3 Alternative 3

Under Alternative 3, the Tribe could strike up to seven whales per year, harvest four whales on average per year (with a maximum of five in any one year) and strike and lose three whales per year. Hunting would be allowed year round in the coastal portion of the Makah U&A and no limits would be imposed on the harvest of identified whales. Section 4.1, Introduction, describes the number of days of hunting likely to occur under Alternative 2, and the reasons for expecting the Tribe would be able to harvest the full limit of whales allowed under this Alternative. The first part of this analysis describes some of the practical effects of the hunting conditions imposed by Alternative 3, and the Makah's perceptions and expectations regarding these conditions. The second part of the analysis considers the potential effect of implementing Alternative 3 on the Makah's subsistence use of whales; practice of traditional activities and application and transmission of traditional knowledge; spiritual connection to whaling; and cultural identity.

4.10.3.3.1 Limits on Whale Hunting

Hunt Timing

Hunting year round under Alternative 3 would enable Makah tribal members to hunt at the most opportune time, based on sea and weather conditions, presence and availability of whales, subsistence need, and preparedness of hunters. This year-round season would also allow hunters to harvest whales on both their northward spring migration, as well as the migration south. Whales would probably be harvested during late spring, summer, and early autumn, when weather conditions would be less likely to interfere with hunting opportunities and to compromise hunter safety. Because of the year-round opportunity to hunt, including during seasons of relatively calm weather, the Makah could hunt as many days as necessary to allow harvest of the quota of four whales per year. As described in Section 4.1, Introduction, based on the 10 days of hunting required to harvest one whale in 1999, this analysis uses 40 days as a reasonable estimate of the number of days of hunting that would occur under Alternative 3.

If there were no restrictions Makah members generally indicated that they would hunt during the spring and fall whale migrations, as well as during the summer (Braund et al. 2007). Several Makah indicated that the whales are fatter in the fall on their migration south. One individual reported this, as well as stating a preference for hunting during the spring, observing that summer tourism and fall weather conditions could interfere with whale hunting during those times. By

allowing hunting year round, Alternative 3 provides the ability to harvest whales at the most opportune times for the whalers.

Hunting Area

Under Alternative 3, the hunting area would be limited to the coastal portion of the Makah U&A and exclude the Strait of Juan de Fuca. This would limit the flexibility of tribal members to hunt in the Strait when weather conditions there are more favorable. Because of the opportunity to hunt year round, however, the limitation on hunting area would likely not limit the number of days the Tribe could hunt or the number of whales the Tribe could harvest. By limiting hunting to the coastal portion of the Makah U&A, Alternative 3 precludes the ability of tribal members to hunt in their entire U&A and to harvest whales in areas that may be close to butchering sites. It also limits the flexibility of tribal members to hunt in the most opportune locations.

Strike and Harvest Limits

Strike and harvest limits would be the same under Alternative 3 as under Alternative 2. As described under Alternative 2, above, there is a high demand for whale products, and it is uncertain whether four whales annually would meet contemporary Makah needs. The primary indication they would is the fact that the Makah have requested four whales annually (Renker 2007). If the Tribe had the opportunity to strike seven whales, harvest four, and strike and lose three annually, that would provide substantial opportunity to the Makah to prepare for, hunt, process, share, and participate in ceremonial activities associated with whale hunting. The ability to hunt year round under Alternative 3, along with the lack of limits on harvesting identified whales, would make it likely that the Makah could harvest the full quota.

4.10.3.3.2 Opportunity to Resume Whale Hunting

Subsistence Use

Under Alternative 3, the opportunity to resume hunting and harvesting whales would increase the Makah Tribe's ability to engage in a broad range of subsistence practices that are currently not possible or are severely limited. Under Alternative 3 the Makah could hunt for gray whales, a traditional marine resource, year round in the coastal portion of their U&A, using many of their traditional methods. The hunt timing would likely allow hunting on as many days as required to harvest the number of whales allowed, which would most likely be 40 days of hunting per year. The Tribe could harvest as many as four whales per year, and the Makah community could process, share, and consume this traditional food.

Under Alternative 3, the amount of the Tribe's subsistence use would thus increase from no opportunity to hunt under current conditions to an opportunity to hunt in the coastal portion of the Tribe's U&A for 40 days year round. The amount of subsistence use of whales would also increase by four harvested whales per year compared to the current potential use of perhaps one whale every five years under the No-action Alternative. Because hunting would be allowed year round, it is likely the Tribe could harvest the full number of whales allowed. Moreover, the lack of limits on the hunting season would allow the subsistence use of fresh whale products year round.

Compared to Alternative 2, the Tribe's subsistence use of whales would be greater because year-round hunting would allow for more days of hunting during better weather conditions, making it more likely the Tribe could harvest the full number of whales allowed. Lack of limits on identified whales would also make it more likely tribal members could harvest the full number.

Traditional Knowledge and Activities

As described above, under current conditions tribal members may engage in some, but not all, of the traditional activities associated with subsistence use of whales. The ability to actively hunt whales, which is prohibited under current conditions, would be allowed under Alternative 3, increasing the number of traditional activities that tribal members could practice. Specifically, tribal members could search for and find whales and strike, harvest, and tow whales to shore. The number of times tribal members could participate in searching for and finding whales would increase compared to the No-action Alternative by approximately 40 days per year, year round. The number of times they could participate in striking, harvesting, and towing whales to shore would increase by up to seven whales struck per year and four whales harvested per year on average. The increase in the number of times these activities are performed would also increase the amount of traditional knowledge associated with the activities, and the opportunities to apply and transmit that knowledge.

In addition to permitting some currently-prohibited activities, thus increasing the number of traditional activities that could be practiced, implementation of Alternative 3 would likely increase the number of times tribal members engage in activities that are not currently prohibited. Specifically, tribal members are not currently prevented from building large whale-hunting canoes or fabricating and maintaining whale-hunting equipment, but there is little practical reason for them to do so. If a whale hunt were authorized under Alternative 3, there would likely be an increase in the number of times that tribal members practice these activities.

Similarly, tribal members are not currently prohibited from processing and consuming whale products from drift whales, but the opportunity to do so is limited. The number of times tribal members could participate in processing whales would increase from the current potential of perhaps one whale every five years to four whales per year. The amount of whale products tribal members could share and consume would similarly increase from one whale every five years to four whales per year.

Under Alternative 3 tribal members would again actively practice the skills necessary to build large whale hunting-canoes; fabricate and maintain whale-hunting equipment; search for and find whales; strike, harvest, and tow whales to shore; butcher and distribute them; and perform ceremonial songs and dances to celebrate successful hunts. As a result, words and vocabulary related to preparing to hunt, hunting, harvesting, towing, and processing whales, as well as sharing, preparing, and consuming whale products, would likely become more widely used than they currently are.

In contrast to the No-action Alternative, Alternative 3 would enable new generations to participate in whale hunting activities; develop, apply and transmit knowledge of whale hunting; and learn and use words related to whale hunting. Makah youth would have active whalers as role models. With a resumption of whale hunting, Under Alternative 3 the amount of satisfaction the Tribe might derive from the practice of traditional activities and the application of traditional knowledge, would increase beyond the current level.

Compared to Alternative 2, Alternative 3 is likely to result in a greater number of occasions on which tribal members can engage in traditional activities and apply traditional knowledge (40 days of hunting versus 7 to 30). It is also more likely the Tribe could harvest (and thus process) the full number of whales allowed. Thus Alternative 3 is likely to result in more occasions on which tribal members can practice traditional activities and apply traditional knowledge than Alternative 2.

Spiritual Connection to Whaling

Under Alternative 3, the ability to resume whale hunting would likely increase the Makah's spiritual connection to whale hunting over current conditions, as described under Alternative 2.

Cultural Identity

Under Alternative 3, the ability to resume whale hunting would likely increase the cultural identity of the Makah over current conditions, as described under Alternative 2.

4.10.3.4 Alternative 4

Alternative 4 contains most of the same regulations on whale hunting as Alternative 2. Under Alternative 4, the Tribe may strike up to seven whales per year, harvest four whales on average per year (with a maximum of five in any one year) and strike and lose three whales per year. Hunting would be limited to December 1 through May 31 in the coastal portion of the Makah U&A and limits would be imposed on the harvest of identified whales. Alternative 4 contains the additional restrictions that no hunting may occur within 200 yards of rocks and islands in the Washington Islands National Wildlife Refuges. This added restriction may affect the Tribe's perceived or actual ability to harvest the full number of whales allowed. Section 4.1, Introduction, describes the number of days of hunting likely to occur under Alternative 4, and the reasons for expecting that it may be difficult for the Tribe to harvest the full limit of whales allowed under this Alternative. The first part of this analysis describes some of the practical effects of the hunting conditions imposed by Alternative 4, and the Makah's perceptions and expectations regarding these conditions. The second part of the analysis considers the potential effect of implementing Alternative 4 on the Makah's subsistence use of whales; practice of traditional activities and application and transmission of traditional knowledge; spiritual connection to whaling; and cultural identity.

4.10.3.4.1 Limits on Whale Hunting

Hunt Timing

Hunt timing would be the same under Alternative 4 as under Alternative 2, with the same practical effects and tribal perceptions and expectations.

Hunting Area

Hunting only in the ocean (excluding the Strait of Juan de Fuca) would have the same effects as Alternative 2. The additional restriction under Alternative 4 of not hunting within 200 yards of rocks and islands would further restrict Makah hunters' opportunity to hunt. These areas are traditional hunting grounds (Braund et al. 2007). Additionally areas near rocks and islands are shallower and, thus, are better locations for striking whales (Braund et al. 2007).

By prohibiting hunting in a portion of the Makah U&A (the Strait of Juan de Fuca) that is often protected from severe weather, Alternative 4 could reduce the number of hunts that take place and possibly the number of whales that might be harvested, compared to alternatives that lack such restrictions. The additional restriction on hunting near certain rocks and islands would further hinder whale hunting. These restrictions would interfere with the Makah's exercise of ceremonial

and subsistence practices, but to a lesser degree than the No-action Alternative, under which no whale hunting would be allowed.

Strike and Harvest Limits

The strike and harvest limits under Alternative 4, and the limit on the harvest of identified whales, would be the same as under Alternative 2, with the same practical effects and tribal perceptions and expectations.

4.10.3.4.2 Opportunity to Resume Whale Hunting

Subsistence use

Under Alternative 4, the opportunity to resume hunting and harvesting whales would increase the Makah Tribe's ability to engage in a broad range of subsistence practices that are currently not possible or are severely limited. Under Alternative 4 the Makah could hunt for gray whales, a traditional marine resource, from December 1 through May 31 in the coastal portion of their U&A, and outside 200 yards of rocks and islands, using many of their traditional methods. The hunt timing would most likely allow 7 to 30 days of hunting per year. The Tribe could harvest as many as four whales per year, and the Makah community could process, share, and consume this traditional food.

Under Alternative 4, the amount of the Tribe's subsistence use would thus increase from no opportunity to hunt under current conditions to an opportunity to hunt in the coastal portion of the Tribe's U&A for 7 to 30 days, from December 1 through May 31. The amount of subsistence use of whales would also increase by four harvested whales per year compared to the current potential use of perhaps one whale every five years under the No-action Alternative. Under Alternative 4, with its limited hunting season and prohibition on hunting within 200 yards of rocks and islands, it may be difficult for the Tribe to harvest the full limit of four whales on average per year. On the other hand, the hunting season under Alternative 4 occurs during the whales' southward migration when, according to some tribal members, the whales are fatter and would thus provide more products for ceremonial and subsistence use than whales harvested during the fall northward migration or early in the summer feeding period (which begins June 1).

The amount of satisfaction the Tribe would derive from this increased subsistence use of whales would also likely increase over current conditions, in the ways described under Alternative 2, although possibly to a lesser extent because of the prohibition against hunting around rocks and islands.

Compared to Alternative 2, Alternative 4 could result in a somewhat lower chance that the Tribe would be able to harvest the full amount of whales allowed per year. If that happened, then Alternative 4 would represent less of an increase in subsistence use of whales over current conditions.

Compared to Alternative 3, which does not include limits on hunt timing or prohibitions against hunting around rocks and islands, Alternative 4 is likely to result in a lower chance that the Tribe would be able to harvest the full amount of whales allowed per year. In addition, the restrictions on hunt timing under Alternative 2 would result in fewer hunting days than under Alternative 3. Alternative 4 is thus likely to result in a smaller increase in the subsistence use of whales, compared to current conditions, than would Alternative 3.

Traditional Knowledge and Activities

Under Alternative 4, the increase in traditional knowledge and activities over current conditions would likely be the same as under Alternative 2 because the hunting conditions are substantially the same under the two alternatives, with the exception of the prohibition on hunting within 200 yards of rocks and islands under Alternative 4. This prohibition would not likely change the number of days of hunting as under Alternative 2 (7 to 30). Therefore, compared to the current condition, the increase in traditional knowledge and activities associated with active hunting for whales would be about the same under Alternative 4 as under Alternative 2, with the possible exception of processing, sharing and consuming whale products.

Under Alternative 4, the number of times tribal members could participate in processing whales would increase from the current potential of perhaps one whale every five years to four whales per year. The amount of whale products tribal members could share and consume would similarly increase from one whale every five years to four whales per year, although limits on hunt timing and harvest of identified whales, and on hunting near rocks and islands, might make it difficult for tribal members to harvest the full limit. Under Alternative 4, other aspects of traditional knowledge and activities would likely increase over current conditions to the same extent as under Alternative 2.

Compared to Alternative 3, which does not include limits on hunt timing, or prohibitions against hunting around rocks and islands, Alternative 4 is likely to result in fewer days of hunting and a lower chance that the Tribe would be able to harvest the full amount of whales allowed per year. Alternative 4 is thus likely to result in a smaller increase in the subsistence use of whales, compared to current conditions, than would Alternative 3.

Spiritual Connection to Whaling

Under Alternative 4, the ability to resume whale hunting would likely increase the Makah's spiritual connection to whale hunting over current conditions, as described under Alternative 2.

Cultural Identity

Under Alternative 4, the ability to resume whale hunting would likely increase the cultural identity of the Makah over current conditions, as described under Alternative 2.

4.10.3.5 Alternative 5

Under Alternative 5, the Tribe may strike up to three whales per year, harvest two whales per year and strike and lose three whales per year. Hunting may occur year round in the coastal portion of the Makah U&A and no limits would be imposed on the harvest of identified whales. Section 4.1, Introduction, describes the number of days of hunting likely to occur under Alternative 5, and the reasons for expecting that it is likely the Tribe could harvest the full limit of two whales per year. The first part of this analysis describes some of the practical effects of the hunting conditions imposed by Alternative 2, and the Makah's perceptions and expectations regarding these conditions. The second part of the analysis considers the potential effect of implementing Alternative 5 on the Makah's subsistence use of whales; practice of traditional activities and application and transmission of traditional knowledge; spiritual connection to whaling; and cultural identity.

4.10.3.5.1 Limits on Whale Hunting

Hunt Timing

Alternative 5 would allow year-round hunting, similar to Alternative 3. The practical effect of a year-round hunting season, and tribal perceptions and expectations regarding the hunting season, would therefore be the same under Alternative 5 as under Alternative 3.

Hunting Area

The hunting area under Alternative 5 would be the coastal portion of the Makah U&A, similar to Alternatives 2 and 3. The practical effect of a year-round hunting season, and tribal perceptions and expectations regarding the hunting season, would therefore be the same under Alternative 5 as under Alternative 3.

Strike and Harvest Limits

Two whales annually would represent 50 percent of the Makah request of four whales. The 1999 whale provided approximately 2.4 pounds of meat and blubber per capita, "most of which was consumed at the community potlatch" (Section 3.10, Ceremonial and Subsistence Resources).

The Makah household whale hunting surveys conducted in 2001 and 2006 documented that most Makah residents expressed a continued desire for whale products. According to 2001 household survey results, "87 percent surveyed desired whale meat as part of their regular diet, and 72 percent voiced a desire for whale oil" (Section 3.10, Ceremonial and Subsistence Resources). Five years later, during the 2006 survey, 80.3 percent of respondents reported that they continued to desire whale products (Section 3.10, Ceremonial and Subsistence Resources). In addition, Sepez (2001) reported that 73 percent of the surveyed households planned to eat whale obtained from future hunts (Section 3.10, Ceremonial and Subsistence Resources). Renker (2007) reported that Makah tribal members numbered 2,389 persons, with 1,228 of those living on the reservation. Whale products would be shared with Makah living in and outside of Neah Bay. With the high percentage of Makah residents desiring whale products for consumption and use, limiting the number of whales harvested to two would likely not satisfy the Makah's need for whale products; would result in fewer opportunities to hunt, process, share and consume whales; and would not adequately facilitate participation in whale-hunting activities by Makah residents (Braund et al. 2007).

4.10.3.5.2 Opportunity to Resume Whale Hunting

Subsistence Use

Under Alternative 5, the opportunity to resume hunting and harvesting whales would increase the Makah Tribe's ability to engage in a broad range of subsistence practices that are currently not possible or are severely limited. Under Alternative 5 the Makah could hunt for gray whales, a traditional marine resource, year round in the coastal portion of their U&A, using many of their traditional methods. The hunt timing would most likely allow 20 days of hunting per year. The Tribe could harvest as many as two whales per year, and the Makah community could process, share, and consume this traditional food.

Under Alternative 5, the amount of the Tribe's subsistence use would thus increase from no opportunity to hunt under current conditions to an opportunity to hunt in the coastal portion of the Tribe's U&A for 20 days year round. The amount of subsistence use of whales would also increase by up to two harvested whales per year compared to the current potential use of perhaps one whale every five years under the No-action Alternative.

The amount of satisfaction the Tribe would derive from this increased subsistence use of whales would also likely increase over current conditions, but as indicated above is not perceived by tribal members as adequate to meet the Tribe's needs. The Tribe's needs statement indicated that

67.1 percent of surveyed households would like whale oil on a regular basis, 71.7 percent would like whale meat on a regular basis, and 47.4 percent would like whale blubber on a regular basis (Renker 2007:22).

Compared to Alternatives 2, 3, and 4, which would allow the subsistence use of four whales per year, Alternative 5 would result in less subsistence use (two whales).

Traditional Knowledge and Activities

As described above, under current conditions tribal members may engage in some, but not all, of the traditional activities associated with subsistence use of whales. The ability to actively hunt whales, which is prohibited under current conditions, would be allowed under Alternative 5, increasing the number of traditional activities that tribal members could practice. Specifically, tribal members could search for and find whales and strike, harvest, and tow whales to shore. The number of times tribal members could participate in searching for and finding whales would increase compared to the No-action Alternative by approximately 20 days per year, year round. The number of times they could participate in striking, harvesting, and towing whales to shore would increase by up to three whales struck per year and two whales harvested per year on average. The increase in the number of times these activities are performed would also increase the amount of traditional knowledge associated with the activities, and the opportunities to apply and transmit that knowledge.

In addition to permitting some currently-prohibited activities, thus increasing the number of traditional activities that could be practiced, implementation of Alternative 5 would likely increase the number of times tribal members engage in activities that are not currently prohibited. Specifically, tribal members are not currently prevented from building large whale-hunting canoes or fabricating and maintaining whale-hunting equipment, but there is little practical reason for them to do so. If a whale hunt were authorized under Alternative 5, there would likely be an increase in the number of times that tribal members practice these activities.

Similarly, tribal members are not currently prohibited from processing and consuming whale products from drift whales, but the opportunity to do so is limited. The number of times tribal members could participate in processing whales would increase from the current potential of perhaps one whale every five years to two whales per year. The amount of whale products tribal members could share and consume would similarly increase from one whale every five years to up to two whales per year, although limits on hunt timing and harvest of identified whales might make it difficult for tribal members to harvest the full limit.

Under Alternative 5 tribal members would again actively practice the skills necessary to build large whale hunting canoes; fabricate and maintain whale hunting equipment; search for and find whales; strike, harvest, and tow whales to shore; butcher and distribute them; and perform ceremonial songs and dances to celebrate successful hunts. As a result, words and vocabulary related to preparing to hunt, hunting, harvesting, towing, and processing whales, as well as sharing, preparing, and consuming whale products, would likely become more widely used than they currently are.

In contrast to the No-action Alternative, Alternative 5 would enable new generations to participate in whale hunting activities; develop, apply and transmit knowledge of whale hunting; and learn and use words related to whale hunting. Makah youth would have active whalers as role models. With a resumption of whale hunting, Under Alternative 5 the amount of satisfaction the Tribe might derive from the practice of traditional activities and the application of traditional knowledge, would increase beyond the current level.

Compared to Alternatives 2, 3, and 4, the Makah Tribe would be able to practice the same number of activities and apply and transmit the same types of traditional knowledge. However, the number of times they could practice both currently allowed and currently prohibited activities, and could apply traditional knowledge, would be less under Alternative 5 than under Alternatives 2, 3, and 4.

Spiritual Connection to Whale Hunting

Under Alternative 4, the ability to resume whale hunting would likely increase the Makah's spiritual connection to whale hunting over current conditions, as described under Alternative 2.

Cultural Identity

Under Alternative 4, the ability to resume whale hunting would likely increase the cultural identity of the Makah over current conditions, as described under Alternative 2.

4.10.3.6 Alternative 6

Under Alternative 6, whale hunting would be allowed throughout the year (similar to Alternatives 3 and 5) and within the entire U&A, including the Strait of Juan de Fuca.

4.10.3.6.1 Limits on Whale Hunting

Hunt Timing

Alternative 6 would allow year-round hunting, similar to Alternatives 3 and 5. The practical effect of a year-round hunting season, and tribal perceptions and expectations regarding the hunting season, would therefore be the same under Alternative 6 as under Alternatives 3 and 5.

Hunting Area

Under Alternative 6, the Makah could hunt in their entire U&A, including the Strait of Juan de Fuca. Tribal members could hunt in all areas traditionally used by Makah whalers and some tribal members might consider this Alternative as more consistent with the Treaty of Neah Bay (although the limitation on hunting area was proposed by the Makah Tribe). Under Alternative 6 tribal members would be able to choose hunting times and locations based on whale availability and sea conditions (Braund et al. 2007).

By allowing hunting in the Strait of Juan de Fuca portion of the Makah U&A, Alternative 6 provides the ability to harvest whales in areas that may be close to butchering sites and gives tribal members the flexibility to hunt in the most opportune locations.

Strike and Harvest Limits

The strike and harvest limits under Alternative 6 would be the same as under Alternative 3, with the same practical effects and tribal perceptions and expectations.

4.10.3.6.2 Opportunity to Resume Whale Hunting

Under Alternative 6, the conditions on hunting would be sufficiently similar to those under Alternative 3 that they would lead to the same number of days of hunting, and the same likelihood that the Tribe would be able to harvest the full number of whales allowed. Thus the increase in the Tribe's amount of subsistence use of whales over current conditions would be the same as that described under Alternative 3, as would the increase in the Tribe's practice of traditional activities and application and transmission of traditional knowledge. Similarly, the increase in the Tribe's spiritual connection to whaling, compared to current conditions, would be the same under Alternative 6 as under Alternative 3.

The Tribe might experience a greater sense of cultural identity under Alternative 6 than under Alternative 3 because of the ability to hunt in the entire U&A. Residents could experience an enhanced sense of autonomy when given the power to make their own decisions regarding the timing and locations of their hunts. A sense of autonomy is one of the measures of cultural identity (Section 4.10.2.4, Cultural Identity).

4.11 Noise

4.11.1 Introduction

This section addresses the potential for the alternatives to affect sensitive noise receptors in the project area, specifically receptors in the human environment. Of particular concern is the

potential for noise from hunt-related activities (including vessels, aircraft, or firearms) to disturb residents, businesses, and visitors in the project area. Residential and commercial areas that could potentially be affected by noise from hunt-related activities include properties adjacent to Neah Bay and the Makah tribal Center, as well as low-density residential areas south of the Wa'atch River on the Pacific coast and near State Route 112 on the Strait of Juan de Fuca. Recreational users of the OCNMS, the Makah Reservation, and the Olympic National Park could also be affected by noise disturbance. The potential for hunt-related noise, including underwater noise, to disturb wildlife species is addressed in Section 4.5, Other Wildlife.

4.11.2 Evaluation Criteria

Two criteria were used to determine the potential for adverse effects on sensitive noise receptors under the alternatives. The first is the anticipated intensity and duration of noise produced by hunt-related activities (including vessels, vehicles, and aircraft involved in the hunt, protests, media, and law enforcement, as well as weapons used to strike and/or kill a whale). The second is anticipated noise levels at sensitive sites, as indicated by the distance between noise sources and potential receptors.

4.11.2.1 Noise Generated by Hunt-related Activities

Under current conditions, noise from vehicles, marine vessels, and aircraft is commonly heard throughout the project area. Other sources of noise include commercial areas, sports fields, logging operations, and the foghorn at Tatoosh Island. Natural sounds, such as those of wind and surf, contribute to high ambient noise levels in portions of the project area, particularly in areas close to the shoreline of the Pacific coast and the Strait of Juan de Fuca. A whale hunt and associated activities (such as monitoring, protests, law enforcement and weapons discharge) would be expected to result in increased noise levels in the project area. Sources of noise from hunt-related activities would include vessels and aircraft (noise would persist for the duration of each hunt) and firearms and explosive devices (noise would be intense and brief). Noise from automobile traffic would not be expected to increase at nearby properties as a result of implementing any of the action alternatives because daily and monthly traffic counts from the period of the previous hunts did not show an appreciable change in traffic volumes in the project area (Section 3.13.3.1.2, Vehicle Traffic Patterns During the 1999 Hunt).

It is possible that the number and types of vessels and aircraft participating in each hunting expedition (including observation, protests, law enforcement, and media coverage) would vary under the action alternatives. For example, alternatives that allow year-round hunting could

attract more observers because of better weather conditions, or alternatives that allow more hunts might attract less media coverage as whale hunting becomes less of a novelty. Because of the difficulty of predicting such variations, and how they might affect the precise numbers of vessels and aircraft participating in each hunt, this analysis assumes each hunting expedition would be accompanied by the same amount of vessel and aircraft activity and associated noise. Vessels and aircraft associated with each hunt would likely be similar to those associated with the previous hunts, described in Section 3.11.3.2.2, Fishing Vessel Traffic. The noise level associated with vessels and aircraft under each alternative would depend on the number of days hunting associated with the alternative.

Weapons that may be used to strike and kill whales are described in Section 3.15.3.5.2, Weapons Associated with the Hunt. The Makah propose to strike and secure a whale with a hand-thrown toggle-point harpoon and to kill it with a .50-caliber rifle. An alternative method for striking a whale would be a hand-thrown darting gun with an explosive grenade. Alternative methods for killing a whale include explosive grenades delivered either by a hand-thrown darting gun or shoulder gun. If a shoulder gun were used, the blast would likely be louder than the noise associated with a rifle. The grenade is designed to detonate after entering the whale. Atmospheric noise from the detonation would be muffled by the surrounding tissue and by the water surrounding the whale and would probably not exceed the noise level of either the rifle or shoulder gun. Underwater noise from the grenade explosion, which would likely be intense, is discussed in Section 4.5, Other Wildlife. The amount of noise produced by weapons would depend on the number of whales that may be struck and killed under a given alternative.

4.11.2.2 Noise Levels at Receiving Properties

As a general rule of thumb, sound level in an open environment (such as occurs throughout the project area) drops 6 dB for every doubling of the distance from the noise source (Occupational Safety and Health Administration 1999). Thus, if a sound has an intensity of 100 dB 50 feet from the source (a standard distance for measuring noise output levels), the intensity at 100 feet would be 94 dB; at a distance of 1 mile, the sound level would be approximately 60 dB. Thus the potential for noise from hunt-related activities to affect sensitive receptors would depend primarily on the distance between the activities and the receptors. Any activities that occur closer to shore would be more audible than activities further offshore. For example, whale hunting during summer (under Alternatives 3, 5, and 6) may target whales that are feeding in the project area, and may therefore take place closer to shore than hunting during winter or spring, which may target migrating whales further offshore (Alternatives 2 and 4). In addition, most recreation

visits occur during summer. Whale hunting activities during summer may be audible to more persons on trails and beaches in the Olympic National Park and the Makah Reservation, compared to activities at other times of year.

For firearms, the noise level at a receiving property would also depend on the direction the muzzle is facing at the moment of discharge, because gunfire noise is louder in the direction the weapon is pointed. Weapons discharged intentionally during a whale hunt would be pointed at a downward angle toward the whale:

> The rifleman on the chase board may not discharge his weapon until authorized to fire by a safety officer designated by the whaling captain. The safety officer would not authorize the discharge of the rifle unless the barrel of the rifle is above and within 30 feet from the target area of the whale and the rifleman's field of view is clear of all persons, vessels, buildings, vehicles, highways and other objects or structures that if hit by a rifle shot could cause injury to human life or property (2.3.3.2.7, Other Environmental Protection Measures).

It is reasonable to expect that the direction of fire would be away from commercial or residential areas.

As with the previous hunts, most hunting under the Alternatives 2 to 5 would probably take place 1 mile or more offshore in the Pacific coast portion of the U&A. Hunting under Alternative 6 would also likely occur in the coastal portion of the Makah U&A, but could also occur in the Strait of Juan de Fuca. For hunting in the coastal portion of the U&A, noise from vessels and weapons would be audible at few, if any, residential or commercial properties, including the Makah tribal Center. Recreational users of beaches in the OCNMS, the Makah Reservation, and the Olympic National Park would be most likely to hear noise associated with whale hunts under the action alternatives. Hunting activities that occur in the Strait of Juan de Fuca (i.e., under Alternative 6) may be audible at residential properties along State Route 112. Such noise would likely be masked by highway traffic noise, however.

Aircraft engaged in monitoring and law enforcement for the hunt would be audible primarily near vessels engaged in hunt-related activities or other vessels that might be in the vicinity of a hunt, such as recreational fishing vessels. Aircraft within OCNMS boundaries would be expected to observe the requirement to stay above an altitude of 2,000 feet. Increased noise levels from aircraft taking off and landing would also be audible at commercial and residential properties near the landing pad at Coast Guard Station Neah Bay. Media helicopters would likely arrive from other areas and would be present only near a successful harvest or major protest activity. Aircraft monitoring hunt-related activities that occurred outside the OCNMS (e.g., hunting in the Strait of

Juan de Fuca under Alternative 6, or events at Neah Bay under all action alternatives) would not have to maintain an altitude of at least 2,000 feet. For this reason, aircraft noise levels at receiving properties in Neah Bay and along State Route 112 would likely be louder than those along the Pacific coast portion of the U&A.

The area with greatest potential for disturbance from hunt-related activities under any of the action alternatives is Neah Bay, where most protests and law enforcement activities occurred during the previous hunts. If protest vessels moor at Clallam Bay, as they did during the previous hunts, increased noise levels would also be expected there and possibly along the travel route between Clallam Bay and Neah Bay.

4.11.3 Evaluation of Alternatives

The following sections consider the potential for the alternatives to affect sensitive noise receptors in the project area. For each alternative, the discussion addresses the potential number of occasions on which hunt-related activity may lead to elevated noise levels, as well as the likelihood that such noise would be detectable at sensitive sites.

The lowest risk of adverse effects on sensitive noise receptors would occur under the No-action Alternative, because no whale hunts would be permitted. The risk under the action alternatives would increase, with the amount of increase depending on the number of days of hunting and the number of rifle shots or grenade explosions. Table 4-1 identifies those numbers and Section 4.1, Introduction, describes the rationale for expecting those numbers. Compared to the No-action Alternative, the risk would increase under Alternatives 2 and 4 due to increases in aircraft and vessel noise over 7 to 30 days. The risk would increase further under Alternatives 3 and 6 due to increases in aircraft and vessel noise over 40 days. Alternatives 2, 3, 4, and 6 would all be expected to result in the same amount of increased risk from weapons discharge, compared to the No-action Alternative, because they include the same limits on the number of whales that may be struck and so would likely result in the same number of rifle shots (28) or grenade explosions (21).

Alternative 5 would also result in increased risk to sensitive noise receptors over the No-action Alternative due to increases in aircraft and vessel traffic over 20 days. This risk may be comparable to that under Alternatives 2 and 4, which would result in 7 to 30 days of hunting, and would be less than that under Alternatives 3 and 6, which would result in 40 days of hunting. Alternative 5 would carry the lowest risk from noise associated with weapons discharge because of the lower number of discharges (12 rifle shots and 9 grenade explosions).

4.11.3.1 Alternative 1

Under Alternative 1, no whale hunt would be permitted, and no whale hunting or associated activities would be expected to occur. The amount of noise-generating activity in the project area would not be expected to differ from current levels, and noise levels would not change from the current conditions described in Section 3.11.3.2, Existing Noise Levels.

4.11.3.2 Alternative 2

Under Alternative 2, vessel and aircraft noise associated with a hunt would be expected to occur on a total of 7 to 30 days, mostly during April and May. Also under Alternative 2, the limit on the number of struck whales would be seven and would potentially result in as many as 28 rifle shots or 21 grenade explosions annually. Compared to the No-action Alternative (under which there would be no hunt-related noise), the noise from vessels, aircraft and weapons discharge would result in increased noise levels at receiving properties in Neah Bay. There could also be increased noise levels at receiving properties along State Route 112, east of Neah Bay, from protest vessels traveling between Clallam Bay and Neah Bay.

In contrast to the No-action Alternative, increased noise from vessels, aircraft, and weapons associated with whale hunts under Alternative 2 may be audible to recreational users of the OCNMS, the Makah Reservation, and the Olympic National Park. The number of recreational visitors who may be affected would be limited, however, because hunting would be restricted to the winter and early spring months when visitation is comparatively low.

4.11.3.3 Alternative 3

Alternative 3 would include the same limits on the number of whales struck as Alternative 2, but would impose no restrictions on the hunting season. Under Alternative 3, vessel and aircraft noise associated with a hunt would be expected to occur on a total of 40 days; the limit on the number of struck whales would be seven and would potentially result in as many as 28 rifle shots or 21 grenade explosions. Compared to the No-action Alternative (under which there would be no hunt-related noise), the noise from vessels, aircraft and weapons discharge would result in increased noise levels at receiving properties in Neah Bay on a total of 40 days. There could also be increased noise levels at receiving properties along State Route 112, east of Neah Bay, from protest vessels traveling between Clallam Bay and Neah Bay. In addition, noise from vessels, aircraft, and weapons associated with whale hunts under Alternative 3 may be audible to recreational users of the OCNMS, the Makah Reservation, and the Olympic National Park, in contrast to the No-action Alternative, which would involve no hunt-related noise.

Compared to Alternative 2, Alternative 3 would be likely to result in a greater increase in noise levels at receiving properties because there would be more days of hunt-related vessel traffic (40 days compared to 7 to 30 days). Alternative 3 would result in about the same increase in noise levels from weapons discharge as Alternative 2 because it would impose the same limit on number of whales struck as Alternative 2, and thus result in the same number of rifle shots (28) and grenade explosions (21).

Alternative 3 has a greater potential to disturb recreational users in the project area than Alternative 2 because whale hunts would likely occur during the peak period of recreational use and may target whales that are feeding relatively close to shore (compared to whales that are migrating farther offshore at other times of year).

4.11.3.4 Alternative 4

Alternative 4 would include the same limits on the number of whales harvested as Alternative 2 and would impose the same restrictions on the hunting season. The additional restrictions contained in Alternative 4 (no hunting within 200 yards of rocks and islands in the Washington Islands National Wildlife Refuges) would not be expected to influence the potential for disturbance at residential or commercial properties or to recreational users in the project area. Therefore, the likely increase in noise at receiving properties under Alternative 4 would be the same as the likely increase under Alternative 2, relative to the No-action Alternative.

4.11.3.5 Alternative 5

Alternative 5 would include a limit of three struck whales and two harvested whales in any one year. Year-round hunting would be allowed. The expected number of hunting days would be 20 per year and the expected number of weapons discharges would be 12 rifle shots or 9 grenade explosions. Compared to the No-action Alternative (under which there would be no hunt-related noise), the noise from vessels, aircraft and weapons discharge would result in increased noise levels at receiving properties in Neah Bay and along State Route 112 east of Neah Bay on a total of 20 days. In addition, noise from vessels, aircraft, and weapons associated with whale hunts under Alternative 5 may be audible to recreational users of the OCNMS, the Makah Reservation, and the Olympic National Park, in contrast to the No-action Alternative, which would involve no hunt-related noise.

Compared to Alternatives 2 and 4, Alternative 5 might result in about the same number of days of hunting (20 compared with 7 to 30) and therefore a comparable increase in aircraft and vessel noise at receiving properties. Alternative 5 would result in a smaller increase in noise from

weapons discharges, however, due to the smaller number of discharges. Compared to Alternative 3, Alternative 5 would result in fewer days of hunting (20 compared with 40) and fewer weapons discharges (12 rifle shots versus 28 and 9 grenade explosions versus 21) and would therefore result in a relatively smaller increase in noise.

Similar to Alternative 3, whale hunts under Alternative 5 would likely occur during summer (the peak period of recreational use) and may target whales that are feeding relatively close to shore (compared to whales that are migrating farther offshore at other times of year). For these reasons, Alternative 5 would have a greater potential than Alternatives 2 and 4 of disturbing recreational users in the project area.

4.11.3.6 Alternative 6

Alternative 6 would include the same provisions as Alternative 3 except that hunting would also be allowed in the Strait of Juan de Fuca portion of the Makah U&A. Alternative 6 would be expected to result in the same number of hunting days year round, and the same number of weapons discharges, as Alternative 3. Therefore, compared to the No-action Alternative, the overall increase in noise from aircraft, vessels, and weapons discharge would likely be the same under Alternative 6 as under Alternative 3.

The ability to hunt in the Strait, however, might result in effects in different locations than would occur under Alternative 3, compared to the No-action Alternative. If tribal members chose to hunt in the Strait instead of the coastal portion of the Makah U&A, this could result in fewer instances of disturbance to recreational users of beaches and trails in the OCNMS, the Makah Reservation, and the Olympic National Park, compared to Alternative 3. It could also result in elevated noise levels at residential properties along State Route 112.

4.12 Aesthetics

4.12.1 Introduction

This section addresses the potential for the alternatives to result in adverse aesthetic effects on observers, based on the potential for viewers to see the whale hunt, either directly or through the media. Media images of the previous hunt prompted reactions ranging from revulsion to admiration. Analyses in this section consider the effects on observers who may be present at sites with direct views of a whale hunt (including views of a whale dying, being towed to shore, and/or being butchered), as well as those who may see such images through various media outlets. Whale hunting and related activities under the action alternatives would be short-term and localized, and would take place upon the water; such activities, therefore, would not affect natural

visual resources in the project area, such as stacks, pillars, and islands (Section 3.12.3.1, Visual Resources in the Project Area).

4.12.2 Evaluation Criteria

Two criteria were used to determine the potential for aesthetic effects under the alternatives. The first is the anticipated number of persons who may be present at sites that may offer views of hunt-related activities, as well as their expectations (that is, whether individuals may encounter views of hunt-related activities without intending to do so). The second criterion includes the anticipated amount, intensity, duration, scope, and content of media coverage. The following two sections discuss these matters in greater detail and identify how the effects of the alternatives may be assessed and differentiated.

4.12.2.1 On-scene Observers

For each hunt, the number of interested observers (those who actively seek viewing opportunities out of concern about the outcome of the hunt) and persons engaged in monitoring, law enforcement, and media coverage would not be expected to vary under the action alternatives. The number of casual observers who could see hunt activity on the water (including pursuits, strikes, and possibly the death of a whale) would vary seasonally, with the greatest number of potential observers during the peak visitation period from June through September. The number of potential casual observers would also be expected to differ with the hunt area, as hunt-related activities in the Strait of Juan de Fuca may be visible to residents and travelers along State Route 112. Opportunities to view whale hunting in the Pacific coast portion of the Makah U&A would occur mostly from hiking trails and beaches, along with a limited number of road-based locations on the Makah Reservation (Section 3.12.3.2, Vantage Points and Viewing Opportunities). As with the previous hunts, most hunting under the action alternatives would be expected to take place 1 mile or more offshore in the Pacific coast portion of the U&A. Hunt activities would be visible from few, if any, land-based vantage points. Any activities that occur closer to shore would be more readily viewed. For example, whale hunting during summer (under Alternatives 3, 5, and 6) may target whales that are feeding in the project area, and may therefore take place closer to shore than hunting that targets migrating whales further offshore. Whale hunting activities during summer may be more readily seen by persons on trails and beaches in the Olympic National Park and the Makah Reservation.

The number of potential observers for a whale carcass being towed to shore and butchered would depend in part on the location of the beach to which the whale is brought. The whale that was

harvested in 1999 was brought to Neah Bay, where butchering and harvest-related ceremonies and celebrations were readily observable by numerous tribal members, local residents, protesters, enforcement personnel, and media representatives. Alternative locations where a whale carcass may be brought to shore and butchered would likely be in far less prominent and accessible locations along the Pacific coast portion of the Makah Reservation. Under alternatives with no hunt timing restrictions, there would be a greater potential for recreational users of such areas to encounter views of a whale carcass without actively seeking such views.

The number of potential observers would also depend on the number of days of hunting, which in turn would depend primarily on the number of days of hunting. Table 4-1 identifies the number of days of hunting expected under each Alternative. The number of potential observers would depend on the season during which hunting occurs (more potential observers during summer), the location where hunting occurs (more potential observers in the Strait of Juan de Fuca than the coastal portion of the Makah U&A), the location where a whale carcass is brought to shore (more potential observers in the Strait of Juan de Fuca than the coastal portion of the Makah U&A), and the number of days of hunting (more hunts would create more opportunities for inadvertent viewing of hunt-related activities).

4.12.2.2 Media Viewers

As described in Section 3.12.3.3, Media Coverage of Previous Authorized Hunts, previous Makah whale hunts were the focus of intense coverage in local and regional newspapers, television broadcasts, and other media outlets. Stories and images of the hunt were also distributed nationwide and internationally. As with the previous hunts, media coverage would be expected to include images of hunt activities, protests, and public ceremonies and celebrations, as well as of a whale or whale being struck, killed, brought to shore, and butchered.

The amount of media coverage would depend on the amount of hunt-related activity, which in turn would depend primarily on the number of days of hunting. Table 4-1 identifies the number of days of hunting expected under each Alternative. It is possible that media coverage would be more intense for initial hunts, and would diminish as subsequent hunts occur. Even if that were to occur, alternatives with more days of hunting are still likely to result in more media coverage overall.

4.12.3 Evaluation of Alternatives

The following sections consider the potential for the alternatives to result in aesthetic effects on observers. For each alternative, the discussion addresses the potential number of on-scene observers who might view whale-hunting activities and the amount of media coverage.

The lowest risk of adverse aesthetic effects to casual observers would occur with the No-action Alternative, under which no whale hunts would be permitted. The No-action Alternative, however, would have adverse aesthetic effects on interested observers who desire to view a hunt. Under all of the action alternatives, interested observers could view a whale being hunted, towed to shore, or butchered from numerous points along the shoreline near Neah Bay and, to a lesser degree, the Pacific coast portion of the Makah U&A. Viewers not desiring to see a hunt, such as recreational users in the portions of the OCNMS, Olympic National Park, and Makah Reservation, may encounter views of hunt-related activities without expecting to do so (Section 3.12.3.2, Vantage Points and Viewing Opportunities).

4.12.3.1 Alternative 1

Under the No-action Alternative, no whale hunt would be permitted, and no whale hunting or associated activities (e.g., ceremonies, celebrations, protests, law enforcement) would be anticipated. Therefore, there would be no potential to view hunt-related activities in the project area or through the media. With the possible exception of drift whales, no whale carcasses would be encountered by interested observers or recreational users of area beaches, trails, or campsites. Those desiring to view a hunt would not have the opportunity under this alternative.

4.12.3.2 Alternative 2

Under Alternative 2, whale hunting would be expected to occur over 7 to 30 days, most likely during April and May. Hunts might be visible to observers at beaches and vantage points along the Pacific coast portion of the project area. Hunt activities would take place during the winter and spring, when recreational use of these areas is typically lower than during the summer months. Compared to the No-action Alternative, under Alternative 2 there is an increased potential for recreational users to inadvertently encounter sights of a whale being hunted or towed to shore during a period of 7 to 30 days between December 1 and May 31. No hunting would be permitted within the Strait of Juan de Fuca, so there would be little potential for residents and travelers along State Route 112 on the Strait of Juan de Fuca to view a whale hunt.

As occurred in 1999 and 2000, whale hunts and associated activities (including protests and law enforcement) would likely receive extensive coverage in various media outlets. Public response

would likely be substantial, expressing a wide range of opinions (Section 3.12.3.3, Media Coverage of Previous Authorized Hunts).

4.12.3.3 Alternative 3

Under Alternative 3, hunting would likely occur year round, with a likely total of 40 days of hunting. Hunts might be visible to observers at beaches and vantage points along the Pacific coast portion of the project area. Hunt activities would likely take place during the summer, when recreational use of these areas is highest. Thus compared to the No-action Alternative, under Alternative 3 there is an increased potential for recreational users to inadvertently encounter sights of a whale being hunted, towed to shore, or butchered during a period of 40 days throughout the year. No hunting would be permitted within the Strait of Juan de Fuca, so there would be little potential for residents and travelers along State Route 112 on the Strait of Juan de Fuca to view a whale hunt.

Compared to Alternative 2 there would be more days of hunting (40 versus 7 to 30) and therefore more opportunities for observers at beaches and vantage points along the Pacific coast portion of the project area to inadvertently view hunting activities. Also compared to Alternative 2, hunting would occur during the summer months, when recreational use of the project area is higher. Therefore, compared to the No-action Alternative, Alternative 3 is likely to have greater potential for observers to view hunt activities than alternative 2.

As occurred in 1999 and 2000, whale hunts and associated activities (including protests and law enforcement) would likely receive extensive coverage in various media outlets. Public response to media coverage would likely be substantial, with a variety and intensity of response similar to that described in Section 3.12.3.3, Media Coverage of Previous Authorized Hunts. Because there would be more days of hunting under Alternative 3 than under Alternative 2, Alternative 3 would likely result in a greater increase in the amount of media broadcasts over the No-action Alternative, compared to Alternative 2.

4.12.3.4 Alternative 4

Alternative 4 would include the same limits on the number of whales harvested as Alternative 2, and include the same hunting season. The additional restrictions contained in Alternative 4 (no hunting within 200 yards of rocks and islands in the Washington Islands National Wildlife Refuges) would not be expected to affect the number of days of hunting or the numbers of whales harvested. Therefore, the likely increase in adverse aesthetic effects under Alternative 4 would be the same as under Alternative 2, compared to the No-action Alternative.

4.12.3.5 Alternative 5

Under Alternative 5, hunting would likely occur year round, with a likely total of 20 days of hunting. Hunts might be visible to observers at beaches and vantage points along the Pacific coast portion of the project area. Hunt activities would likely take place during the summer, when recreational use of these areas is highest. Thus compared to the No-action Alternative, under Alternative 5 there is an increased potential for recreational users to inadvertently encounter sights of a whale being hunted or towed to shore during a period of 20 days throughout the year, including the heaviest periods of recreational use. No hunting would be permitted within the Strait of Juan de Fuca, so there would be little potential for residents and travelers along State Route 112 on the Strait of Juan de Fuca to view a whale hunt, although it is possible that pursuit of a struck whale could lead Makah hunters into the Strait.

Compared to Alternatives 2 and 4,, Alternative 5 would likely result in about the same number of days of hunting (20 versus 7 to 30), but hunting would occur during summer months when more recreational users would be present. Therefore, compared to the No-action Alternative, Alternative 5 is likely to have greater potential for observers at beaches and vantage points along the Pacific coast portion of the project area to inadvertently view hunting activities than the potential that exists under Alternatives 2 or 4.

As occurred in 1999 and 2000, whale hunts and associated activities (including protests and law enforcement) would likely receive extensive coverage in various media outlets. Public response to media coverage would likely be substantial, with a variety and intensity of response similar to that described in Section 3.12.3.3, Media Coverage of Previous Authorized Hunts. Because there would be about the same number of days of hunting under Alternative 5 as under Alternatives 2 and 4, Alternative 5 would likely result in about the same increase in media broadcasts as these Alternatives 2 and 4, as compared to the No-action Alternative.

Compared to Alternative 3, Alternative 5 would allow hunting throughout the year, but there would be about half as many days of hunting. Thus under Alternative 5, fewer on-site observers at beaches and vantage points along the Pacific coast portion of the project area would likely see a whale being hunted, brought to shore, or butchered, compared to Alternative 3. Because there would likely be fewer days of hunting under Alternative 5 than under Alternative 3, there would also likely be fewer media broadcasts.

4.12.3.6 Alternative 6

Alternative 6 would include the same provisions as Alternative 3 except that hunting would also be allowed in the Strait of Juan de Fuca portion of the Makah U&A. Alternative 6 would be expected to result in the same number of hunting days year round as Alternative 3. The ability to hunt in the Strait, however, might result in effects in different locations than would occur under Alternative 3. If tribal members chose to hunt in the Strait instead of the coastal portion of the Makah U&A, this could result in residents and travelers along State Route 112 inadvertently viewing a whale being hunted, brought to shore, or butchered. If some hunting occurs in the Strait rather than the Pacific coast portion of the Makah U&A, the number of opportunities for on-site observers at beaches and vantage points to see a whale being hunted, brought to shore, or butchered would be less than anticipated under Alternative 3, because fewer whale hunts would likely occur in the coastal portion of the U&A. Thus compared to the No-action Alternative, Alternative 6 would result in about the same increase in inadvertent observations of whale hunting activities, but in different locations. Regardless of the location of hunting, the amount of media coverage would likely be similar under Alternatives 3 and 6, compared to the No-action Alternative. Public response to media coverage would likely be substantial, with a variety and intensity of response similar to those described in Section 3.12.3.3, Media Coverage of Previous Authorized Hunts.

Compared to Alternatives 2 and 4, it is likely that more observers on shore would see a whale being hunted, brought to shore, or butchered.

4.13 Transportation

4.13.1 Introduction

This section addresses the potential for a whale hunt and hunt-related activities in the project area to interfere with normal traffic patterns on highways, marine waters, and air routes near Neah Bay. In addition, analyses address the potential for changes in traffic patterns to result in an increased risk of traffic accidents or to impede access by emergency services.

4.13.2 Evaluation Criteria

For this analysis, transportation resources in the project area are subdivided into three categories – land, water, and air. Two criteria were used to determine the potential for effects on transportation under the alternatives. The first is the extent to which a particular alternative may affect traffic volumes or impede the movement of vehicles, vessels, or aircraft. Because each hunt would be expected to result in the same change in highway, marine, and air traffic volumes in the

project area, the change in traffic would depend primarily on the amount of hunt-related activity. The amount of hunt-related activity would vary depending on the number of days that hunting occurs. Table 4-1 identifies the number of days of hunting expected under each alternative and Section 4.1, Introduction, describes the rationale for those numbers.

The analysis next considers whether changes in traffic patterns under each alternative might result in an increased risk of traffic accidents or might impede access by emergency services. An alternative would be more likely to result in problems if it impeded or created a substantial increase in traffic during a time of year when volumes were higher than average. The following sections describe the potential effects of each alternative on transportation, based on the extent and timing of traffic changes in each of the three categories.

4.13.2.1 Highway Traffic

It is unlikely that whale-hunt-related activities under the action alternatives would have a detectable effect on highway traffic volumes in the project area. Table 3-37 shows monthly averages of weekday traffic counts on Highway 101 near State Route 113. Average traffic counts for the months during which previous hunts or practice exercises took place (November 1998, May 1999, April 2000, and May 2000) are no higher than the 10-year averages for those months. For example, the average weekday traffic count for May 1999 was 2,572 vehicles, while the 1995-to-2004 average weekday count for May was 2,588 vehicles. In addition, there is no evidence of an increase in the number of collisions on project area highways during the years in which previous hunts or practice exercises took place (Table 3-38).

As noted in Section 3.13.3.1.2 (Vehicle Traffic Patterns during the 1999 Hunt), previous hunts affected highway traffic flow in the project area on one occasion when protesters and local police responding to them blocked traffic on State Route 112 for approximately 2.5 hours. The likelihood of a blockage occurring under the action alternatives cannot be predicted, but the potential for such an occurrence would be expected to increase with the number of days of hunting. Table 4-1 identifies the number of hunting days anticipated for each alternative. The intensity of any roadway blockage would depend on the time of year during which it occurred. Therefore, hunts during the peak travel season (June through September; Figure 3-11) would affect more travelers and have a greater risk of impeding emergency vehicles, compared to a blockage at other times of year. Summer is also the period with the greatest number of visitors to the Makah Reservation (Section 3.13.3.1.1, Typical Vehicle Traffic Volume Patterns). A road

blockage during summer would also be expected to have a greater impact on access to the reservation than a blockage at other times of year.

4.13.2.2 Marine Traffic

Accounts from previous hunts indicated that protesters operated approximately 15 vessels near hunt activities, including Neah Bay and Sekiu (Section 3.15.3.4, Behavior of People Associated with the Hunt). There were no reports of whale hunting or protest vessels hindering the passage of commercial or recreational fishing vessels, or of marine accidents associated with hunt-related traffic. The incident in 2000, in which a protester on a jet ski collided with a Coast Guard vessel enforcing the MEZ, was a direct result of the actions of the parties involved, rather than a byproduct of increased traffic volume.

Hunt-related activities would be unlikely to interfere with commercial shipping traffic, because most (if not all) hunting would probably occur within the Coast Guard RNA, which lies almost entirely within the OCNMS area to be avoided. Commercial shipping traffic largely honors the area to be avoided (Section 3.6.3.1.4, Commercial Shipping) and would, therefore, be unlikely to encounter any hunt-related vessels. The only area where commercial shipping traffic could reasonably be expected to encounter hunt-related vessels is in the Strait of Juan de Fuca, because the area to be avoided does not extend eastward of Cape Flattery. Traffic lanes for commercial ships in the Strait are generally 3 to 4 miles from the northern shore of the Olympic Peninsula. Based on the experience of the whale hunts in 1999, most hunt activities would likely take place within 1 or 2 miles of shore, or possibly closer; vessels engaged in hunts, protests, media coverage, or law enforcement would not be likely to venture into the commercial shipping traffic lanes farther offshore. Hunts that take place during summer (under Alternatives 3, 5, or 6) would likely target whales that are feeding in the project area, and may therefore take place closer to shore than hunting that targets migrating whales further offshore (Alternatives 2 and 4). The likelihood for hunt-related traffic to interfere with commercial shipping traffic is very low, therefore, because most hunt activities would be unlikely to occur in commercial shipping lanes. Hunt-related activities in areas south of the traffic lanes would have the potential to interfere with slow-moving vessels, such as small fishing vessels and tugs with barges, which are allowed to transit eastbound and westbound south of the commercial traffic lanes.

While it is possible that vessels engaged in hunts, protests, media coverage, or law enforcement could interfere with vessels entering or leaving Neah Bay, the likelihood of such interference occurring under the action alternatives cannot be predicted. The potential for interference or

marine accidents depend primarily on the number of days of hunting. Table 4-1 identifies the number of days of hunting expected under each Alternative. The potential for interference would also depend on the time of year that hunting occurs. As noted in Section 3.13.3.2, Marine Vessel Traffic, approximately 83 percent of all boat trips (commercial and recreational) from Neah Bay occur during the months of May through August. Less than 5 percent of all trips occur during the five-month period from November through March, and 5 percent occur during April. Hunt-related activities that occur during the summer peak period for marine traffic would have a greater potential to affect commercial or recreational fishing vessel traffic, compared to activities at other times of year. If the number of boat trips from Neah Bay continues to increase at a rate similar to what has been observed in recent years (Table 3-39), the likelihood of hunt-related vessel traffic interfering with other marine traffic (particularly recreational fishing trips) would likewise be expected to increase.

4.13.2.3 Air Traffic

There is no indication from accounts of previous hunts that law enforcement or media aircraft interfered with air traffic in the project area. The likelihood of such interference occurring under the action alternatives cannot be predicted, but the potential would be expected to increase each time a hunt takes place. Hunt-related activities that occur during a peak period for aircraft use would have a greater potential to affect air traffic, compared to activities at other times of year. No data are readily available to quantify seasonal differences in air traffic in the project area, but the peak period of aircraft use likely coincides with the summer months, when conditions of low wind and good visibility are relatively common.

4.13.3 Evaluation of Alternatives

The following sections consider the potential for the alternatives to affect transportation in the project area. For each alternative, the discussion addresses the anticipated increases in the volume or patterns of highway, marine, and air traffic in the project area, as well as changes in the risk of traffic accidents and the potential for highway blockages to interfere with emergency vehicles. The lowest risk of adverse effects on transportation would occur with the No-action Alternative, under which no whale hunts would be permitted and traffic volumes and patterns on highways, marine waters, and air routes near Neah Bay would not be expected to differ from their current levels. Under all of the action alternatives, elevated levels of marine and air traffic associated with whale hunts would have the potential to interfere with normal traffic patterns and could result in an increased risk of accidents. Although none of the alternatives is likely to increase the

volume of highway traffic, it is possible there could be road blockages associated with protests and ensuing law enforcement responses, creating the possibility of traffic accidents or impediments to access by emergency services.

During each hunt, there would be an increased likelihood, relative to the No-action Alternative, that (1) protests and/or ensuing law enforcement responses could result in highway blockages, (2) vessels involved in the hunt, protests, media, and law enforcement could interfere with fishing or shipping traffic, or (3) aircraft involved in law enforcement or media coverage could interfere with other air traffic in the project area. The number of occasions on which this potential would exceed current conditions under the No-action Alternative would correspond to the number of days on which hunting would occur under a particular alternative.

The risk of adverse effects on transportation would also be related to the time of year in which whale hunting takes place. Alternatives that allow whale hunting during summer months would be more likely to affect commercial and recreational fishing boat trips from Neah Bay. Changes in traffic patterns as a result of highway blockages could have a greater effect during summer months, when traffic volumes are typically higher.

4.13.3.1 Alternative 1

Under the No-action Alternative, no whale hunt would be permitted, and no whale hunting or associated activities (e.g., protests, law enforcement, media coverage) would be expected to occur. Traffic volumes in the project area would not be expected to differ from current levels. There would be no potential for hunt-related activities to interfere with highway, marine, or air traffic; result in an elevated risk of accidents, or impede access by emergency vehicles.

4.13.3.2 Alternative 2

Under Alternative 2, whale hunting would be expected to occur on a total of 7 to 30 days, primarily during April and May. Compared to the No-action Alternative, increased vessel and air traffic associated with whale hunts under Alternative 2 would result in an increased potential for interference with marine or air traffic in the project area and, possibly, an increased risk of accidents. Potential highway blockage resulting from protest activities and law enforcement response could result in traffic accidents or impediments to emergency vehicles. During each hunt, there would be an increased likelihood (relative to the No-action Alternative) that (1) protests and/or ensuing law enforcement responses could result in highway blockages, (2) vessels involved in the hunt, protests, media, and law enforcement could interfere with fishing or shipping traffic, or (3) aircraft involved in law enforcement or media coverage could interfere

with other air traffic in the project area. These risks would occur on a total of 7 to 30 days, most likely during April and May, compared to no occurrences under the No-action Alternative.

Because whale hunting under Alternative 2 would be limited to the winter and early spring months, it would not overlap the peak periods for highway traffic. If most hunts take place during April and May, they would overlap the period during which there is a high volume of marine vessel traffic, particularly for recreational fishing. More boat trips from Neah Bay occur during the months of June through August, compared to May, however (Figure 3-12).

4.13.3.3 Alternative 3

Under Alternative 3, no seasonal restrictions would be imposed on whale hunting activities and hunting would be expected to occur throughout the year over 40 days. Compared to the No-action Alternative, increased vessel and air traffic associated with whale hunts under Alternative 3 would result in an increased potential for interference with marine or air traffic in the project area and, possibly, an increased risk of accidents. Potential highway blockage resulting from protest activities and law enforcement response could result in traffic accidents or impediments to emergency vehicles. During each hunt, there would be an increased likelihood (relative to the No-action Alternative) that (1) protests and/or ensuing law enforcement responses could result in highway blockages, (2) vessels involved in the hunt, protests, media, and law enforcement could interfere with fishing or shipping traffic, or (3) aircraft involved in law enforcement or media coverage could interfere with other air traffic in the project area. These risks would occur on a total of 40, most likely throughout the year.

Compared to Alternative 2, Alternative 3 would result in increased risks to transportation resources because there would be more days of hunting and because hunting would occur year round, including periods of greater highway, vessel and air traffic.

4.13.3.4 Alternative 4

Alternative 4 would include the same limits on the number of whales harvested as Alternative 2, and include the same hunting season. The additional restrictions contained in Alternative 4 (no hunting within 200 yards of rocks and islands in the Washington Islands National Wildlife Refuges) would not be expected to affect the hunting season or the number of days of hunting. Therefore, the likely increase in adverse transportation effects under Alternative 4 would be the same as under Alternative 2, compared to the No-action Alternative.

4.13.3.5 Alternative 5

Under Alternative 5, hunting would likely occur year round, with a likely total of 20 days of hunting. Hunt activities would likely take place during the summer, when highway, vessel and air traffic are highest. Thus compared to the No-action Alternative, under Alternative 5 there is an increased potential for adverse effects on transportation during a period of 20 days throughout the year. Potential adverse effects include interference with highway, marine, or air traffic in the project area and, possibly, an increased risk of traffic accidents or impediment with emergency vehicles. During each hunt, there would be an increased likelihood (relative to the No-action Alternative) that (1) protests and/or ensuing law enforcement responses could result in highway blockages, (2) vessels involved in the hunt, protests, media, and law enforcement could interfere with fishing or shipping traffic, or (3) aircraft involved in law enforcement or media coverage could interfere with other air traffic in the project area. Whale hunts during the summer months, when highway, marine, and air traffic volumes are typically higher than during other times of year, would have a greater potential to affect traffic, compared to activities at other times of year.

Compared to Alternatives 2 and 4, Alternative 5 would likely result in about the same number of days of hunting (20 versus 7 to 30), but hunting would occur during summer months when traffic volumes are higher. Therefore, compared to the No-action Alternative, Alternative 5 is likely to have greater adverse effects on transportation than Alternatives 2 or 4.

Compared to Alternative 3, Alternative 5 would result in half as many days of hunting (20 versus 40), during the same year-round period. Therefore, compared to the No-action Alternative, Alternative 5 is likely to have fewer adverse effects on transportation than Alternative 3.

4.13.3.6 Alternative 6

Alternative 6 would include the same provisions as Alternative 3 except that hunting would also be allowed in the Strait of Juan de Fuca portion of the Makah U&A. Alternative 6 would be expected to result in the same number of hunting days year round as Alternative 3. The ability to hunt in the Strait might result in effects in different locations than would occur under Alternative 3, but would not be expected to have different effects overall compared to the No-action Alternative.

If tribal members chose to hunt in the Strait instead of the coastal portion of the Makah U&A, this could result in hunt-related vessel traffic in the Strait (including Makah vessels and associated protest, media, and law enforcement vessels). Such vessel traffic would not be likely to venture into commercial shipping traffic lanes and would therefore have a very low likelihood of

interfering with the passage of commercial shipping vessels. Unlike any of the other alternatives (including No-action), hunt-related vessel traffic under Alternative 6 could impede or be impeded by slow-moving vessels, such as small fishing vessels and tugs with barges, south of the commercial traffic lanes in the Strait. Any instances of interference would likely occur over a matter of minutes or hours in a small area immediately adjacent to the hunting activity, and would not be likely to have appreciable effects on the ability of slow-moving vessels to pass through the Strait of Juan de Fuca.

4.14 Public Services

4.14.1 Introduction

This section addresses the potential for the alternatives to affect public services in the project area. This section analyzes the potential for a whale hunt and hunt-related activities to impede the ability of law enforcement to maintain order and medical professionals and facilities to treat injuries. Section 4.13, Transportation, discusses the potential for the alternatives to have transportation-related effects on access by emergency vehicles.

4.14.2 Evaluation Criteria

Two criteria were used to determine the potential for effects on public services under the alternatives. The first is the anticipated number of events requiring the attention of law enforcement personnel, and the second is the anticipated number of events requiring the attention of medical personnel.

4.14.2.1 Law Enforcement

Activities by protesters or counter-protesters could result in conflicts or legal infractions that would require intervention by law enforcement agents at sea or on land. A sudden, unanticipated increase in the number or frequency of such incidents could overwhelm the ability of local law enforcement personnel or facilities to respond. Even if such an occurrence were prevented through careful planning and coordination, hunt-related incidents could divert law enforcement resources from other missions. An increase in traffic incidents requiring law enforcement intervention could also divert law enforcement resources from other missions. Section 4.13.3, Transportation, Evaluation of Alternatives, also evaluates the potential for the alternatives to result in changes in traffic incidents, which could require law enforcement intervention or medical response.

As with the previous hunts, a law enforcement task force (Section 3.14.3.2, Police) would probably be assembled to ensure public safety during any whale hunts permitted under the action alternatives. The task force would coordinate county, state, federal, and tribal authorities' efforts to address any potential public disturbances related to whale hunts. Planning undertaken by the previous whale hunt task force included logistics (including assuring the availability of adequate staffing, equipment, and facilities), communications, interagency cooperation, crowd control, and establishment of incident command systems. Similar planning would most likely precede any whale hunts under the action alternatives, reducing the potential for hunt-related incidents to overwhelm law enforcement personnel or facilities.

As noted in Section 3.14.3.2, Police, the Clallam County Sheriff's Department did not find that the previous hunts and associated activities imposed a substantial burden on department staff. The reported increase in traffic stops by the Washington State Patrol on State Route 113 in 1999 could have been related to the Makah whale hunt, but it is not possible to determine from the available data whether that increase occurred before, during, or after the period of the whale hunt. There is no evidence of an increase in traffic volumes or the number of collisions on project area highways during the years in which previous hunts or practice exercises took place (Section 4.13.2.1, Evaluation Criteria, Highway Traffic). Because there is no clear indication of an increase in traffic stops or collisions with previous hunting activities, it is reasonable to conclude there would be no substantial increases in these rates in the project area under any of the alternatives.

During the previous Makah whale practice exercise in 1998 and hunts in 1999 and 2000, Coast Guard personnel were responsible for ensuring the safety of persons and vessels near the hunt, which included enforcing the moving exclusionary zone around Makah whale hunt vessels. The Coast Guard used helicopters, a cutter, and several utility boats and Zodiacs, and issued citations for negligent vessel operations, MMPA take violations, and violations of the moving exclusion zone (Section 3.14.3.1, Coast Guard). The Coast Guard would likely resume these activities under any of the action alternatives. In addition to participating in law enforcement activities, the Coast Guard would likely be the first to respond to any incidents requiring search and rescue in marine waters, for example, if a vessel capsized due to inclement weather or a collision. The risk of such events occurring would probably be greater under alternatives that restricted whale hunting to winter and spring (i.e., Alternatives 2 and 4), when adverse weather and sea conditions would more likely occur (Section 4.15.2.2, Injury from Boating Accidents). As noted in Section 3.14.3.1, Coast Guard, most search and rescue cases occur during the summer months, when sports fishers and tourists are present in greatest numbers. Under alternatives in which Makah

tribal members could hunt year-round (i.e., Alternatives 3, 5, or 6), therefore, there would be a greater potential for a hunt-related boating incident to occur simultaneously with another incident requiring Coast Guard attention.

The potential for incidents requiring a law enforcement response would likely be similar for all hunt attempts. The risk of hunt-related incidents leading to law enforcement responses that overwhelmed the ability of local law enforcement personnel or facilities to respond would thus depend on the number of days hunting occurred. The severity of the effect on public services could vary according to the time of year the hunts occur. If law enforcement is diverted during periods when demand might be higher (such as during the busier summer season), the consequences of the diversion could be greater.

4.14.2.2 Medical Facilities

As noted in Section 4.15 (Public Safety), hunt-related activities might result in injuries from boating accidents, mishaps with weapons, violence associated with protests, or possible traffic accidents. A sudden influx of persons requiring medical attention could exceed the physical or technical capacities of tribal and other local public health facilities. Additional trauma care facilities are available nearby. They include a Level 3 trauma care facility in Port Angeles and a Level 1-2 facility in Seattle. During the spring 2000 hunt, one protester sustained a shoulder injury and was transported to Port Angeles for medical care (Section 3.15.3.4, Behavior of People Associated with the Hunt).

The potential for injuries requiring medical attention would likely be similar for all hunt attempts, though hunt attempts during inclement weather might increase the risk of boating accidents for both protesters and hunters (Section 4.15.2.2, Injury from Boating Accidents). The risk of injury associated with any given alternative would, therefore, depend mainly on the number of hunt attempts that took place and also on the seasonal restrictions on hunting (that is, the ability of the Tribe to hunt year-round and, therefore, choose hunting opportunities with better weather conditions).

4.14.3 Evaluation of Alternatives

The following sections consider the potential for the alternatives to affect public services in the project area. For each alternative, the discussion addresses the anticipated change in the number of incidents requiring law enforcement intervention and injuries requiring medical attention.

The lowest risk of adverse effects on public services would occur under the No-action Alternative, because no whale hunts would be permitted, and the need for law enforcement and

medical attention in the project area would not be expected to differ from current levels. Under all of the action alternatives, protests and other activities associated with whale hunts would have the potential to divert law enforcement resources from other missions. Hunt-related activities could also result in an increase in the number of injuries, exceeding the capabilities of local health facilities. This potential might be lower under Alternatives 2 and 4 (with an estimated 7-30 days of hunting) compared to Alternatives 3 and 6 (with an estimated 40 days of hunting). In addition, hunting under Alternatives 2 and 4 would be limited to periods when the number of recreational visitors in the project area is comparatively low, reducing the likelihood that hunt-related incidents might occur when public services resources were engaged elsewhere. On the other hand, hunt attempts under Alternatives 3 and 6 would probably occur in better weather conditions, reducing the risk of boating accidents.

Alternative 5 would result in an estimated 20 days of hunting, about the same as Alternatives 2 and 4 (7 to 30 days) and about half as many days as Alternatives 3 and 6. Alternative 5 would also allow hunting year-round, likely resulting in hunts occurring during the summer. Summer hunts would have a reduced risk of boating accidents, but would also occur during a busier time of year when law enforcement and medical services are more likely to be engaged elsewhere.

4.14.3.1 Alternative 1

Under the No-action Alternative, no whale hunt would be permitted, and no whale hunting or associated activities (e.g., protests, law enforcement) would be expected to occur. The need for law enforcement and medical services in the project area would probably not differ from current levels. There would be no potential for injuries or incidents associated with hunt-related activities to overwhelm personnel and facilities or divert resources away from other duties. As under current scenarios, any persons who sustained injuries unrelated to hunt activities exceeding the physical or technical capacities of local public health facilities could be transported to other facilities in the region.

4.14.3.2 Alternative 2

Under Alternative 2, whale hunting would be expected to occur on a total of 7 to 30 days, primarily during April and May. Compared to the No-action Alternative, protest activities associated with whale hunts under Alternative 2 could result in an increased number of incidents requiring law enforcement intervention on those days, possibly diverting law enforcement resources from other missions. If a law enforcement task force were implemented, similar to

previous hunts, protests or other activities would probably not overwhelm the combined personnel and facilities of county, state, federal, and tribal authorities.

Similarly, Alternative 2 could result in injuries requiring medical assistance during the expected 7 to 30 days of hunting. The increased risk of injuries over current conditions under the No-action Alternative could result in an increased risk of exceeding the capabilities of local health facilities. Whale hunting would be limited to the winter and early spring months, outside the period when most search and rescue cases typically occur but also during a period when weather and sea conditions can contribute to boating accidents. If hunt-related activities resulted in injuries that exceeded the physical or technical capacities of local public health facilities, persons requiring medical attention could be transported to other facilities in the region.

4.14.3.3 Alternative 3

Under Alternative 3, no seasonal restrictions would be imposed on whale hunting activities and hunting would be expected to occur on a total of 40 days throughout the year. Compared to the No-action Alternative, activities associated with whale hunts under Alternative 3 could result in an increased number of incidents requiring law enforcement intervention on those days, possibly diverting law enforcement resources from other missions. If a law enforcement task force were implemented, similar to previous hunts, protests or other activities would probably not overwhelm the combined personnel and facilities of county, state, federal, and tribal authorities.

Similarly, Alternative 3 could result in injuries requiring medical assistance during the expected 40 days of hunting. The increased risk of injuries over current conditions under the No-action Alternative could result in an increased risk of exceeding the capabilities of local health facilities. Whale hunting would occur year round, including during the summer period when most search and rescue cases typically occur. If hunt-related activities resulted in injuries that exceeded the physical or technical capacities of local public health facilities, persons requiring medical attention could be transported to other facilities in the region.

Compared to Alternative 2, more opportunities for hunting would be expected to result in a greater number of hunting expeditions, with an attendant increase in the potential for diverting law enforcement resources from other missions, or for causing injuries that require medical attention. Because hunting would be allowed year-round, a greater proportion of hunt attempts would likely take place during summer, when the risk of boating accidents due to inclement weather would be lower than during other times of year. On the other hand, hunting under

Alternative 3 could occur during the busier summer season, when law enforcement and medical services are more likely to be engaged elsewhere.

4.14.3.4 Alternative 4

Alternative 4 would include the same limits on the number of whales harvested as Alternative 2, and include the same hunting season. The additional restrictions contained in Alternative 4 (no hunting within 200 yards of rocks and islands in the Washington Islands National Wildlife Refuges) would not be expected to affect the hunting season or the number of days of hunting. Therefore, any increase in incidents requiring the services of law enforcement or medical personnel are likely to be the same under Alternative 4 as under Alternative 2, compared to the No-action Alternative.

4.14.3.5 Alternative 5

Under Alternative 5, hunting could occur year round, with a likely total of 20 days of hunting. Hunt activities would likely take place during the busier summer season, when law enforcement and medical services are more likely to be engaged elsewhere. Thus compared to the No-action Alternative, under Alternative 5 there is an increased potential for adverse effects on public services during a period of 20 days throughout the year.

Compared to Alternatives 2 and 4, Alternative 5 would probably result in about the same number of days of hunting (20 versus 7 to 30). Under Alternative 5, however, hunts would be likely to occur during the busier summer season, when law enforcement and medical services are more likely to be engaged elsewhere. On the other hand, hunts during the summer would be less likely to result in injuries from boating accidents.

Compared to Alternative 3, Alternative 5 would result in fewer days of hunting (20 versus 40) and therefore fewer occasions on which hunt-related activities might divert law enforcement resources from other missions or result in injuries that require medical attention. Because hunting under either Alternative could occur year-round, each hunting expedition under the two alternatives would have a similar potential to result in boating accidents or to occur during the busy summer season when law enforcement and medical services are more likely to be engaged elsewhere.

4.14.3.6 Alternative 6

Alternative 6 would include the same provisions as Alternative 3 except that hunting would also be allowed in the Strait of Juan de Fuca portion of the Makah U&A. Alternative 6 would be expected to result in the same number of hunting days year round as Alternative 3. The ability to

hunt in the Strait might result in effects in different locations than would occur under Alternative 3. As noted in Section 4.15.3, Public Safety, Evaluation of Alternatives, hunting whales in the Strait would not be expected to pose any additional risks of injury through boating accidents, compared to hunting in the coastal portion of the U&A. Similarly, hunting in the Strait would not be expected to result in any additional potential for law enforcement intervention, compared to Alternative 6 would probably not differ from the potential under Alternative 3 and would have the same effects compared to the No-action Alternative.

4.15 Public Safety

4.15.1 Introduction

This section addresses the potential for a whale hunt and hunt-related activities in the project area to affect public safety. Persons whose safety may be affected by whale hunt-related activities are divided into three groups: hunters and other participants (such as official observers, members of the media, and law enforcement personnel), protesters, and bystanders. Bystanders on the water may include recreational and other boaters; bystanders on land may include Makah tribal members at protests, tourists, or motorists. Individuals from any of these groups could be injured by weapons, boating accidents, or protests and related activities (such as civil disobedience or law enforcement actions). This section examines how the potential for those types of injuries might vary depending on the time of year and location of any hunt and on the frequency of any hunting.

4.15.2 Evaluation Criteria

Three criteria were used to determine the potential for effects on public safety under the alternatives, based on the ways in which injury may occur as a result of any proposed gray whale hunt. These include injuries from weapons (harpoon, rifle or explosive grenade), from boating accidents (including those associated with protest activities on the water), or from land-based protest activities.

With the exception of injuries related to adverse weather or sea conditions, the risk of injury would likely be equal for each hunt attempt. The risk of injury associated with any given alternative would, therefore, depend on the number of days of hunting and the time of year the hunts occur. Table 4-1 identifies the expected number of days of hunting under each alternative. Alternatives under which more hunts would occur would probably result in greater risk of injury to hunters, protesters, and bystanders. Alternatives that limit hunting to the winter and spring period would probably result in greater risk of injury than alternatives that allowed hunting year

round. The following sections discuss the risk of each type of injury for each of the groups that may be affected.

4.15.2.1 Injury from Weapons

Under current conditions, no whale hunting is authorized and no weapons are used in the project area to kill whales. Some level of hunting currently exists but the number of injuries associated with weapons accidents in hunting is unknown. Under any of the action alternatives, hunters and other participants would be at the greatest risk of injury from weapons because they would be handling weapons; protesters and bystanders would experience a lesser risk. The possibility of any persons being struck by a bullet or shoulder-fired explosive projectile would be minimized by proposed safety requirements that would include, among other things, the Coast Guard navigational restrictions (Section 3.1.1.3, Coast Guard Regulated Navigation Area), hunter training, visibility requirements, and a lookout to determine when the shooter would have a clear line of fire at a whale (Section 2.3.3.2.7, Other Environmental Protection Measures).

The risk of injury to any group of individuals from weapons would most likely depend on the number of whales that could be struck. Table 4-1 identifies the number of whales that may be struck under each Alternative. It would also depend on the season during which hunting occurs. Hunts that takes place during the winter and spring months may have the greater potential to result injury from weapons. This is because the limited hunting season would include periods of rougher weather and sea conditions, which might hamper the accuracy of hunters using harpoons, rifles, or explosive projectiles. Less accurate strikes might result in greater risk of injury to hunt participants, protesters, and bystanders.

Hunters and Other Participants

Hunters using a toggle-point harpoon could be cut by the harpoon tip or struck with the shaft. Hunters using either a harpoon or an explosive projectile as the primary weapon for striking the whale could become tangled in the line. Hunters using an explosive projectile either as the primary or secondary hunting weapon (launched either from a darting gun or shoulder gun) could be injured if the grenade exploded prematurely. There would be a greater risk with black powder grenades, where the fuse would be lit before the grenade was fired (Section 3.15.3.5.2, Weapons Associated with the Hunt). The fuse on penthrite grenades would not be lit until the projectile entered the whale, reducing the risk of hunter injury from premature detonation (Section 3.15.3.5.2, Weapons Associated with the Hunt). Hunters using a rifle as the secondary weapon for

killing a whale could potentially be injured from the rifle recoiling or misfiring; hunters could also be struck directly or by ricochet with a .50 caliber bullet.

Weapons also present the potential for injury to other participants, such as members of the media, hunt observers, and enforcement officials. Such individuals could be exposed to many of the same potential injuries from weapons as hunters, but they would be less likely to be injured by a harpoon, premature detonation of grenades, or rifle recoil. Such injuries are more likely to be associated with handling a weapon.

Protesters

Protesters would face a lower risk than hunters of being injured by weapons misfiring, because protesters would not likely be handling weapons. Records of the 1999 and 2000 protests do not show that protesters possessed weapons. Protesters who attempt to interfere with a hunt by positioning their vessels between whales and hunters could be struck by a harpoon, bullet, or explosive projectile. Protesters might also sustain injuries if their vessels were struck by a projectile.

Bystanders

Recreational boaters and other potential bystanders would probably not encounter hunting activities under the action alternatives because of the large size of the hunting area, its remoteness, the presence of the Coast Guard MEZ. Any recreational boaters who encountered hunting activities would likely avoid them. Because they would probably not be near the hunt, bystanders on the water would most likely not be injured by weapons. It is extremely unlikely that bystanders on land would be exposed to injury from weapons under the action alternatives, because any hunt would probably occur hundreds to thousands of yards from shore and the tribe would adhere to weapon discharge procedures (e.g., visibility and shot distances) expected to constrain the area of potential danger to the immediate vicinity of the whale being pursued (Beattie 2001; Graves et al. 2004; Makah Tribe 2005a).

4.15.2.2 Injury from Boating Accidents

Under current conditions, no whale hunts are authorized and no vessel activity associated with whale hunts occurs. There is a considerable amount of commercial and recreational vessel activity in the area, and likely some boating accidents occur, though the current rate is not known. Under any of the action alternatives, boating accidents might result from protest activities on the water, the actions of a wounded whale, or adverse weather and sea conditions. Any type of boating accident could result in traumatic injury, drowning, or hypothermia. The risk of

individuals being injured in a boating accident associated with protester activities would be reduced by the Coast Guard navigational restrictions (Section 3.1.1.3, Coast Guard Regulated Navigation Area); to the extent protesters obeyed those restrictions.

The risk of injury to any group of individuals from boating accidents would most likely depend on the number of days of hunting. Table 4-1 identifies the number of days of hunting expected to occur under each Alternative. It would also depend on the season during which hunting occurs. Hunts that takes place during the winter and spring months may have the greater potential to result injury from boating accidents. This is because the limited hunting season would include periods of rougher weather and sea conditions, which might increase the potential for boating accidents compared to hunts that occur during milder weather and calmer seas. Accidents caused by the behavior of protestors on the water, the behavior of a wounded whale, or as a result of attempting to tow a whale to shore, are considered as boating accidents.

Hunters and Other Participants

Protesters on small vessels, jet skis, and a small submarine accompanied the 1999 and 2000 hunts (Section 3.15.3.4, Behavior of People Associated with the Hunt). Some protesters attempted to interfere with the hunt by placing their vessels between whales and hunting vessels, charging hunting vessels, or harassing whales to make them move away from hunting vessels (Section 3.15.2.4, Behavior of People Associated with the Hunt). This type of vessel operation could cause boating accidents involving hunters or other participants. No hunters or other participants were injured due to actions of protest vessel operators during the 1999 and 2000 hunts.

An injured whale could also cause a boating accident. Once a whale was harpooned, the wounded whale might ram or otherwise strike boats. A harpooned whale might also swamp the canoe by swimming away or diving (Section 3.4.3.5.3, Whale Response to Being Struck). The risk of injury to hunters and other participants by a wounded whale would be reduced by the use of a secondary hunting weapon (either a .50 caliber rifle as proposed or an explosive projectile launched from a darting gun or shoulder gun). This secondary weapon would most likely kill a wounded whale within minutes of a harpoon strike.

A boating accident could also result if boats became unstable, swamped, capsized, or struck other boats, especially during rough weather or high seas conditions. A boat towing a whale to shore could also become unstable because of the size and weight of the whale. This type of risk would be reduced under alternatives in which the Makah could hunt year-round (Alternatives 3, 5, or 6).

Under that scenario, the Tribe would have a greater opportunity to choose hunting days depending on weather and sea conditions.

Protesters

Persons operating vessels engaged in protests would face an elevated risk of injury from boating accidents. As described under Hunters and Other Participants, above, protest vessel operators may place themselves at an elevated risk of injury. For example, in 2000 one jet ski operator entering the MEZ collided with a Coast Guard vessel and sustained a shoulder injury (Public Safety, Section 3.15.3.4, Behavior of People Associated with the Hunt).

An injured whale could also cause a boating accident, as could adverse weather and sea conditions, as described under Hunters and Other Participants. The risk of injury from a wounded whale would probably be lower for protesters than for hunters, as hunters would likely be closer to injured whales. As noted above, the risk of injury from a wounded whale would decline if a secondary hunting weapon were used. Similarly, the risk of boating accidents due to weather and sea conditions would be less under alternatives allowing the Makah to hunt year-round.

Bystanders

As described above in the discussion regarding bystanders and weapons injuries, bystanders on the water probably would not be close enough to the hunting area to be injured in a boating accident related to protest activities or a wounded whale. The potential for recreational boaters to sustain injury due to adverse weather or sea conditions would be independent of the presence or absence of hunt-related activities under any of the alternatives.

4.15.2.3 Injury from Land-based Protest Activities

Under current conditions, no whale hunts are authorized and no whale-hunting protests occur. There are presently no known incidents of other forms of organized civil disobedience in the area. Under the action alternatives, protesters might stage protests on the road leading to the Makah Reservation, on or near the reservation itself, or on the water around the hunt. Potential risks associated with water-based protests are addressed in Section 4.15.2.2, Injury from Boating Accidents. During the 1999 and 2000 hunts, demonstrators on the Makah Reservation exchanged insults with tribal members, including hunters (Section 3.15.3.4, Behavior of People Associated with the Hunt). The risk of individuals being injured as a result of protest activities on land would be minimized by implementation of an enforcement management plan similar to that applied during previous hunts.

The risk of injury to any group of individuals from protest activities would most likely depend on the number of days of hunting. Table 4-1 identifies the number of days of hunting expected to occur under each alternative.

Hunters and Other Participants

Protest activities on land might expose hunters and other participants (including law enforcement personnel) to increased risk of injury. No hunters or other participants were injured during the 1999 and 2000 hunts because of protests on land.

Protesters

Protesters might face an elevated risk of injury from the actions of law enforcement personnel, protesters, or counter-protesters. In one incident during the 1998 practice whale hunt exercise, a protester was pushed from a dock, but did not sustain injury. There was also an instance of Makah youth throwing rocks at protester vessels, causing no injury, but damaging a vessel windshield (Section 3.15.3.4, Behavior of People Associated with the Hunt). No protesters were seriously injured during the 1999 and 2000 hunts because of protests on land.

Bystanders

For this analysis, Makah tribal members and non-members who are not actively engaged as hunt participants are considered bystanders, along with persons who are not engaged in protests. During the 1999 and 2000 protests, some tribal members not involved in the hunt engaged protesters, and there were some altercations, although no one was seriously injured (Section 3.15.3.4, Behavior of People Associated with the Hunt). Bystanders might approach protest scenes as onlookers, or could be drawn into protests, with an attendant increase in the risk of personal injury.

4.15.3 Evaluation of Alternatives

The following sections consider the potential for the alternatives to affect the safety of hunters and other participants, protesters, and bystanders. For each alternative, the discussion addresses the anticipated change in the number of injuries resulting from weapons, boating accidents, or protest activities.

The lowest risk of adverse effects to public safety would occur under the No-action Alternative because no hunting would occur and there would be no associated protest activities. Alternatives 3 and 6), with the greatest number of whales harvested and greatest number of days of hunting, would result in the greatest risk to public safety from weapons, boating accidents, and protest activities, compared to the No-action Alternative. Alternatives 2 and 4 would allow the same

number of whales harvested as Alternatives 3 and 6, but would probably result in fewer days of hunting (20 days versus 40), and therefore less risk of injury from protest activities. Hunting under Alternatives 2 and 4 would be limited to periods of worse weather and rougher seas than Alternatives 3 and 6 and would therefore pose greater risks of injury from weapons and boating accidents. Conversely, the fewer days of hunting under Alternatives 2 and 4 would result in less risk of injury from boating accidents than under Alternatives 3 and 6. Alternative 5 would likely have the least potential for injury of all the action alternatives. Although Alternative 5 would include approximately the same number of days of hunting as Alternatives 2 and 4 (20 days versus 7 to 30), hunting could occur any time of year, creating greater opportunity for the Tribe to choose hunting days with safer weather and sea conditions.

4.15.3.1 Alternative 1

Currently no whale hunting occurs in the project area, so there are no accidents related to whale hunting. Recreational boaters, commercial and recreational fishers, and commercial vessels currently use the project area (Section 3.13.3.2, Marine Vessel Traffic) and there is likely currently some level of injury associated with boating, although the amount is unknown. Hunting also currently occurs in the project area (Table 3-29) and there is likely currently some level of injury from weapons associated with hunting, although the amount is unknown. Under the No-action Alternative, there would be no increased risk of injury to individuals beyond those levels that occur under current conditions.

4.15.3.2 Alternative 2

Under Alternative 2, whale hunting would be expected to occur on a total of 7 to 30 days, primarily during April and May. Up to seven whales could be struck annually under this alternative. Compared to the No-action Alternative (under which there would be no whale-hunt-related injuries), there would be an increased risk of injury from weapons, boating accidents and protest activities in the project area on each day that hunting occurred. Hunting during April and May would include periods of inclement weather and rough sea conditions, which could contribute to accidents involving weapons or boats.

4.15.3.3 Alternative 3

Under Alternative 3, there would be no seasonal restrictions on whale hunting activities and hunting would be expected to occur year round. Up to seven whales could be struck annually under this alternative. Compared to the No-action Alternative, weapon use, boating accidents and

protest activities could result in increased risk of injury to hunters and other participants, bystanders, and protesters.

Compared to Alternative 2 there would be more days of hunting under Alternative 3 (40 versus 7-30) and therefore greater risk or injury from boating accidents and protest activities. Alternative 3 would allow the same number of whales struck as Alternative 2 and therefore would result in the same risk of injury from weapons (although under Alternative 2 it is possible that the restrictions on hunting seasons and harvest of identified whales could make it more difficult to achieve the full harvest level). Conversely, the ability to hunt during better weather conditions under Alternative 3 might reduce the potential associated with each hunt for injury from weapons and boating accidents due to unfavorable weather and sea conditions.

4.15.3.4 Alternative 4

Alternative 4 would include the same limits on the number of whales harvested as Alternative 2, and include the same hunting season. The additional restrictions contained in Alternative 4 (no hunting within 200 yards of rocks and islands in the Washington Islands National Wildlife Refuges) would not be expected to affect the number of whales struck, the hunting season or the number of days of hunting. Therefore, the likely increase in risk of injury to individuals is likely to be the same under Alternative 4 as under Alternative 2, compared to the No-action Alternative.

4.15.3.5 Alternative 5

Under Alternative 5, hunting would likely occur year round, with a likely total of 20 days of hunting. The number of whales struck would be limited to three. Hunt activities would likely take place year round. Thus compared to the No-action Alternative, under Alternative 5 there is an increased risk of injury from weapons, boating accidents and protest activities associated with hunting over 20 days throughout the year and with striking of three whales.

Compared to Alternatives 2 and 4, Alternative 5 would probably result in about the same number of days of hunting (20 versus 7-30) and therefore the same potential for injuries from boating accidents and protest activities. Under Alternative 5, however, fewer whales could be struck than under Alternatives 2 and 4 (three whales versus seven), so there would be less potential for injury from weapons. Alternative 5 would also allow hunting year round, reducing the potential for injury from weapons and boating accidents that could be associated with the worse weather and sea conditions likely under Alternative 2.

Compared to Alternative 3, Alternative 5 would result in fewer days of hunting (20 versus 40) and therefore a lower potential for injuries from boating accidents and protest activities.

Alternative 5 would also result in less risk of injury than Alternative 3 because fewer whales could be struck under Alternative 5 (three whales versus seven). Both alternatives would allow year round hunting, so risks of injury from weapons and boating accidents would not be different based on weather and sea conditions.

4.15.3.6 Alternative 6

Alternative 6 would include the same provisions as Alternative 3 except that hunting would also be allowed in the Strait of Juan de Fuca portion of the Makah U&A. Alternative 6 would be expected to result in the same number of whales struck and the same number of hunting days year round as Alternative 3. The ability to hunt in the Strait, however, might result in effects in different locations than would occur under Alternative 3, compared to the No-action Alternative. Hunting whales in the Strait would not be expected to pose any additional risks of injury from boating accidents or protest activities, compared to hunting in the coastal portion of the U&A. under Alternative 3. Therefore, risks of injuries from these sources would likely be the same under Alternative 6 as under Alternative 3, compared to the No-action Alternative.

If tribal members chose to hunt in the Strait, with the highway running close to the coastline over a portion of this area, risks to bystanders on land from weapons injuries would increase slightly compared to Alternative 3, and thus compared to the No-action Alternative, because of the potential for a stray bullet or grenade. The increased risk would be slight because of the small number of bullets (28) or grenades (21) expected to be fired, the low traffic volumes on the highway, and the safety measures proposed.

4.16 Human Health

4.16.1 Introduction

This section addresses the potential for the alternatives to affect human health of the Makah Tribe in the project area. Three issues pertain to human health and whale hunt-related activities: (1) the potential nutritional benefits associated with consuming whale food products, (2) the potential for exposure to contaminants in food items from whale harvests, and (3) the potential for exposure to food-borne pathogens in food items from whale harvests. Based on the information available for this analysis, all of the alternatives would have a reasonably foreseeable potential to affect human health both positively and negatively. There are too many uncertainties, however, to quantify either type of effect or to predict whether any of the alternatives would result in a net positive or negative effect on human health. The following sections discuss these points in greater detail.

4.16.2 Evaluation Criteria

Three criteria were used to determine the potential for effects on human health. The first is the change in nutritional benefits the Makah Tribe could experience under any of the alternatives. The second is the amount of environmental contamination tribal members might be exposed to as a result of consuming gray whale products. The last is the extent Makah tribal members would be exposed to food borne pathogens as a result of processing and consuming whale products.

4.16.2.1 Nutritional Benefits

As described in Section 3.16.3.1, Nutritional and Health Benefits from Consuming Whale Food Products and Other Traditional Subsistence Foods, marine mammal tissues were an historically important nutritional component of the Makah diet (Renker 2002). Marine mammal tissues, including large whales, contain vitamins, essential elements, and both essential and beneficial polyunsaturated fatty acids (United States Department of Agriculture 2005). These items are present in other foods (e.g., fish, shellfish, nuts, and vegetable oils), but in some cases are present in higher concentrations in marine mammal food products (e.g., polyunsaturated fats). Documented benefits of consuming essential fatty acids present in whale and fish food products include prevention or alleviation of symptoms associated with diabetes, kidney disease, heart disease, hypertension, and other similar health problems (Budowski 1988; Simopoulos 1999; Simopoulos 2002; Holub and Holub 2004; Ebbesson 2005b, c; Reynolds et al 2006). In addition, whale products provide a good source of antioxidants (vitamin E) and selenium, which play a role in protecting against some contaminants (e.g., mercury) (Arnold and Middaugh 2004). Whale-derived food products are a source of minerals and vitamins that have well-documented nutritional benefits to populations consuming them.

There are no specific studies that compare the types and concentrations of nutrients in food products obtained from the drift whales occasionally consumed by the Makah with those found in the fresh gray whale food products that would be available to them under Alternatives 2 through 6. Whether consuming freshly harvested gray whale food products would affect the level of nutrition available to Makah tribal members would depend largely on the types and levels of nutrition present in an individual tribal member's existing diet relative to several factors: (1) what part(s) of the whale and how much of each would be consumed, (2) what currently consumed food items (and associated nutritional levels) would be replaced by gray whale food products, and (3) how each food item would be collected, stored, and prepared for consumption. None of this information is currently available.

4.16.2.2 Environmental Contaminants

As described in Section 3.16.3.2, Environmental Contaminants in Gray Whales, gray whale tissues contain chemical contaminants that Makah tribal members would be exposed to if they consumed fresh gray whale food products generated from a successful hunt. Similar contaminants are present in the foods that Makah tribal members typically consume, including fish and shellfish from the project area as well as store-purchased food products. There are no data to compare the amount of contaminants currently being consumed by the Makah Tribe from its normal food sources with the amount of contaminants found in fresh whale products, making it difficult to determine the net change in contaminants to which tribal members would be exposed. Furthermore, data do not exist to indicate the amount of fresh whale food products an individual Makah member may consume in lieu of other food sources normally consumed by the same individual. As a result of this lack of data, it is not possible to discern risk levels based upon the existing best available information addressing the rate of consumption and method of cooking fresh whale tissues by Makah tribal members.

There are no specific studies that compare the types and concentrations of contaminants in food products obtained from the drift whales occasionally consumed by the Makah with those found in the fresh gray whale food products that would be available to them under Alternatives 2 through 6. Whether consuming freshly harvested gray whale food products would affect contaminant exposure in Makah tribal members would depend largely on the types and levels of contaminants present in an individual tribal member's existing diet relative to several factors: (1) what part(s) of the whale and how much of each would be consumed, (2) what currently consumed food items (and associated contaminants) would be replaced by gray whale food products, (3) the age and sex of the whale, (4) possibly the time of year and body condition of the whale, and (5) how each food item would be collected, stored, and prepared for consumption. None of this information is currently available.

4.16.2.3 Exposure to Food-Borne Pathogens

As described in Section 3.16.3.3, Exposure to Food-Borne Pathogens, exposure to food-borne pathogens might result from improperly handled food items. While exposure to pathogens associated with the consumption of whale products has been documented, it is not unique to consumption of whale food products. Pathogenic organisms (e.g., bacteria, viruses, and parasites) are common in other subsistence and store-purchased foods such as seafood, poultry products, meat products, dairy products, and vegetables. Any of these products could cause illness if they were improperly butchered, stored, or prepared. Thus under current conditions, there is some

degree of risk to Makah tribal members of contracting food-related illness from exposure to pathogens. Changes in the quantity of freshly harvested whale consumed would probably not appreciably change the potential for food-borne illness to occur in Makah tribal members, assuming they followed the same general food storage and preparation practices for whale products as for other food products.

4.16.3 Evaluation of Alternatives

Three evaluation criteria were used to compare the alternatives relative to human health: (1) potential change in the level of exposure to contaminants, (2) potential change in the level of exposure to food-borne pathogens, and (3) potential change in the nutritional composition of the diet of Makah tribal members associated with consuming freshly harvested gray whale food products. The following sections contain discussions of these criteria for each alternative.

4.16.3.1 Alternative 1

Under the No-action Alternative, no Makah gray whale hunt would be permitted. Thus, Makah tribal members would not have access to or consume freshly harvested whale food products. Under this alternative, no change in the exposure to contaminants or food-borne pathogens or the nutritional composition of the diet from foods consumed by the Makah Tribe would be expected. The continued absence of freshly harvested gray whale food products in the diet of the Makah would continue to preclude them from realizing the added nutritional benefits (e.g., minerals and omega-3 fatty acids) associated with consuming them, but there are no data to suggest that current diets of individual Makah members sufficiently lack these nutritional benefits. For example, the omega-3 fatty acid benefits of whale products (e.g., prevention of heart disease and glucose intolerance) may be adequately realized by tribal members from other food sources. Overall, there is insufficient information to conclude that the lack of fresh whale products under the No-action Alternative would not be expected to alter dietary conditions for any tribal member.

4.16.3.2 Alternatives 2, 3, 4, 5, and 6

Unlike conditions under the No-action Alternative, Alternatives 2, 3, 4, 5, and 6 would allow the Makah Tribe to conduct gray whale hunts in the project area, and it is assumed that consumption of freshly harvested gray whale food products would occur. Based on Section 4.16.1, Introduction, it is impossible to predict the precise changes in exposure to contaminants or food-borne pathogens or the nutritional composition of the Makah diet if they have the opportunity to consume freshly harvested whale food products. In general, no substantial changes in the type of exposure to contaminants or food-borne pathogens by the Makah would be expected under any of

the action alternatives; the level of exposure to these contaminants would, however, be unknown. Consumption of freshly harvested gray whale food products may temporarily increase the overall nutritional value of the Makah diet by raising the proportion of certain minerals and omega-3 fatty acids if diets currently lack this benefit. Omega-3 fatty acids have been shown to positively affect glucose tolerance and insulin sensitivity in Alaska Natives (Ebbesson et al. 2005b; Ebbesson et al. 2005c). This relative nutritional increase would occur only as long as whale products were available for consumption and would be greatest under Alternatives 3 and 6 and lowest under Alternative 5.

4.17 National and International Regulatory Environment

4.17.1 Introduction

This section evaluates the potential for the six alternatives to influence the future decisions of parties other than the Makah to seek or not seek an MMPA waiver to take marine mammals and/or a WCA quota to take whales resulting in increased take of marine mammals. It also evaluates the potential for the alternatives to influence the future positions or actions of other countries in the IWC arena or their actions in managing whale hunting by their nationals. Finally, it evaluates the potential for the alternatives to influence the behavior of other countries towards indigenous people within their borders.

4.17.2 Evaluation Criteria

To examine the potential effects on marine mammals nationally, analyses in this section address the potential for changes in the number of requests for waivers under the MMPA and/or quota allocations under the WCA. Potential effects on whales worldwide are examined through an assessment of the potential for changes in whaling activities. Potential effects on indigenous people worldwide are examined through an assessment of increased or decreased opportunities to pursue ceremonial and subsistence practices. The following sections further discuss these evaluation criteria and the likelihood of changes in the regulatory environment under the six alternatives.

4.17.2.1 Marine Mammals Nationally

NMFS' waiver of the moratorium and issuance of regulations and permits for the Makah to hunt in compliance with the 9th Circuit decision in *Anderson v. Evans* (2004) under Alternatives 2 through 6 has the potential to lead to additional requests for MMPA waivers from non-Indians or Indian tribes, and ultimately to the federally-authorized take of additional marine mammals.

NMFS' actions under Alternatives 2 through 6 could also lead to additional requests for a quota under the WCA by those claiming aboriginal subsistence whaling rights.

4.17.2.1.1 Increased Take of Marine Mammals by Non-Indians

Section 101(a)(3)(A) of the MMPA directs the Secretary to determine whether and by what means it is compatible with the Act to waive the moratorium and allow taking of any marine mammal. In the history of implementation of the MMPA there have been few requests to the Secretary of the Interior or the Secretary of Commerce to waive the MMPA take moratorium. Section 3.17.3.1, Waivers of the MMPA Take Moratorium, details examples of past waiver requests. Given that history and the substantive requirements, the time and process involved, NMFS considers it unlikely that a successful request by the Makah Tribe would influence non-Indian parties in the United States to seek additional waivers. For example, Alaska's request for a waiver for 10 species resulted in a 1976 waiver for walruses. There is no evidence that the success of the walrus request resulted in additional requests from other states seeking management authority. For the same reasons, NMFS considers it unlikely that a decision under the No-action Alternative to deny the Makah's request would decrease the number of future requests by non-Indians for waivers of the MMPA take moratorium. If NMFS' authorization of a hunt under Alternatives 2 through 6 did lead to additional waiver requests, the outcome of any process to consider them would depend on a number of facts that are not presently known, making it speculative to conclude that the harvest of marine mammals nationally would increase as a result of implementing Alternatives 2 though 6.

4.17.2.1.2 Increased Take of Marine Mammals by Indian Tribes

NMFS recognizes that some Northwest Indian tribes traditionally harvested and used products from seals, sea otters and other marine mammals. Northwest Indian tribes have in the past expressed an interest in harvesting marine mammals (Schmitten 1994). Additionally some tribes may continue to believe and assert that their treaty rights to take marine mammals are not subject to the MMPA. A successful completion of the authorization process in response to the Makah in this waiver request may influence these other Indian tribes in the Northwest and nationally to seek waivers of the moratorium to take marine mammals. The outcomes of any future processes would depend on facts not presently known, but it is possible that implementation of Alternatives 2 through 6 could lead to increased federally authorized take by other Indian tribes. With respect to the No-action Alternative, it is uncertain whether a decision by NMFS to deny the Makah Tribe's request would result in less harvest of marine mammals by Indian tribes in the future.

4.17.2.1.3 Increasing Aboriginal Subsistence Whaling and Harvest of Whales

Aside from Indian tribes and Alaska Natives, NMFS is not aware of other entities in the United States that could claim aboriginal status to pursue whaling under the WCA. Alaska Natives have received WCA allocations for bowhead whales since 1978. The Makah Tribe formally expressed interest in resuming a gray whale hunt starting in 1995 (Makah tribal Council 1995a). NMFS first published a WCA quota for their use in 1998 (63 FR 16701, April 6, 1998). The 1998-2002 gray whale catch limit in the Schedule was revised to include Makah's aboriginal subsistence whaling (Section 1.2.4.1.3, IWC Aboriginal Subsistence Whaling). Although it has been over 29 years since the Alaska Natives first received a WCA allocation, and over nine years since the Makah received theirs, no other Indian tribe or Alaskan native has requested an allocation or inquired about receiving an allocation for whales under the WCA. This history suggests that beyond the Makah there is little need or interest by other native groups to seek take of gray whales. Accordingly, NMFS considers it unlikely that publishing a WCA gray whale quota for the Makah's use under Alternatives 2 through 6 would influence other Indian tribes to seek WCA quotas, eventually leading to the harvest of other whale species in other aboriginal subsistence whaling operations. In any event, any WCA quota issued would be subject to the IWC catch limit. And before NMFS could publish a WCA quota, it would also be required to present a needs statement to the IWC. The outcome of that process would depend on facts not currently known and the outcome is therefore uncertain.

With respect to No-action Alternative, it is unlikely that a decision by NMFS to deny the Makah Tribe's request would result in fewer requests for WCA allocations from Indian tribes in the future.

4.17.2.2 Worldwide Whaling

In addition its ruling regarding the MMPA, the court in *Anderson v. Evans* (2004) also ruled that NMFS should have prepared an EIS rather than an EA for its past Makah whale hunting proposal, finding that

> the agencies' [sic] failure to consider the precedential impact of our government's support for the Makah Tribe's whaling in future IWC deliberations remains a troubling vacuum. We conclude that the possible impact on the heretofore narrow aboriginal subsistence exception supports our conclusion that an EIS is necessary.

Public comments also expressed concern that NMFS' approval of Makah whale hunting could lead to increased whaling by weakening United States leadership in whale conservation or strengthening the position or resolve of whaling proponents.

The United States' negotiating position before the IWC is not subject to NEPA review (although an opportunity for public review is available, as described in Section 1.2.4.1.4, United States' IWC Interagency Consultation). Once the IWC amends its Schedule, NMFS implements that decision domestically by publishing an aboriginal subsistence whaling quota and entering into a cooperative agreement with the Tribe (Section 1.2.4.2, National Whaling Governance under the WCA). Pursuant to the *Anderson v. Evans* decision, to authorize this gray whale hunt NMFS also must decide whether to waive the take moratorium under the MMPA, and issue necessary regulations and permits (Section 1.2.3, Marine Mammal Protection Act). These decisions by NMFS are subject to NEPA review, which is provided through this EIS. NMFS' decision under the WCA and MMPA in response to this request may have the potential to influence the positions or actions of the United States and others regarding whaling worldwide. This analysis addresses the potential for NMFS' authorization of Makah whale hunting pursuant to this request to increase whaling worldwide by weakening the United States' ability to oppose commercial and scientific whaling in the international arena, by emboldening other countries to pursue whaling, or by expanding the interpretation of what constitutes aboriginal subsistence whaling.

Since the early 1970s the United States has consistently supported the moratorium on commercial whaling and insisted on safeguards before any whaling can resume. The United States has also opposed lethal scientific whaling. To support its position the United States has cited management concerns, rather than a philosophy that all whaling of any kind should be banned. Throughout the period of time the United States has opposed commercial and scientific whaling, it has supported aboriginal subsistence whaling, for example by proposing and defending bowhead catch limits on behalf of Alaska Natives. For these reasons, it is unlikely that NMFS' actions to either deny the Makah request (Alternative 1- No-action) or grant the Makah some level of hunting (Alternatives 2 through 6) would change the United States' position on commercial and scientific whaling or its ability to actively pursue its position.

It is also unlikely that NMFS' actions on the Makah request would effectively be used by other countries to obtain bargaining leverage. Though Japan attempted to use the United States' bowhead request in 2002 as influential evidence in its pursuit of small type coastal whaling, there is no evidence that this move led to a fundamental change in United States position that in turn led to a change in whaling. There is also no evidence that whaling proponents such as Japan would use the United States' authorization of a Makah hunt as a bargaining tool. It is more likely that the outcome of Japan's requests for small-type coastal whaling, or the pro-whaling nations' efforts to remove the moratorium on commercial whaling, depends on the balance of power in the

IWC rather than on bargaining maneuvers like those that took place in 2002 over the bowhead catch limit. The fact that Japan and the other pro-whaling countries supported the ENP gray whale catch limit even as they were opposing the bowhead catch limit in 2002 undercuts the argument that pro-whaling countries would use the Makah hunt to obtain bargaining leverage (3.17.3.2.3 Aboriginal Subsistence Whaling). In 2007, bowhead and gray whale aboriginal subsistence catch limits were revised by consensus at the annual meeting of the IWC (Section 1.4.1.2.1, Relevant Overview of Requests for Bowhead Whales on Behalf of Alaska Eskimos, and Section 1.4.1.2.2, Overview of Requests for ENP Gray Whales on Behalf of the Makah).

There is a potential that NMFS' authorization of a Makah whale hunt under Alternatives 2 through 6 would embolden pro-whaling nations to authorize whaling by their nationals that they might not otherwise have authorized. Pro-whaling nations have argued that all whale-killing should be treated equally, limited only by principles of sound science and management. These nations could argue that the resumption of whale-killing by the Makah justifies an increase in other types of whaling. Moreover, the ability of aboriginal subsistence whalers to sell handicrafts made from inedible parts (which is included in Alternatives 2 through 6) has been used by pro-whaling nations to characterize aboriginal hunts as 'commercial' and to argue that there is no difference between this type of commerce and commerce in meat or blubber. However, this argument has been made even in the absence of a Makah hunt. NMFS considers it unlikely, however, that an authorization of a gray whale harvest by the Makah Tribe under Alternatives 2 through 6 would make an important difference in the probability of pro-whaling nations increasing their commercial or scientific whaling operations. The United States' ongoing support of the Alaska Native aboriginal subsistence hunt, and its support of other such hunts within the IWC, have placed it firmly in the company of nations supporting aboriginal subsistence whaling, even while having a history of opposing a resumption of commercial whaling and high levels of scientific whaling such as that carried out by Japan.

There is also a potential that NMFS' potential authorization of a Makah whale hunt under Alternatives 2 through 6 would be viewed as an expansion of the definition of aboriginal subsistence whaling, leading to increased requests at the IWC for aboriginal subsistence whaling and ultimately an increase in whaling within that category. One distinction between Makah whale hunting and other aboriginal subsistence hunts approved by the IWC is the Tribe's 70- to 80-year hiatus in whaling. There is the possibility that pro-whaling nations would use a perceived expansion of the definition to bolster their requests for whaling operations that have characteristics similar to aboriginal subsistence whaling, but differ in some way. Japan's argument that small-type coastal

whaling is similar to aboriginal subsistence whaling is an example of how an IWC party might use Makah whaling to support its desired whaling operations. However, this argument has been made even in the absence of a Makah hunt. While there is evidence that pro-whaling parties within the IWC will use the authorization of any whaling activities, including a Makah hunt for gray whales, to support their efforts to receive approval for their proposed whaling operations, there is no evidence that such a tactic would lead to the commercial moratorium being lifted, or to an increase in whaling worldwide. Language adopted by the IWC when the joint United States-Russian Federation request was first approved referred to "aborigines whose traditional aboriginal subsistence and cultural needs have been recognized," suggesting the possibility that each IWC party was free to recognize the subsistence and cultural needs of its aborigines (IWC 1998).

NMFS examined the history of whaling within the IWC to aid its analysis of the potential for United States approval of the Makah request to lead to future increases in whaling. Figures 4-1 through 4-3 depict whale harvests since 1985, in total and by species, in commercial, scientific, and aboriginal subsistence whale hunts. Generally, the figures show a steep decline in commercial harvest following Japan's withdrawal of its objection to commercial harvest (after the 1987/1988 season), a steady increase in scientific whaling following Japan's withdrawal of its objection, and a drop in aboriginal subsistence harvest of minke and gray whales through the early 1990s, followed by an increase. NMFS calculated the trend for each type of whaling for the period before and after the first request that the United States made on behalf of the Makah at the IWC meeting in 1996 (1985-1996, and 1997-2005, respectively) to test whether there is a correlation between United States' actions on behalf of the Makah and whaling worldwide. As shown in Figures 4-1 through 4-3, for each type of whaling there is a significant difference in the trend before and after 1996.

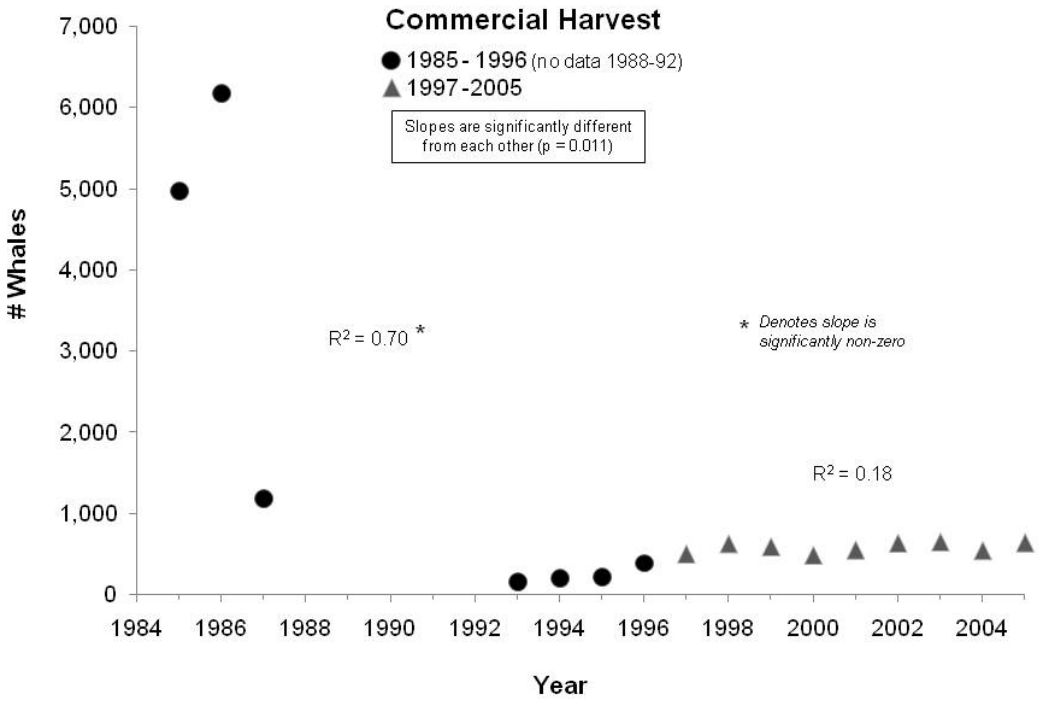

Figure 4-1. Trend Analysis for Commercial Harvest before and after 1996

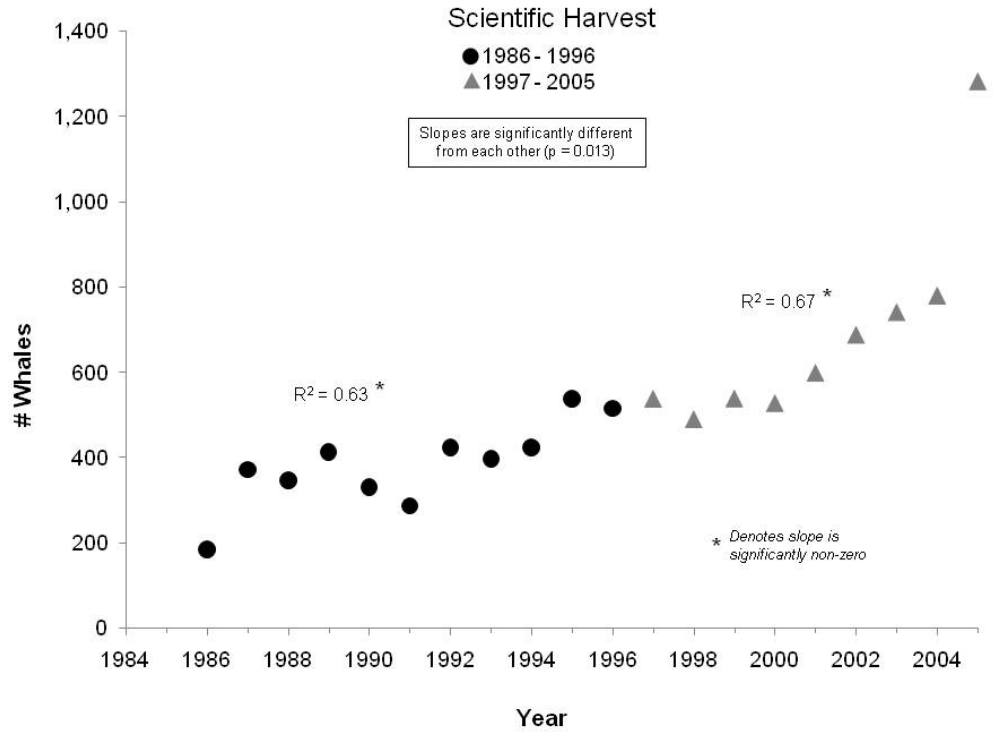

Figure 4-2. Trend Analysis for Scientific Whaling before and after 1996

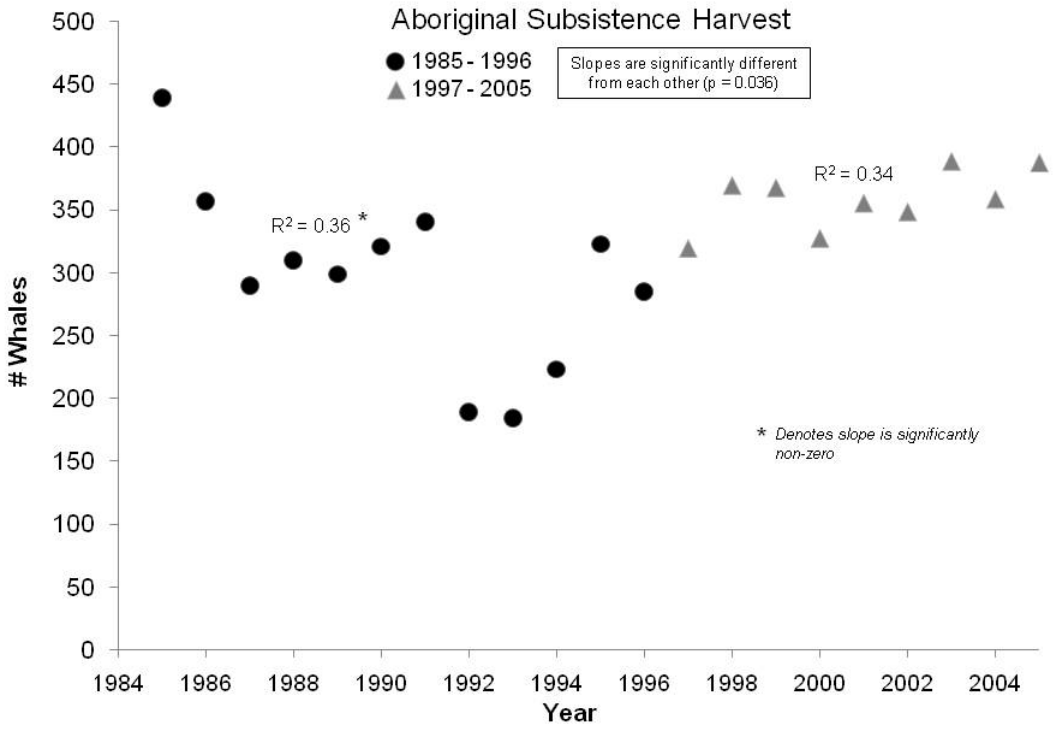

Figure 4-3. Trend Analysis for Aboriginal Subsistence Whaling before and after 1996

While a simple representation of these trends suggests there may be a correlation between the Makah request and increased whaling activity for every type of whaling, other information suggests this is not the best interpretation of the data. For each type of whaling, there was an increasing trend that began well before 1996. For scientific whaling, that increasing trend began in 1985; for commercial whaling it began in 1993; and for aboriginal subsistence whaling it began in 1992. As Tables 3-47 through 3-49 illustrate, the increases in commercial and scientific whaling reflect increased harvest of minke whales, while the increase in aboriginal subsistence whaling reflects increased harvest of minke and gray whales. The increased harvest of minke whales in Norway's whaling, which began before 1996, likely reflects the view by Norway that harvest should be allowed of abundant stocks that can sustain harvest. The increased harvest of minke whales in Japan's scientific whaling, which also began before 1996, reflects a change in its research program. This increase has occurred even in the absence of NMFS' authorization of a Makah hunt.

NMFS' decision to authorize or deny the Makah request may have a minor effect on some of the dynamics of the international debate regarding whaling. It is too speculative to conclude, however,

that those effects would lead to an increase in whaling worldwide, given the constantly shifting dynamics within the IWC, the legislative nature of IWC decision-making, and the numerous factors any country must consider when it authorizes hunting.

4.17.2.3 Indigenous People Worldwide

NMFS' denial of the Makah request under Alternative 1 (No-action Alternative) may have the potential to diminish the ability of indigenous people worldwide to pursue ceremonial and subsistence practices, by setting an example that would encourage other countries to prohibit or interfere with such practices. Conversely, if NMFS authorizes the Makah to hunt gray whales under Alternatives 2 through 6 it may encourage other governments to allow indigenous people worldwide to pursue ceremonial and subsistence practices, thereby increasing the ability of indigenous people to engage in such practices.

The United States considers its role regarding such rights to be one of leading by example, guaranteeing civil freedoms to all its citizens through legally prescribed processes. If NMFS provides a full consideration of the Makah request, with due process, and makes a decision that complies with the *Anderson v. Evans* court decision and other relevant law, that would be consistent with the United States' position in the international arena that indigenous people should be governed by domestic laws, and that those laws should include processes for protecting civil freedoms. Moreover, it is not clear that other countries would necessarily consider or look to the ultimate outcome of the United States' process in deciding whether to prohibit related or unrelated indigenous practices.

4.17.3 Evaluation of Alternatives

The following sections consider the potential for the alternatives, to influence the future positions or actions of other countries in the IWC arena or their actions in managing whale hunting by their nationals and to influence the behavior of other countries towards indigenous people within their borders.

Under Alternatives 2 through 6, NMFS would authorize the Makah whale hunting by waiving the take moratorium, promulgating regulations, and issuing permits under the MMPA, and publishing aboriginal subsistence whaling quotas for the Makah Tribe's use and entering into a cooperative agreement under the WCA. Under the No-action Alternative, NMFS would not authorize any whale hunt under either the MMPA or the WCA.

4.17.3.1 Alternative 1

Under the No-action Alternative, NMFS would not authorize a gray whale hunt by the Makah Tribe. It is unlikely this action would change the United States' negotiating position in the IWC regarding commercial, scientific or aboriginal subsistence whaling, or the ability of the United States to influence debates in the IWC. It is also unlikely this action would change the ability of indigenous people worldwide to pursue ceremonial and subsistence practices, so long as NMFS' process and decision are consistent with the *Anderson v. Evans* court decision and other applicable law and demonstrate the integrity of the process. The relationships between indigenous people and their governments are affected by numerous factual considerations. It is unlikely that NMFS' denial of the Makah Tribe's request to harvest up to five whales annually would influence the complicated decisions made by other governments regarding ceremonial and subsistence practices of indigenous people.

4.17.3.2 Alternatives 2 through 6

It is uncertain whether NMFS' action to authorize a gray whale hunt would increase whaling worldwide by emboldening pro-whaling countries. While such an outcome is possible, it is speculative given the variety of issues and dynamics that drive the decisions of the IWC or of countries party to the IWC.

Similar to the No-action Alternative, it is unlikely this action would change the ability of indigenous people worldwide to pursue ceremonial and subsistence practices, so long as NMFS' process and decision are consistent with the *Anderson v. Evans* court decision and other applicable law and demonstrate the integrity of the process. The relationships between indigenous people and their governments are affected by numerous factual considerations. It is unlikely that NMFS' authorization of a Makah gray whale hunt would influence the complicated decisions made by other governments regarding ceremonial and subsistence practices of indigenous people.

Chapter 5
Cumulative Effects

5.0 CUMULATIVE EFFECTS

5.1 Context for Analysis

The National Environmental Policy Act (NEPA) defines cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7). Section 3.0, Affected Environment, described the current status of each resource, which reflects the effects of past and current actions. Section 4.0, Environmental Consequences, evaluated the effects of the Makah Tribe's proposed hunt and the alternative actions on the current status of each resource. This section now considers the cumulative effects of each alternative on each resource, in the context of the effects of past actions, current conditions, and reasonably foreseeable future actions and conditions.

The Olympic coast is sparsely populated, with almost the entire coastline being undeveloped (Section 3.1.1.1, Olympic Coast National Marine Sanctuary). Most of the project area lies within the Olympic Coast National Marine Sanctuary, and most of the coast is either wilderness (part of the Olympic National Park) or tribal land (Figure 1-1). The only projected development in the area of which NMFS is aware is the Makah Bay Wave Energy Pilot Project (Section 3.4.3.6.10, Marine Energy Projects). The project has been licensed to operate for five years (FERC 2007a), and will involve four buoys deployed about 3.7 miles from shore in the Makah U&A. Each buoy will be tethered by a cable to four surface floats (approximately 4 feet in diameter) and each float will be connected by a cable to a subsurface anchor buoy just above the seafloor. All cables in the anchoring system will be under tension. A transmission cable will connect the buoys to a transmission station on land. This cable will lie along the ocean floor until it reaches a depth that is 10 to 30 feet below mean lower low tide, at which point it will be placed underground until it reaches the station. At this time the applicant has no definitive plans for future expansion of the project (AquaEnergy 2006). It is conceivable that expansion will be proposed in the future. In that event, the applicant "would initiate a new round of acquiring necessary permits or amendments and would engage in additional environmental review" (AquaEnergy 2006). Prior to issuing the license for the project, FERC issued an Environmental Assessment (EA), which examined its potential environmental consequences (FERC 2007b). The following discussion draws on this document.

The other future activity with the potential to affect some of the resources project area is the projected growth of shipping into Puget Sound, which will increase the number of container ships traversing the Strait of Juan de Fuca. Approximately 4,500 vessels annually traversed the Strait of Juan de Fuca during 2002 through 2004 (Table 3-40). The Washington Ports Association projects a 4 percent annual growth rate of container shipping into Puget Sound through 2025. Container ships in the Strait are controlled by the Coast Guard's vessel separation scheme (3.6.3.1.4, Commercial Shipping). Alternative 6 would allow the Makah Tribe to hunt in the entire Makah U&A, including the Strait of Juan de Fuca, year-round. Vessel activity associated with hunting would therefore be added to a volume of vessel traffic that is projected to increase in the future.

In addition to future actions in the project area, future actions along the entire coast have the potential to affect gray whales because of their migration patterns. Projections for the future of shipping coastwide are uncertain due to concerns about fuel prices and the capacity of west coast ports to accommodate increased volumes (White 2008). There are several proposals by various entities to develop ocean energy projects all along the Pacific coast (Section 3.4.3.6.10, Marine Energy Projects). At this time these projects are in the preliminary stages of study and design, and it is difficult to predict how many will ultimately be deployed and in what configuration. Consequently, an analysis of the impact of the action alternatives on gray whales or other wildlife, when added to the effects of future ocean energy projects, would be speculative, or not possible without project details available to analyze.

5.2 Water Quality

As described in Section 3.2.3, Water Quality, Existing Conditions, Ecology has not listed any of the waters in the project area as impaired (in other words, no past or current actions are negatively affecting the quality of waters in the project area to the point that they are impaired). None of the alternatives would have more than a negligible impact on water quality. The EA for the Makah Bay wave energy project concluded that it would have only localized and short-term impacts on water resources (FERC 2007b). Increased vessel traffic could increase the risk of oil spills in the Strait. It is likely, however, that the amount of oil from a potential spill associated with a gray whale hunt would be small because of the size of vessels involved, and would quickly disperse (Section 4.2.3.2-4.2.3.6, Water Quality, Alternatives 2-6). Compared to the volume of oil associated with an oil spill from a cargo vessel, the volume of oil potentially spilled during a Makah gray whale hunt in the Strait of Juan de Fuca under Alternative 6 would represent a minor

contribution to the overall risk in the Strait. For these reasons, no cumulative effects are anticipated on water quality.

5.3 Marine Habitat and Species

As described in Section 3.1.1.1.2, Designation and Regulatory Overview, the marine and coastal environment of the northern Washington coast is a highly productive and nearly pristine. As described in Section 3.3.3, Marine Habitat and Species, Existing Conditions, the marine habitat and species in the project area are shaped by large-scale physical processes that would not be affected by any hunting or associated activities under any of the alternatives. In addition, hunting activities under any of the alternatives would have only minor short-term localized impacts on the marine habitat or species in the project area. The EA for the Makah Bay wave energy project examined potential impacts on fish, invertebrates, and marine vegetation in the project area. It concluded that no fish or invertebrates were likely to be entrapped in the buoys; installation of the project would result in a temporary localized disturbance of fish and invertebrates; the small footprint of the mooring buoys and the placement of the transmission cable on silt and sand (rather than rocky areas) would result in little or no disturbance of fish species, invertebrates, and marine vegetation; and the underground placement of the transmission cable in the nearshore area would limit disturbance of the nearshore benthic environment (FERC 2007b).

The FERC EA includes a variety of protective measures to reduce any potential impacts to marine habitats and species, including: developing a fuel and oil spill control, prevention, and countermeasures plan; developing and implementing a plan to conduct a baseline and post-installation hard substrate benthic community survey along the proposed submarine transmission line route; removing existing marine debris and derelict fishing gear from the immediate project area prior to project construction and installation. The minimal effect on marine habitat and species from any of the alternatives examined in this analysis, combined with minimal effects from the Makah Bay wave energy project, are unlikely to have cumulative effects on marine habitat and species.

5.4 Eastern North Pacific Gray Whale

Section 3.4.3, Eastern North Pacific Gray Whale, Existing Conditions, describes the life history and current status of ENP gray whales. The ENP stock of gray whales is recognized by the International Whaling Commission (IWC) and NMFS as a single stock without subpopulations or management units. It also describes the dynamic use of the southern portion of the whales'

summer range by individual whales, some of which return to areas within this southern portion in multiple years. Section 4.4, Environmental Consequences, Eastern North Pacific Gray Whales, considers the potential impacts of the six alternatives on the ENP gray whale stock as a whole, gray whales in local survey areas, and individual gray whales.

For the ENP gray whale stock as a whole, past over-harvesting led to its depletion and listing in the United States as an endangered species. With the moratorium on commercial harvest, the stock recovered to the point where it was de-listed. NMFS considers the stock to currently be at or near its carrying capacity and so within its OSP. NMFS estimates the ENP gray whale stock can sustain the harvest of 417 whales per year and still remain within its optimum sustainable population (OSP) level. All six alternatives are likely to have the same effect on the ENP gray whale stock as a whole, which is a removal of an average of 124 whales per year (zero to five whales killed by Makah hunters with the remainder harvested in the Chukotkan hunt). This level of mortality would be added to other sources of mortality that include whales that are killed by ship strike, whales that are killed incidental to fishing operations, and whales that are struck and lost and may die as a result of their injuries.

Angliss and Outlaw (2008) estimate that about seven whales die annually in United States commercial fisheries, and one dies annually from ship strike. Data regarding gray whale mortalities in Canadian fisheries are not readily available. However, they are thought to be small and the large stock size and rate of increase over the past 20 years makes it unlikely that unreported mortalities from those fisheries would be a significant source of mortality for this stock (Angliss and Outlaw 2008). The number of whales struck and lost in the Chukotka hunt has varied annually, with nine reported in 2005 as the highest recent reported number. Assuming all struck and lost whales die, the number of whales potentially lost from all sources of human-caused mortality would be approximately 141. That number is only one-third of the calculated PBR for the ENP gray whale stock. The cumulative effects of human-caused mortality would not affect the ability of the ENP gray whale stock as a whole to be maintained at its OSP level.

In the future, the ENP gray whale stock as a whole, and particularly gray whales in the Strait of Juan de Fuca portion of the Makah Tribe's U&A, may be affected by the projected increases in shipping through the Strait. Given the small number of gray whales estimated to be killed by ship strike throughout their entire range, as described above, it is unlikely there would be more than a minor increase in the risk of ship strike in the Strait in the future. Therefore, under Alternative 6

(which allows hunting in the Strait), only minor cumulative impacts to gray whales in the Strait of Juan de Fuca would be expected as a result of increased shipping.

Another future development with the potential to affect the ENP gray whale stock as a whole, and particularly gray whales in the Makah U&A, is the proposed wave energy projects described in Section 3.4.3.6.10, Marine Energy Projects. These projects have the potential to result in serious injury or death of migrating or summer-feeding whales. Before any of these projects are licensed, they must undergo a permitting process that would consider their effects on ENP gray whales (as was done with the permit issued for the pilot project in Makah Bay).

As analyzed in FERC's EA (FERC 2007b), the Makah Bay wave energy project would pose only minor or localized risks to gray whales. Identified potential risks to marine mammals include noise effects, disturbance from or collisions with construction and maintenance vessels, electromagnetic fields effects on marine behavior and migration, collision with mooring and anchor lines/cables, and entanglement with the buoy mooring system and transmission cable. The likelihood of a ship strike with marine mammals is considered low because of the small amount of vessel traffic and slow speeds that would occur during construction, (FERC 2007b). Because of the small area occupied by the project relative to vastness of the open ocean, the potential for marine mammals to encounter the buoy array is also considered small. Similarly, entanglement is also deemed unlikely because cable tension should avoid forming loops, and cable spacing is wide enough apart for animals to pass through. Disturbance from noise (primarily vessel traffic during construction) is expected to be minimal and short term, and will likely be dampened by the effect of surf and substrate. In addition, the FERC EA (FERC 2007b) includes a variety of protective measures to reduce potential impacts to marine mammals, including: using observers during cable laying activities, biannual anchor inspections, keeping a standby vessel to assist entangled animals, and monitoring for entanglement, collisions, and cetacean acoustics. Therefore, no cumulative effects to gray whales are anticipated as a result of the Makah Bay wave energy project, when combined with effects under any of the alternatives considered here. Several additional ocean energy projects are proposed along the gray whales' migration route (Section 3.4.3.6.10, Marine Energy Projects), which if developed could affect migrating gray whales. At this time it is unknown whether or how such projects might be deployed. Thus, although ocean energy projects arrayed along the west coast could negatively affect the abundance of the gray whale population as a whole, there is insufficient information at this time to evaluate potential cumulative effects. The Scientific Committee of the IWC annually monitors the status of ENP gray whales. In the event that gray whale abundance declines as a result of the

development of ocean energy projects (or any other future developments), the IWC has a process in place to adjust catch limits every five years for aboriginal subsistence hunting (Section 1.2.4.1.3, IWC Aboriginal Subsistence Whaling).

Ocean energy projects could have a greater impact on summer-feeding whales in the PCFA survey areas than on the ENP gray whale stock as a whole because the summer-feeding whales spend more time along the west coast. If ocean energy projects negatively affect the abundance of gray whales identified in the ORSVI survey area, under Alternative 2 the number of identified whales that can be harvested would be reduced accordingly. Under Alternatives 3, 5, and 6, which do not include provisions for adjusting the numbers of identified whales that can be harvested, it is possible that the abundance of identified whales in the ORSVI would decline as a result of cumulative effects.

Evidence of global climate change in the past few decades has accumulated from a variety of geophysical, biological, oceanographic, and atmospheric sources. The scientific evidence indicates that average air, land, and sea temperatures are increasing at an accelerating rate. Although climate changes have been documented over large areas of the world, the changes are not uniform and affect different areas in different ways and intensities. Arctic regions have experienced some of the largest changes, with major implications for the marine environment as well as for coastal communities (Gitay et al. 2002 for the Intergovernmental Panel on Climate Change [IPCC]; Arctic Climate Impact Assessment 2004; IPCC 2007).

Global climate change may also affect abundance, viability and distribution of the ENP gray whale stock in the future. ENP gray whales feed on a variety of prey, both benthic and pelagic, and will switch feeding areas and strategies in response to changes in prey availability (Section 3.4.3.3, Distribution and Habitat Use). Global climate change may cause diminished prey availability in the northern portion of the summer range, causing more whales to use the southern portion of the summer range (Weiss 2007). At this time it is uncertain how overall gray whale abundance and viability will be affected by global climate change (Weiss 2007). As described above, the Scientific Committee of the IWC annually monitors the status of the ENP gray whale stock, and the IWC has a process to adjust catch limits.

For gray whales in local survey areas, there are no other cumulative effects that are unique from those that affect the gray whale stock as a whole. Although the whales' migratory corridor is also a major shipping route, there is no evidence that disturbance from shipping has prevented the whales' use of local survey areas both during the migration periods and the summer feeding

period. The estimated number of whale mortalities per year from ship strikes is low (one to two), with an unknown number of those mortalities being whales identified in local survey areas. There is no evidence that this level of mortality is affecting the ENP gray whales' use of the local survey areas. There is some whale-watching that occurs in the local survey areas, but no evidence that this activity results in more than a minor temporary disturbance. Adding the potential disturbance and mortalities associated with a gray whale hunt under Alternatives 2 through 6 to these existing levels of disturbance and mortality would not be expected to have effects on gray whales in local survey areas and individual gray whales beyond those already analyzed in Section 4.4.3, Eastern North Pacific Gray Whale, Evaluation of Alternatives.

For individual whales, it is possible that the stress associated with hunting, when added to existing sources of stress such as those described in Section 3.4.3.6, Known and Potential Anthropogenic Impacts, could lead to the mortality of some individual whales. This possibility is explored in Section 4.4.2.1, Change in Abundance and Viability of the ENP Gray Whale Stock.

5.5 Other Wildlife Species

Section 4.5.3, Other Wildlife Species, Evaluation of Alternatives, analyzes the effects likely to occur to other wildlife species from implementation of Alternatives 2 through 6. These effects would primarily be from vessel noise and disturbance and would be greater under alternatives that involve the greatest number of days of hunting (Alternatives 3 and 6). Some disturbance would also be expected from aircraft and gunfire associated with a hunt. Under all alternatives these effects are expected to be minor and temporary for all species with the possible exception of some seabird colonies during the nesting season. Section 3.13.3, Transportation, Existing Conditions, describes existing levels of vessel and air traffic in the project area to which the additional vessel and air traffic would be added under Alternatives 2 through 6.

Future increases in shipping through the Strait of Juan de Fuca have the potential to affect marine mammals and birds through vessel interactions and noise. Vessel collisions with marine mammals, though rare, could increase in the Strait as a result of increased shipping. Added to this increased risk would be the slight increased risk of vessel strike associated with a gray whale hunt in the Strait under Alternative 6. Increased vessel traffic in the Strait could also affect birds using the Strait for nesting, foraging and other activities. Under Alternative 6, minor cumulative impacts on marine mammals and birds are possible as a result of increased shipping.

The EA for the Makah Bay wave energy project describes potential impacts to other wildlife species (FERC 2007b). For marine mammals (including pinnipeds and otters) it concluded there

would be minimal impacts, for the reasons described above under Section 5.4, ENP Gray Whales. For sea birds it concluded that any disturbance would be short term and localized and primarily associated with the construction phase of the project (FERC 2007b). Seabird entanglement in the completed mooring and anchor system is deemed unlikely because of adequate cable burial, tension, and spacing (FERC 2007b). Available information does not suggest that existing levels of disturbance for any species are currently a cause of concern for any species of wildlife in the project area. The minor, short-term localized disturbance from any of the alternatives, combined with the minimal disturbance from the Makah Bay wave energy project, when added to existing levels of disturbance, would not result in cumulative effects to other wildlife species.

5.6 Economics

Section 3.6.3, Economics, Existing Conditions, describes Clallam County's recent drop in unemployment rate (from 6.9 percent in 2000 to 5.6 percent in 2006) and increase in personal income (63 percent increase from 1990 to 2004). Levels of unemployment are higher and personal income lower in Neah Bay compared to county-wide data. There are no foreseeable future trends that may affect the present economic climate in the county or in Neah Bay.

Section 4.6, Environmental Consequences, Economics, analyzes the potential for minor temporary increases or decreases in tourism in Clallam County and Neah Bay if a gray whale hunt is authorized under Alternatives 2 through 6. It also describes no likely change in economic conditions if a gray whale hunt is not authorized under Alternative 1. According to the EA for the Makah Bay wave energy project (FERC 2007b), that project would have a positive effect on the economy in the project area. Given the current economic climate and generally favorable economic trends in Clallam County, and that the potential effects of any of the alternatives are either nonexistent or minor and temporary, no cumulative effects are anticipated on the local economy.

5.7 Environmental Justice

Section 4.7, Environmental Justice, describes the potential effects on the Makah Tribe (the population of concern for purposes of considering Executive Order 12898, *Environmental Justice*) of the No-action Alternative and the five action alternatives. Because the Makah Tribe has requested authorization of a whale hunt, impacts to the Tribe under the action alternatives are not an issue of concern under the Executive Order. Under the No-action Alternative, it is possible the Makah Tribe would experience cumulative effects, for the reasons described under 5.10, Subsistence and Ceremonial Resources.

5.8 Social Environment

As described in Section 3.8, Social Environment, Existing Conditions, various groups and individuals have different opinions about hunting whales. NMFS received public comments about the hunt from a broad geographic area; public scoping occurred in the vicinity of the project area as well as in Washington D.C. Makah Tribe members and other tribes generally support the hunt, while the general public has mixed feelings about the issue. Section 4.8, Environmental Consequences, Social Environment, analyzes the potential for these different groups to experience both increased social conflict and increased social bonding, within the groups and outside the groups, under any of the alternatives. Other social issues exist that may have caused conflict or bonding within or among these groups in the past, and new issues are likely to arise in the future. It is too speculative to consider whether the issue of Makah gray whale hunting would result in substantial cumulative effects within this larger social context.

5.9 Cultural Resources

As analyzed in Section 4.9, Environmental Consequences, Cultural Resources, no adverse effects are expected to cultural resources if hunting is authorized under Alternatives 2 through 6. Some beneficial effects are possible to both listed and unlisted cultural sites historically used for whaling-related ceremonies if hunting is authorized. These sites are also used for other non-whaling activities. No cumulative effects are expected beyond those considered in Section 4.9 since no effects would occur to sites outside of the project area.

5.10 Subsistence and Ceremonial Resources

Section 3.10.3, Ceremonial and Subsistence Resources, Existing Conditions, describes the past and current status of Makah subsistence and ceremonial practices, including a history of such practices being discouraged by United States government policy and a recent resurgence in such practices. It also describes the prestige accorded whaling families in traditional Makah society. Section 4.9, Environmental Consequences, Cultural Resources, examines the potential for resumption of whaling under Alternatives 2 through 6 to enhance the Tribe's subsistence and ceremonial practices and, conversely, for implementation of Alternative 1 (no authorized hunting) to detract from these practices. Future policies of the United States Government are difficult to predict, as are future trends in the values of the dominant culture that may affect Makah ceremonial and subsistence practices. It is also not possible to predict the availability of subsistence resources in the future, although it is likely that resources will shift as global climate change affects the ocean ecosystem. It is possible that a denial of the Tribe's request under

Alternative 1, when added to the legacy of United States Government policies discouraging subsistence and ceremonial practices, would have negative cumulative effects.

5.11 Aesthetics

Under Alternatives 2 through 6 there may be some temporary aesthetic effects to those viewing gray whale hunts through the media or from local vantage points both inside and outside of the project area. There are currently no issues identified in the project area related to aesthetics, and those outside of the project area were addressed as a direct or indirect affect from media coverage or vantage points. No cumulative effects would therefore be expected beyond the effects of alternatives analyzed in Section 4.12.3, Aesthetics, Evaluation of Alternatives.

5.12 Transportation

Under Alternatives 2 through 6 there may be some localized, temporary effects on highway traffic in the project area, but no transportation effects would occur outside of the project area. Marine and air traffic effects outside of the project area were also analyzed in Chapter 4. The Makah Bay wave energy project is not likely to have effects on transportation in the project area (FERC 2007b). If the project were expanded in the future, there could be effects, which would be analyzed under NEPA. No cumulative effects would therefore be expected beyond the effects of the alternatives analyzed in Section 4.13.3, Transportation, Evaluation of Alternatives.

5.13 Public Services and Public Safety

Under Alternatives 2 through 6 there may be some localized, temporary effects on police services in the project area, but no strains are anticipated on medical services in either the project area or on medical services in larger cities outside of the project area. It is not anticipated that localized needs for police services under any of the action alternatives would require additional services from law enforcement sources outside of the project area analyzed in Chapter 4. No cumulative effects would therefore be expected beyond the effects of the alternatives analyzed in Section 4.14.3, Public Services, Evaluation of Alternatives, or Section 4.15.3, Public Safety, Evaluation of Alternatives.

5.14 Public Safety

This resource area is considered above.

5.15 Human Health

Section 3.16.3, Human Health, Existing Conditions, describes the levels of contamination found in gray whales and the potential for food-borne pathogens associated with the butchering, storage and preparation of gray whale products. It also describes the nutritional benefits of gray whale food products. As discussed in Section 4.16.3, Human Health, Evaluation of Alternatives, the contaminant level in the current diet of Makah Tribe members is unknown, and it is not possible to evaluate the change in Tribal members' exposure to contaminants or pathogens, or in their nutrition, without knowing how much or what type of whale products individuals would consume and without knowing the contaminant level and nutritional composition of their present diet.

Furthermore, it is not possible to determine how past events such as a moratorium on whaling affected the overall health of the Makah Tribe since no data exist to demonstrate changes in health before and after whale hunting was allowed. Additionally, there would be no cumulative effect resulting from consumption of whale products beyond that analyzed for the Makah tribal members in Chapter 4 since no other communities would be exposed to whale products under any alternative.

5.16 National and International Regulatory Environment

As described in Section 4.17.3, National and International Regulatory Environment, Evaluation of Alternatives, it is too speculative to conclude that NMFS' decision to authorize or not authorize a whale hunt would affect marine mammals in the United States, whaling worldwide, or indigenous people worldwide. It is therefore too speculative to conclude that there would be any cumulative effects on these resources associated with a NMFS decision under any of the alternatives.

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During DEIS development, NMFS also consulted with the following agencies and organizations: Cascadia Research Collective; Clallam County Sheriff's Department; Makah Tribe; NMFS National Marine Mammal Laboratory; NMFS Office of Law Enforcement; NOAA National Marine Sanctuary Program; Northwest Indian Fisheries Commission; U.S. Coast Guard; U.S. Department of the Interior; U.S. Fish and Wildlife Service; and Washington State Police.

Distribution List

Public Scoping Distribution List

Federal Agencies

Council on Environmental Quality
Federal Emergency Management Agency Region X
Fisheries and Oceans Canada
Marine Mammal Commission
National Parks Service Library
NOAA Habitat Conservation Division
NOAA National Marine Fisheries Service
NOAA National Marine Mammal Laboratory
NOAA National Marine Sanctuary Program
NOAA Olympic Coast National Marine Sanctuary
Olympic National Forest
Olympic National Park
U.S. Army Corps of Engineers
U.S. Coast Guard
U.S. Department of the Interior, Bureau of Indian Affairs
U.S. Department of the Interior, Office of Environmental Policy and Compliance
U.S. Environmental Protection Agency (EPA) Region X
U.S. Fish and Wildlife Service
U.S. Representative, State of Washington, 1st, 2nd, 3rd, 6th, 7th, 8th, and 9th Districts
U.S. Senator, State of Washington, Seats 1 & 2

State Agencies & Elected Officials

Office of the Governor, State of Washington
Office of the Lieutenant Governor, State of Washington
Washington State Attorney General's Office
Washington State Department of Ecology
Washington State Department of Fish and Wildlife
Washington State Department of Health
Washington State Department of Natural Resources
Washington State House of Representatives
Standing Committees-
Economic Development, Agriculture, and Trade Committee
Natural Resources, Ecology, and Parks Committee
Rules Committee
Washington State House of Representatives, 1st, 2nd, 5th, 10th, 11th, 19th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, and 48th Districts
Speaker, Washington State House of Representatives
Majority Leader, Washington State House of Representatives
Minority Leader, Washington State House of Representatives
Washington State Senate, Standing Committees - International Trade & Economic Development Committee, Natural Resources, Ocean, Recreation Committee, Rules Committee, Water, Energy & Environment Committee, and Ways & Means Committee
Majority Leader, Washington State Senate
Minority Leader, Washington State Senate
Washington State Senator, 1st, 2nd, 5th, 10th, 11th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, and 48th Districts

County & Local Agencies

Clallam Conservation District
Clallam County Commissioners
Clallam County Economic Development Council
Grays Harbor County Commissioners
Island County Commissioners
Jefferson County Commissioners
King County, Department of Natural Resources and Parks
Kitsap County Commissioners
Mason County Commissioners

Pacific County Commissioners
Pierce County Council
Pierce County Planning Department
Port Angeles Chamber of Commerce
San Juan County Commissioners
San Juan County Planning Department
Skagit County Commissioners
Snohomish County Commissioners
Thurston County Commissioners
Washington State Association of Counties
Whatcom County Council

Native American Tribes & Organizations

Affiliated Tribes of Northwest Indians
Chehalis Tribe
Chinook Indian Tribe
Coeur D'Alene Tribe
Columbia River Intertribal Fish Commission
Colville Confederated Tribes
Confederated Tribes and Bands of the Yakama Nation
Confederated Tribes of Grand Ronde
Confederated Tribes of Warm Springs
Cowlitz Indian Tribe
Hoh Indian Tribe
Indigenous Environmental Network
International Indian Treaty Council
Jamestown S'Klallam Tribe
Kalispell Tribe
Lower Elwha Klallam Tribe
Lummi DNR
Lummi Indian Business Council
Makah Fisheries Management
Makah Indian Tribe
Muckleshoot Tribe
Muckleshoot Tribe Fisheries Department
National Congress of American Indians
National Indian Gaming Association
Native Movement
Nez Perce Tribe
Nisqually Indian Tribe
Nooksack Indian Tribe
Northwest Indian College
Northwest Indian Fisheries Commission
Point-No-Point Treaty Council
Port Gamble S'Klallam Tribe
Puyallup Tribe
Puyallup Tribe Fisheries Department
Quileute Indian Tribe
Quileute Natural Resources
Quinault Indian Nation
Samish Indian Nation
Sauk-Suiattle Tribe
Shoalwater Bay Tribe
Skagit System Cooperative
Skokomish DNR
Snoqualmie Tribe
Spokane Tribe
Squaxin Island Tribe
Stillaguamish Indian Tribe
Suquamish Tribe
Suquamish Tribe Fisheries Department
Swinomish Tribe
Tulalip Tribes
Umatilla Confederated Tribes
United Indians of All Tribes Foundation
Upper Columbia United Tribes
Upper Skagit Indian Tribe
Washington State Indian Education Association
Yakama Indian Nation
Yakama Nation TFW

Organizations

Advocate of Animals
Advocates for Animals
American Cetacean Society
American Lands
Animal Legal Defense Fund
Animal Protection Institute
Animal Voices
Australians for Animals
Breach Marine Protection
Cascadia Research Collective
CASH (Committee to Abolish Sport Hunting Inc)
Cetacea Defense
Cetacean Society International
Civitas (Citizens for Planetary Health)
Coastal Waters Project
Concerned Citizens of Planet Earth

Defenders of Wildlife National Headquarters
Earth Island Institute International Marine Mammal Project
Humane Education Network
Humane Society of Canada
Humane Society of the United States
International Community of Concerned Citizens on Animal Welfare
League of Animal Protection Voters
League of Women Voters
National Wildlife Federation
Nature Conservancy of Washington
Ocean Advocates
Ocean Defense International
Olympic Peninsula Audubon Society
ORCA
Pacific States Marine Fisheries Commission
Sea Sanctuary
Sea Shepherd Conservation Society, Inc
Seattle Audubon Society
Sierra Club - Cascade Chapter
Sierra Club - National Headquarters
The Fund for Animals
The Humane Society of the United States
The Mountaineers
The Peaceful Kingdom Alliance 4 Animals, Inc
The Pegasus Foundation
The Peninsula Citizens for the Protection of Whales
The Whaleman Foundation
The Wildlife Society
Washington Association of Conservation Districts
Washington Citizens' Coastal Alliance
Washington Environmental Council
Washington Forest Law Center
Washington State Natural Resources Committee
Western Environmental Law Center Northwest Office
Wildlife Advocacy Project
Williamsburg & Greenpoint Dog Owners Group
World Whale Police

Businesses

Hirschkop & Associates
Meyer & Glitzenstein
MORI-ko L.L.C.
Parametrix
San Juan Safaris
Schubert & Associates
Sea Wolf Adventures
Whale Watch Operators Association Northwest
Ziontz, Chestnut, Varnell, Berley & Slonim

Media

Forks Forum
KING Television (Seattle)
KIRO Television (Seattle)
KOMO Television and Radio (Seattle)
KONP Radio (Port Angeles)
Native American Times
Peninsula Daily News - West End
Seattle Post-Intelligencer
Seattle Times
Tacoma News Tribune
The Chronicle
The Northern Light
The Olympian
TVW Washington State Public Affairs Network

Libraries

Anacortes Public Library
Enumclaw Public Library
Jefferson County Library
King County Library System
Kitsap Regional Library
North Olympic Library System Clallam Bay Branch Library
North Olympic Library System Forks Branch Library
North Olympic Library System Sequim Branch Library
Olympia Timberland Library
Orcas Island Public Library
Pierce County Library System
San Juan Library
Seattle Public Library, Government Publications Department
Sno-Isle Regional Library
Tacoma Public Library
Whatcom County Library

Public Scoping Commentors*

Alfredo Kuba
Ann Stateler
Barbara Sachau
Carroll & Eleanor Reid
Cheryl Rorabeck-Siler
Cheryl Branum White
Chuck & Margaret Owens
Cindy & Kraig Hansen
Darrell Markishtum
David T. Chuljian
Delane & Mary Bell
Delida Curtis
Dian Hardy
Diane Hood
Diane J. Weinstein
Dietrich Haugwitz
Dr. & Mrs. N. Vittorio
Eldon E. Baker
Eldon G. & Linda H. Francis
Elisabeth Anderson
Elizabeth Arlen
Elizabeth Enger
Ernest R. Sansregret
Errol E. Povah
Gary & Caroline Goodrich
Haig Yacoubian
Jan Fortin
Jason Roberts
Jerol Kennedy
Jim & Marilee Meyer
Joe E. Harington
Joel Carlson
John Cinti
Joseph and Virginia Blomgren
Karen R. Haarstick
Kathleen Jackson
Kathleen Kolody
Kira Khadem
Linda G. Fisher
Lisa Wyatt
Loris Adams
Mark M. Giese
Michael Alvarez-Toye
Mr. & Mrs. Ken Livingston
R.A. Richards II
Raelene Gold
Rebecca A. McEnerney
Rebecca and Jim Sundberg
Robert Stagman
Roland Griffith
Russell and Christina Kennedy
Sharon L. Fox
Sharon Stroble
Susan Cronin Parano

*Other public scoping comments were received via electronic mail; however, no mailing addresses were provided for DEIS distribution.

Appendix A

- **Makah Tribe's 2/11/2005 Request for a Waiver of the Marine Mammal Protection Act (MMPA) Take Moratorium**

- **Makah Tribe's 1/24/2006 Clarification of MMPA Waiver Request Application**

- **Management Plan for Makah Treaty Gray Whale Hunting for the Years 1998-2002 as Amended April 2001**

MAKAH TRIBE
P.O. BOX 115 • NEAH BAY, WA 98357 • 360-645-2201

February 11, 2005

William T. Hogarth, Ph.D.
Assistant Administrator
National Oceanic and
Atmospheric Administration
Room 14636
1315 East-West Hwy
Silver Spring, MD 20910

Re: Makah Tribe's Request for a Waiver of the Marine Mammal Protection Act (MMPA) Take Moratorium

Dear Dr. Hogarth,

Under the 1855 Treaty of Neah Bay, the Makah Tribe secured an express right to hunt whales throughout its usual and accustomed grounds and stations. The Makah Tribe's express whaling rights have not been abrogated by any subsequent statute including the Marine Mammal Protection Act (MMPA). Nevertheless, the Ninth Circuit Court of Appeals has held that, notwithstanding the Makah Tribe's express whaling rights under the Treaty of Neah Bay, the National Oceanic and Atmospheric Administration (NOAA) must waive the MMPA take moratorium before the Tribe may exercise its Treaty whaling rights. *Anderson v. Evans*, 371 F.3d 475 (9th Cir. 2004).

Consider this letter and the attached application the Tribe's formal request for a waiver of the take moratorium under Section 101(a)(3) of the MMPA, 16 U.S.C. § 1371(a)(3), to allow a ceremonial and subsistence (C&S) harvest from the Eastern North Pacific stock of gray whales (*Eschrichtius robustus*) within the Makah Tribe's adjudicated usual and accustomed grounds. *See United States v. Washington*, 626 F.Supp. 1405, 1467 (W.D.Wash. 1985). The total take of gray whales for which the Tribe seeks a waiver is up to 20 gray whales in any five-year period subject to a maximum of five gray whales in any calendar year.

In accordance with Section 101(a)(3) of the MMPA, the Tribe asks you to determine that it is compatible with the Act to waive the moratorium to allow for the taking of whales requested in this letter and attached application, and to adopt suitable regulations and make determinations in accordance with Sections 102, 103, and 104 of the Act. We also ask you to simultaneously undertake a National Environmental Policy Act review of the Tribe's request.

The Tribe believes that approval of this request is consistent with the purposes and policies set forth in Section 2 of the MMPA and is necessary for the United States to fulfill its fiduciary obligations to the Tribe under the Treaty of Neah Bay. As shown in the attached

application, the Tribe's requested harvest of gray whales will ensure that gray whales remain a significant functioning element in the ecosystem and will not permit the Eastern North Pacific gray whale stock to fall below its optimum sustainable population.

The Tribe thanks you in advance for your attention to this important matter.

Sincerely,

MAKAH TRIBAL COUNCIL

Ben Johnson, Jr.
Chairman

CC: Rolland Schmitten, U.S. IWC Commissioner
Laurie Allen, Director, NOAA Office of Protected Resources
Karl Gleaves, General Counsel for NOAA/NMFS/OPR
Robert Lohn, NOAA Fisheries Northwest Regional Administrator
Joe Scordino, NOAA Fisheries Northwest Deputy Regional Administrator
David Cottingham, Executive Director, Marine Mammal Commission
Michael Gosliner, General Counsel, Marine Mammal Commission
Stanley Speaks, BIA Northwest Regional Director

APPLICATION FOR A WAIVER OF THE MARINE MAMMAL PROTECTION ACT TAKE MORATORIUM TO EXERCISE GRAY WHALE HUNTING RIGHTS SECURED IN THE TREATY OF NEAH BAY

February 11, 2005

Makah Tribal Council
P.O. Box 115
Neah Bay, WA 98357

Table of Contents

Executive Summary

This document constitutes the application of the Makah Indian Tribe (the "Tribe") under Section 101(a)(3) of the Marine Mammal Protection Act (MMPA), 16 U.S.C. § 1371(a)(3), for a waiver of the moratorium on the taking of marine mammals which would allow the Tribe to conduct a Treaty ceremonial and subsistence (C&S) harvest of up to 20 gray whales from the Eastern North Pacific (ENP) stock in any five-year period, with a maximum of five whales per year. The proposed waiver would be subject to permanent regulations adopted by the Secretary of Commerce under Section 103 of the MMPA, 16 U.S.C. § 1373, which would authorize the National Oceanic and Atmospheric Administration (NOAA) to issue the Tribe a renewable whaling permit of up to five years in duration under Section 104 of the MMPA, 16 U.S.C. § 1374, provided that the Tribe enacts, implements, and enforces Tribal regulations which meet minimum standards necessary to conserve the ENP stock, avoid local depletion, and ensure a safe and humane hunt. These standards will include:

- Limits on the total number of gray whales that may be struck in a calendar year;
- Time and area restrictions designed to avoid any intentional harvest of gray whales comprising the Pacific Coast Feeding Aggregation (PCFA);
- Monitoring and adaptive management measures designed to ensure that any incidental harvest of gray whales from the PCFA remains below an annual allowable bycatch level (ABL) that will be conservatively established by applying the MMPA's potential biological removal (PBR) methodology to a conservative abundance estimate which is based on the number of gray whales that exhibit inter-annual site fidelity to the Oregon to Southern Vancouver Island (ORSVI) survey area;
- Measures that will ensure that the hunt is as humane as practicable consistent with the continued use of traditional hunting methods; and
- Measures to protect public safety.

The Makah Tribe has at least a 1,500-year-old whaling tradition and secured an express right to take whales under Article IV of the 1855 Treaty of Neah Bay. The Tribe's Treaty whaling rights have not been abrogated by the MMPA or any other federal statute. Under well-established case law, these rights are subject to restriction only where necessary to prevent demonstrable harm to a particular stock or species of whales.

Nevertheless, in *Anderson v. Evans*, 371 F.3d 475 (9th Cir. 2004), the Ninth Circuit Court of Appeals decided that the Tribe must obtain a waiver of the MMPA's take moratorium before it may exercise its Treaty whaling rights. The Tribe strongly disagrees with the Court's holding, but is filing this application to provide a legal framework that will allow for long-term exercise of its Treaty whaling rights consistent with the conservation needs of the gray whale. Approval of this waiver request is needed to meet the Tribe's cultural and subsistence needs and to fulfill the

United States government's Treaty and trust obligations to the Tribe.

The population of Eastern North Pacific stock of gray whales is at its historic levels and within its optimum sustainable population (OSP). After accounting for the Makah whale hunt, the total human-caused mortality, which includes aboriginal subsistence harvest by native groups in Russia, will be just over a third of the stock's PBR level of 366 whales. The Scientific Committee of the IWC provided management advice in 2002 that a take of up to 463 whales per year is sustainable for at least the medium term (~30 years). This level of harvest is over 350 percent higher than the average annual joint US-Russian quota of 124 whales per year. Because there is no likelihood that the Makah whale hunt will cause the Eastern North Pacific stock to fall below OSP in the foreseeable future, the Tribe's waiver request is well within the Tribe's rights under the Treaty of Neah Bay and is consistent with the policies and requirements of the MMPA.

For the purposes of this application, the Pacific Coast Feeding Aggregation (PCFA) is defined as any whale found in NOAA's photo-identification database which has been observed south of Alaska from June 1 through November 30 in any year. The PCFA is not a discrete stock of whales for the purposes of the MMPA. Nevertheless, the Tribe has agreed to safeguards that will prevent any intentional harvest of gray whales that exhibit inter-annual site fidelity to the Pacific coast south of Alaska. The Tribe will allow whale hunting only during established gray whale migration periods (December 1 through May 31) and prohibit hunting in gray whale feeding grounds in the Strait of Juan de Fuca.

To minimize the risk of incidental harvest of whales from the PCFA and ensure that gray whales remain a functioning element of the ecosystem, the Tribe in consultation with NOAA will compare photographs of all landed whales with NOAA's photo-identification database for the PCFA. The Tribe will suspend the hunt in a calendar year if necessary to prevent the harvest of whales found in the PCFA database from exceeding an annual allowable bycatch level (ABL). The ABL will be calculated by applying the MMPA's PBR methodology to a conservative abundance estimate based on the number of gray whales that are seen in more than one year in the Oregon-Southern Vancouver Island (ORSVI) survey area between June 1 and November 30.

NOAA should approve the Tribe's request for a waiver and adopt regulations that permit the Tribe to exercise its treaty rights in the manner specified in this application. The proposed waiver is necessary for the United States government to fulfill its legal obligations to the Tribe under the Treaty of Neah Bay, will not disadvantage the ENP stock of gray whales, and will be consistent with the purposes and policies of the MMPA.

Definitions.

Allowable Bycatch Level (ABL): the number of whales from the PCFA that may be taken incidental to a hunt directed at the migratory portion of the ENP stock of gray whales. The ABL is calculated using the MMPA's PBR approach but the minimum population estimate is calculated from the number of previously seen whales in the Oregon-Southern Vancouver Island (ORSVI) survey area.

Harassment: any act of pursuit, torment, or annoyance which— (i) has the potential to injure a marine mammal or marine mammal stock in the wild (referred to as Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavorial patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (referred to as Level B harassment). 16 U.S.C. § 1362(18).

Humane Killing: that method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved. 16 U.S.C. § 1362(4).

Optimum Sustainable Population (OSP): is defined as "with respect to any population stock, the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element." 16 U.S.C. § 1362(9). NOAA has quantified OSP as a population size which ranges between a stock's maximum net productivity level (MNPL) and its carrying capacity (K). *See* 50 C.F.R. § 216.3.

Oregon-Southern Vancouver Island (ORSVI) survey area: the gray whale survey region from Oregon to Southern Vancouver Island for which abundance estimates of returning whales are used to develop the allowable bycatch level (ABL). This area was identified in Calambokidis et al. (2004) as the appropriate range to evaluate abundance estimates for the purposes of management of a Makah whale harvest and is based on gray whale interchange rates to survey areas adjacent to the Makah U&A.

Pacific Coast Feeding Aggregation (PCFA): any ENP gray whale found in the photo-identification database maintained by NOAA's National Marine Mammal Laboratory (NMML) which has been observed south of Alaska from June 1 through November 30 in any year.

Potential Biological Removal (PBR): the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population 16 U.S.C. § 1362(20). A total level of human-caused mortality that is less than the PBR is considered sustainable and consistent with the MMPA's goal of managing marine mammal stocks to achieve their OSP level. Under 16 U.S.C. § 1362(2), the PBR for a particular marine mammals stock is calculated by taking the product of the following factors: the minimum population of the stock (N_{min}); one-half the maximum theoretical or estimated net productivity rate of the stock at a small population size (R_{max}); and a recovery factor (F_r) between 0.1 and 1.0.

Strike: means any blow or blows delivered to a whale by a harpoon, rifle or other weapon which may result in death to a whale. A harpoon blow counts as a strike if the harpoon is embedded in the whale. Any rifle shot which hits a whale counts as a strike. For the purpose of this request, multiple strikes on a single whale count as a single strike.

Take: as applied to the number of whales that may be harvested, "take" is defined in accordance with the regulations of the International Whaling Commission, "to flag, buoy or make fast to a whale catcher." For all other purposes, "take" is defined according to the definition in the MMPA, which means to harass, hunt, capture, or kill, or attempt to harass, hunt capture, or kill any marine mammal. 16 U.S.C. § 1362(13).

Acronyms.

ABL	Allowable Bycatch Level
C&S	Ceremonial and Subsistence
CV	Coefficient of Variation
ENP	Eastern North Pacific
F_r	Recovery factor
ICRW	International Convention on the Regulation of Whaling
IWC	International Whaling Commission
K	Carrying capacity
km	Kilometers
m	Meters
MMPA	Marine Mammal Protection Act
MNPL	Maximum Net Productivity Level
MRT	Minimum Residency Tenure
MSY	Maximum Sustained Yield
MSYL	Maximum Sustained Yield Level
n	Sample size
N	Population estimate
N_{min}	Minimum population estimate
NEPA	National Environmental Policy Act
NMML	National Marine Mammal Laboratory
NOAA	National Oceanic and Atmospheric Administration

ORSVI	Oregon-Southern Vancouver Island
OSP	Optimum Sustainable Population
PBR	Potential Biological Removal
PCFA	Pacific Coast Feeding Aggregation
R_{max}	Maximum theoretical or estimated net productivity rate of a stock at small population size
SARs	Stock Assessment Reports
U&A	Makah Usual and Accustomed grounds and stations
WCA	Whaling Convention Act

I. Request for Waiver and Proposed Regulations.

This document constitutes the application of the Makah Indian Tribe (the "Tribe") under Section 101(a)(3) of the Marine Mammal Protection Act (MMPA), 16 U.S.C. § 1371(a)(3), for a waiver of the moratorium on the taking of marine mammals which would allow the Tribe to conduct a Treaty ceremonial and subsistence (C&S) harvest of up to 20 gray whales from the Eastern North Pacific (ENP) stock in any five-year period, with a maximum of five whales per year. The proposed waiver would be subject to permanent regulations adopted by the Secretary of Commerce under Section 103 of the MMPA, 16 U.S.C. § 1373, which would authorize the National Oceanic and Atmospheric Administration (NOAA) to issue the Tribe a renewable whaling permit of up to five years in duration under Section 104 of the MMPA, 16 U.S.C. § 1374, provided that the Tribe enacts, implements, and enforces Tribal regulations which meet minimum standards necessary to conserve the ENP stock, to avoid local depletion, and to ensure a safe and humane hunt. The term of the initial permit should coincide with the current aboriginal subsistence quota for gray whales approved by the International Whaling Commission (IWC), which runs though 2007. Future permits would be issued in synchrony with IWC aboriginal quotas, which are currently set at five-year intervals.

As discussed in greater detail in Parts II and III of this application, the Makah Tribe has at least a 1,500-year-old whaling tradition and secured an express right to take whales under Article IV of the 1855 Treaty of Neah Bay. The Tribe's Treaty whaling rights have not been abrogated by the MMPA or any other federal statute. Under well-established case law, these rights are subject to restriction only where necessary to prevent demonstrable harm to a particular stock or species of whales.

Nevertheless, in *Anderson v. Evans*, 371 F.3d 475 (9th Cir. 2004), the Ninth Circuit Court of Appeals decided that the Tribe must obtain a waiver of the MMPA's take moratorium before it may exercise its Treaty whaling rights. The Tribe strongly disagrees with the Court's holding but is filing this application to provide a legal framework that will allow for long-term exercise of its treaty whaling rights consistent with the conservation needs of the gray whale. Approval of this waiver request is needed to meet the Tribe's cultural and subsistence needs and to fulfill the United States government's Treaty and trust obligations to the Tribe.

The Tribe proposes to manage the whale hunt under Tribal regulations which meet the following minimum standards:

A. Number of Gray Whales that May Be Taken.

The Tribe's regulations will limit the number of gray whales that may be "taken," as that term is defined in IWC regulations, to no more than five in any calendar year, and to no more than 20 in any five-year period.[1] In addition, Tribal regulations will limit the number of gray whales that may be "struck," a more inclusive term that encompasses all whales that are "taken," to no

[1] Under the IWC Schedule, the term "take" means to flag, buoy or make fast to a whale catcher.

more than seven in any calendar year.[2] The Tribe's regulations will limit the number of struck and lost whales to no more than three in any calendar year. The number of gray whale takes and strikes allowed by Tribal regulation will be subject to reduction if necessary to meet the international treaty obligations of the United States under the International Convention for the Regulation of Whaling (ICRW) or to prevent the abundance of the ENP stock from falling below its optimum sustainable population level (OSP). Tribal regulations will not allow the taking of any other species of whales except gray whales.

B. Age, Size, and Sex of Gray Whales that May Be Taken.

Tribal regulations will prohibit the striking of a whale calf, or any whale accompanied by a calf.

C. Season When Gray Whales May Be Taken.

The Tribe's regulations will prohibit the striking of a gray whale between June 1 and November 30 of any calendar year. The purpose of this restriction is to prevent the intentional harvest of whales that may be part of the Pacific Coast Feeding Aggregation (PCFA).

D. Manner and Location in which Gray Whales May Be Taken.

The Tribe's regulations will prohibit the striking of a gray whale outside of the Tribe's usual and accustomed (U&A) grounds as adjudicated in *United States v. Washington*, 626 F.Supp. 1405, 1467 (W.D. Wash. 1985). The Tribal regulations will also prohibit the striking of a gray whale within the Strait of Juan de Fuca. Hunting will only occur in the waters of the Pacific Ocean bounded by the following line: a line beginning at the northwestern tip of Cape Flattery running to the Tatoosh Island Lighthouse; from the Tatoosh Island Lighthouse to the buoy adjacent to Duntze Rock; from the buoy adjacent to Duntze Rock following a straight line to Bonilla Point on Vancouver Island but stopping at the Exclusive Economic Zone (EEZ); tracking the EEZ boundary westward to 125° 44'00" longitude; south along 125° 44'00" longitude to 48° 02'15" latitude; east along 48° 02'15" latitude to shore; and then track the shoreline northward to point of origin at Cape Flattery.

To further reduce the risk of local depletion, Tribal regulations will provide for detailed photographic monitoring of all landed whales. As soon as practicable after a successful hunt, in consultation with scientists from NOAA's National Marine Mammal Laboratory (NMML) the Tribe will compare photographs of landed whales with the NMML photo-identification catalog for the Pacific Coast Feeding Aggregation (PCFA), which includes any gray whale that has been photographed south of Alaska between June 1 and November 30 in any year. The Tribe will cease hunting in a calendar year when photographic analysis indicates that suspension of the hunt

[2] For the purposes of this request, the term "strike" means any blow or blows delivered to a whale by a harpoon, rifle or other weapon which may result in death to a whale. A harpoon blow counts as a strike if the harpoon is embedded in the whale. Any rifle shot which hits a whale counts as a strike. (Makah Tribal Council 2001).

is necessary to prevent the number of harvested whales from the PCFA catalog from exceeding an annual allowable bycatch level (ABL) for that year. The ABL will be calculated by applying the MMPA's PBR methodology to a conservative abundance estimate based on the number of gray whales that exhibit site fidelity (i.e., seen in more than one year) in the Oregon to Southern Vancouver Island (ORSVI) survey area between June 1 and November 30.

The Tribe's regulations will also include measures that will ensure that the hunt is conducted in the most humane manner practicable consistent with the Tribe's goal of providing opportunities for a traditional ceremonial and subsistence hunt. To this end, all whales will be harpooned with a toggle-point harpoon with floats attached before being dispatched with a .50 caliber rifle shot to the central nervous system (brain and upper spinal cord). During the 1999 hunt these methods resulted in a time to death of approximately 8 minutes. The Tribe anticipates that the time to death will improve as its hunters gain additional experience.

To address concerns about impacts to nesting seabirds, no whale may be struck within 200 yards of Tatoosh Island or White Rock during the month of May. The Tribal regulations will also include measures to ensure that the hunt is conducted in a manner which is at least as protective of public safety as the measures provided for in the Tribe's 2001 Gray Whale Management Plan (Makah Tribal Council 2001).[3] Further management measures to address public safety and possible impacts to other species may be developed based on the outcome of NOAA's National Environmental Policy Act (NEPA) review of the Tribe's request.

E. Other requirements.

The Tribe's regulations will restrict the use of whale products to local consumption and ceremonial purposes in accordance with section 102(f) of the MMPA. 16 U.S.C. § 1372(f). No whale products will be sold or offered for sale, except that traditional handicrafts (including artwork) made from non-edible whale products may be sold or offered for sale within the United States. The Tribe requests a limited waiver from the MMPA's prohibition on the sale of marine mammal products for the purposes of selling such traditional handcrafts. The requested waiver would be similar to, but more restrictive than, the exemption for Alaska native handicrafts provided in Section 101(b)(2) of the MMPA, 16 U.S.C. § 1371(b)(2).

The Tribe's regulations will include a permit system which provides that no Tribal member may engage in whaling except under the control of a whaling captain who is in possession of a valid whaling permit issued by the Makah Tribal Council. Whaling permits issued by the Council must incorporate and require compliance with all of the requirements of the Tribe's regulations.

Tribal regulations will provide for a training and certification process for all members who

[3] These measures authorized the discharge of firearms when whaling only when the shooter was within 30 feet of the target area of the whale and the shooter's field of view was clear of all persons, vessels and other objects that could result in injury or loss of human life. The measures also set minimum visibility standards for the hunt. (Makah Tribal Council 2001).

participate in whaling.

Tribal regulations will offer accommodations for a NOAA Fisheries observer during all hunts, including providing the designated observer from NOAA Fisheries with at least 24 hours notice of the issuance of any whaling permit unless the observer is already present on the Makah Reservation. The regulations will also allow NOAA Fisheries to collect specimen material from landed whales, including ovaries, ear plugs, baleen plates, stomach contents, and other tissue samples.

Tribal regulations will include provisions for Tribal monitoring of all hunts and annual reporting of all monitoring data to NOAA Fisheries. At a minimum, Tribal monitoring will include maintaining accurate records of the time, date, and location of all strikes; the body length, fluke width, and sex of all landed whales and any fetus found in a landed whale; and the time to death for all whales killed. As indicated previously, all landed whales will be photographed to allow comparison with the NMML photographic database compiled for the PCFA.

Tribal regulations will include provisions requiring Tribal enforcement of the regulations. The enforcement regulations shall include criminal sanctions, including fines and imprisonment, up to the limits imposed by the Indian Civil Rights Act.

II. Purpose of and Need for the Waiver Request.

The purpose of the Tribe's application for a waiver of the take moratorium is to obtain authorization under the MMPA for a Treaty C&S harvest of up to 20 gray whales in any five-year period from the Eastern North Pacific (ENP) stock, with a maximum of five gray whales per year. As decided by the Ninth Circuit Court of Appeals in *Anderson v. Evans*, 371 F.3d 475 (9th Cir. 2004), a waiver of the MMPA's take moratorium is necessary for the Tribe to exercise its express whaling rights under Article IV of the Treaty of Neah Bay. Approval of this request is needed to satisfy the United States government's obligations to the Tribe under the 1855 Treaty of Neah Bay and the federal trust responsibility, and to fulfill the Tribe's cultural and subsistence needs which are discussed below and in the attached need statement submitted to the IWC in 2002 (Appendix A; Renker 2002).

A. The Tribe's Cultural and Subsistence Needs.

As discussed in further detail in Appendix A, the Tribe has at least a 1,500-year whaling tradition. Whaling was central to the Tribe's way of life, providing a primary means of subsistence as well as essential social and cultural functions.[4] Whaling was so important to the Tribe that it expressly reserved whaling rights in the 1855 Treaty of Neah Bay. Although Makah whaling declined in the decades after the Treaty due to forces beyond the Tribe's control, the Makah people have never forgot their whaling traditions. Over the past two decades, the Tribe has begun to restore its language, songs and dances and many other cultural traditions. The resumption of whaling in the late 1990s has brought the Tribe significant cultural and social benefits as well as a badly needed subsistence resource. Approval of this waiver application, which seeks a harvest of up to five gray whales per year from the ENP stock, would enable the Tribe to continue its cultural renaissance and provide significant nutritional resources to an economically deprived community.

1. The Makah Tribe's Whaling Tradition.

The relationship between the Makah people and whaling is of great antiquity. The Ozette archeological site on the northern Washington coast contains evidence of some 1,500 years of continuous whaling. Archeological and ethnohistorical data demonstrate that the Makah hunted gray whales as well as other whale species. The number of whales taken by Makah whalers varied from year to year. Based on historic documents, it is estimated that Makah whalers averaged about 5.5 whales per year between 1889 through 1892, a time when the gray whale population had already been substantially reduced by non-Indian commercial whaling. Whaling for gray whales occurred during both the fall and spring migrations, with some hunts occurring 30 or more miles from shore.

The Makah hunted whales from giant canoes, approximately 36 feet long and more than 5

[4] The discussion in this section is taken from Renker (2002). Readers are directed to Appendix A for a list of references for this section.

feet wide, which were carved from a single cedar log. Other equipment included mussel-shell harpoons, sealskin floats, fathoms of line made from whale sinew and cedar, and a variety of knives. Whaling equipment and methods were constantly evolving. After contact with Euro-Americans, Makah whalers began to use metal harpoon heads at the ends of their traditional wood harpoons and accepted tows from steamers to and from the whaling grounds.

A whaling crew consisted of a chief, or "whaler," and seven men. The whaler owned the canoe and the whaling equipment and acted as the sole harpooner. Other crew members included a steersman, a man responsible for managing the lines and buoys, numerous paddlers, and a man who had the unique responsibility of diving into the water and fastening the whale's mouth shut after the whale was killed.

The whale was initially harpooned behind the front flipper. Once the first harpoon had been driven into the whale and the first set of floats attached, the whale was pursued and killed with a long wooden lance. The process of killing a whale could take up to three to four days. Once killed, the whaling crew had to tow the animal back to land, a process which could take another two days. Whales were butchered according to strict protocols, which identified the sequence of the butchering, the portions of the whale reserved for ceremonial use, and the portions to be distributed to the crew and other village inhabitants.

Positions on whaling crews were restricted to men who could withstand the rigors of intensive ritualized training, possessed the hereditary access to the position and its ritualized knowledge, or underwent a supernatural encounter which engendered the gift of whaling ability. All crew members undertook rigorous ceremonial and spiritual preparations prior to the hunt; the success of the hunt depended as much on the observance of rituals as the strength and skill of the whalers. The families of the whalers were also expected to observe rituals to ensure the safety and success of the hunters.

Whaling was the keystone of traditional Makah society. Makah society was mirrored in the structure of the whale hunt, including ceremonial preparation, the hunt itself, and the ultimate acts of butchering and distribution. Whalers, or headmen, were ranked at the top of the social pyramid. Whaling success translated into physical wealth and social prestige for the headman. Women married to whalers likewise dominated the top of the female status pyramid. Ceremonies to prepare whalers and their families for the hunt provided the Makah with a social framework that contributed to governmental, social, and spiritual stability.

In addition to its cultural and social benefits, whaling provided the Makah with an essential subsistence resource. Archeological studies show that as much as 85 percent of the Makah pre-contact diet could have been composed of whale meat, oil and other food products. Whale blubber and oil also provided an important source of trade goods. Whale products insured that the Makah enjoyed a high standard of living and a diversified economy.

2. The Treaty of Neah Bay.

In the early 19th century, as non-Indian traders and explorers entered the waters of the

Northwest, the Makah experienced increasing demand for whale products. The Makah expanded their trade in whale oil and other whale products in response to this demand, selling whale oil to the Hudson's Bay Company and other trading outfits.

In early 1855, the Makah were approached by the United States government, through Washington Territorial Governor Isaac Stevens, for the purpose of negotiating a treaty of land cession. From the government's perspective, the purpose of the treaty was to gain title to the region's rich lands and resources in order to make way for non-Indian settlement. While the Makah were willing to sell most of their lands to the United States, the Tribe insisted on retaining its rights to harvest the bountiful marine resources upon which it depended for its existence. To gain Makah acceptance of the treaty, Governor Stevens repeatedly insisted that the government did not intend to stop the Makah from whaling, sealing and fishing, but in fact would help them to develop these pursuits.

Much of the official record of the treaty negotiations reflects this dialogue. At the outset of the discussions, Governor Stevens proposed to buy Makah lands and establish a small reservation at the site of present-day Neah Bay. The first Makah chief to speak, Klachote, responded that the treaty must also protect his "right to fish, and take whales and get food when he liked." The next chief, Keh-tchook, seconded this demand. Governor Stevens acceded to the Makahs' demand, replying that "so far from wishing to stop their fisheries, he wished to send them oil kettles, and fishing apparatus." Governor Stevens reassured the Makah:

> I saw the Great Father a short time since and [he] sent me here to see you and give you his mind. The Whites are crowding in upon you and the Great Father wishes to give you your homes. He wants to buy your land and give you a fair price but leaving you enough to live on and raise your potatoes. He knows what whalers you are, how you go far to sea, to take whales. He will send you barrels in which to put your oil, kettles to try it out, lines and implements to fish with — . . . [T]his will be done if we sign it [the treaty]. If it is good I shall send it to the Great Father, and if he likes it he will send it back with his name. When it is agreed to it is a bargain.

Based on the government's assurances that their whaling rights would be protected, the Makah's agreed to sign the 1855 Treaty of Neah Bay, 12 Stat. 939 (Jan. 31, 1855) (Appendix B). The Treaty was ratified, without alterations, on March 8, 1859. From the Makah perspective, the critical clause of the treaty was Article IV, which provides:

> The right of taking fish *and of whaling* or sealing at usual and accustomed grounds and stations is further secured to said Indians in common with all citizens of the United States. . . [emphasis added].

Governor Stevens' promise of government assistance with their whaling, sealing and fishing industries was also a significant inducement to the Makah because it allowed for further expansion of the Tribe's existing whaling and fishing enterprises. Significantly, of all of the many Stevens Treaties -- and of all treaties between the United States and Indian tribes -- the Treaty of

Neah Bay is the only one which expressly secures tribal whaling rights.

3. The Decline of Makah Whaling.

Despite Governor Stevens' promises, the United States failed to provide support for Makah fishing, whaling and sealing. Government assistance emphasized agricultural implements rather than items that could have supported the active components of the Makah's maritime economy. Instead of whaling and fishing tools, the Makah received pitchforks, scythes, hoes and sickles. Since the Makah Reservation was unsuited to cultivation, the Makah converted the tines of the pitchforks into fish hooks, the scythes into blubber knifes, and the sickles into arrowheads.

Federal Indian policy in the late 19th century was devoted to changing the Makah and other Indians from self-sufficient hunter-gatherers into farmers, dependent on the government for tools and instruction. Indian policy was also designed to assimilate Indian people through an education system that prohibited use of Indian languages or the exercise of cultural rituals. Despite the Treaty of Neah Bay's recognition of whaling as an important facet of Makah life, the United States government chose not to support the Tribe's well-developed practice.

Indoctrination in government-run boarding schools also worked against traditional subsistence whaling, as did epidemics and government bans on ceremonial activities. Potlatches and secret societies were prohibited, disrupting the Makah system of proprietary rights over dances, songs, and other ceremonies. At the same time that government policy was aimed at converting the Makah to agriculturalists, Pacific whale populations were declining as a result of increased commercial whaling by non-Indians. In 1854, Captain Charles Scammon discovered the Mexican breeding grounds of the gray whale. Gray whale cows and calves were slaughtered in the breeding lagoons bringing about the decimation of the Eastern North Pacific gray whale stock over the next few decades.

During this time, whale hunting remained the symbolic heart of Makah culture but continued to diminish in frequency as it became cost-prohibitive. As whale populations declined, the Makah shifted their resources to pursue more lucrative seal hunting. By the 1890s, Makah schooners were hunting fur seals along the Washington coast and as far north as the Bering Sea.

In short, boarding-school indoctrination and government acculturation policies, combined with a series of devastating epidemics, drastically changed the delicate and complex social dynamic which had supported the traditional Makah whale hunt. These factors, especially when juxtaposed with the severe decline in whale populations, served to discourage the Makah from making the substantial investments needed to pursue traditional whaling.

4. The Tribe's Present Cultural and Subsistence Need for Whaling.

Despite the decline of whaling, the Makah Tribe's interest in retaining their whaling rights and traditions never dissipated. Families passed on whaling stories, traditions, and secrets. The Makah never stopped educating their children about their family whaling traditions. Public schools on the reservation have included whaling in their curricula since the 1960s, with

continuous efforts since 1981. Whaling designs and crests still decorate public buildings and private homes. The whaling displays in the Makah Tribe's museum have kept the tradition of whaling alive.

For the past three decades, the Makah have been engaged in a concerted effort to revive their cultural traditions. The Tribe believes that revival of these traditions is needed to combat the social disruption resulting from the rapid changes of the past century and a half. Teenage pregnancies, high school dropouts, substance abuse problems, and an increasing juvenile crime rate indicate that the Makah community is still in flux and that the enormous social disruption caused by epidemics, boarding schools, and federal acculturation policy is still not over. Entire social, cultural, subsistence, and ceremonial institutions were repressed, eradicated, or decimated; without substitution of structural equivalents.

To reverse these disturbing trends, the Makah have reinstituted numerous song, dance and artistic traditions and operated a program to restore the Makah language to spoken proficiency on the reservation. The Makah Cultural and Research Center has been instrumental in the revival of many cultural traditions. Given the centrality of whaling to the Tribe's culture, a revival of subsistence whaling is necessary for the Makah to complete this spiritual renaissance and repair the damage done to the Tribe's social structure during the years of forced assimilation. A recent survey showed that this view is supported by a majority of Makah households.[5]

Continuation and expansion of subsistence whaling will also help address the socioeconomic deprivation experienced by many tribal members. The seasonal unemployment rate on the Makah Reservation is 51 percent, with almost 49 percent of Makah households living in poverty and 59 percent living in substandard housing. According to the 2000 census, median household income on the reservation is approximately $24,000 compared with $46,000 for Washington state as a whole.

Both historically and today, the Makah have addressed economic deprivation by relying on the sea for subsistence. Currently, 85 percent of Makah households have someone in their household who fishes and 63 percent of these households list fishing as the major occupation in their home. Even households without a fisherman derive food, money, or other goods from a fisherman who is a relative or a friend. Fish is a medium of exchange on the reservation and all Makah households participate in reciprocal networks that involve fish at some level of exchange.

A majority of Makah households use traditional Makah foods at least once a week. These include such unique traditional foods as fermented salmon eggs, smoked fish heads and backbones, halibut cheeks and gills, and dried fish. According to a recent analysis, the Makah's annual per capita consumption of fish is 126 pounds, some eight times higher than for the average American. While seafood comprises 55 percent of the Makah diet, it represents only 7 percent of the diet of the average American.

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[5] According to the 2000 census, there are 1356 Makahs living in 471 households on the Reservation. Another 1,117 Makahs live off the Reservation.

Information regarding the Tribe's successful whale hunt in 1999 illustrates the potential for wide-ranging cultural and subsistence benefits from whaling. Thirty-nine percent of households indicated that they participated in whaling-related ceremonial activities, 30 percent of households have cooked whale meat, and 81 percent of Tribal members reported having eaten whale products. An overwhelming number of community members were present when the first whale was landed at Neah Bay in 1999 and 80 percent attended the Tribal celebration of the first whale hunt. Most Makah surveyed felt that the restoration of whaling had improved social and cultural conditions on the Reservation. These data demonstrate that the Makah are fully capable of restoring subsistence whaling to a central place in their culture, economy, and way of life.

B. The Tribe's Recent Efforts to Exercise Its Whaling Rights.

Gray whales were first given international protection from commercial whaling in 1937. By 1993, NOAA determined that the Eastern North Pacific (ENP) stock of gray whales had recovered to near its estimated original population size. 58 Fed. Reg. 3121 (Jan. 7, 1993). NOAA removed the ENP stock from its list of endangered and threatened species on June 16, 1994. 59 Fed. Reg. 21,094.

Once NOAA determined that the protections of the Endangered Species Act were no longer necessary, the Tribe notified NOAA that it wished to reinitiate a ceremonial and subsistence gray whale hunt. Although the Tribe had an express treaty right, the Tribe chose to move forward in cooperation with the United States government and seek an aboriginal subsistence whaling quota from the IWC. In 1996, NOAA agreed to seek IWC approval of a quota of five gray whales per year for the Tribe. The Tribe agreed in turn that if the IWC granted the quota, the Tribe would use the whales only for subsistence purposes and would cooperatively manage the hunt with the Federal government. The United States presented the Tribe's quota request to the IWC at its 1996 meeting but the IWC failed to approve the proposal.

In 1997, NOAA entered into a new agreement with the Makah Tribe. To address public concerns about so-called "resident" whales, the new agreement provided that whaling would occur only in the "open waters of the Pacific Ocean." NOAA also published an environmental assessment (EA) which concluded that the Makah whaling proposal would result in no significant environmental impacts.

At the 1997 IWC meeting, the Tribe's quota request was included as part of a joint United States-Russian proposal for a block quota of 620 whales over the five year period from 1998 through 2002. The United States and Russia explained to the IWC that 20 whales from this joint quota would be made available to the Makah Tribe subject to a cap of five whales per year. On October 23, 1997, the IWC approved the joint quota request by consensus. The IWC renewed the joint quota for another five years (2003-2007) at its 2002 meeting.

After the IWC approved the quota, the Makah Tribe adopted a gray whale management plan that included measures to ensure a humane hunt, such as requiring the use of a high-powered rifle, as well as training requirements, a permit system, and monitoring and enforcement

provisions. In 1998, NOAA published a domestic quota of five gray whales per year for the Makah Tribe. 63 Fed. Reg. 16,701 (Apr. 6, 1998). Tribal whalers began preparing for the hunt in 1998 but no hunting occurred until the spring of 1999. In May 1999, a Tribal whaling crew hunted on four occasions and struck one gray whale. Once struck, the whale was dispatched eight minutes later with a high-powered rifle. The whale was towed back to Neah Bay where ceremonies were held, the whale was butchered, and the meat and blubber were distributed and consumed throughout the community. No additional whale hunting occurred in 1999. Two crews hunted on at least seven different occasions during the spring of 2000 but no whales were struck or landed.

On June 9, 2000, a divided panel of the Ninth Circuit reversed an earlier district court decision and held that NOAA violated the National Environmental Policy Act by entering into an agreement with the Tribe committing the government to support the Tribe's whaling proposal before the government had completed an EA. *Metcalf v. Daley*, 214 F.3d 1135, 1145 & n.3 (9th Cir. 2000). The majority did not identify any specific deficiency in the government's environmental analysis. As a remedy, the Court ordered NOAA to "suspend implementation" of the cooperative agreement, and "prepare a new EA." *Id.* at 1146.

The Tribe suspended its hunt immediately after the Ninth Circuit's ruling. NOAA rescinded the cooperative agreement and began work on a new EA. In response to public comments, NOAA consulted with the Tribe and expressed concerns about the impact of the hunt on the Pacific Coast Feeding Aggregation (PCFA), a group of approximately 200 to 250 gray whales that forage in the summer along the Pacific coast rather than migrating to more northerly feeding grounds in the Bering Sea. Although NOAA found no scientific basis to treat the PCFA as a discrete stock of marine mammals, NOAA advised the Tribe that it intended to evaluate the impacts of the Tribe's hunt on the PCFA. The Tribe addressed these concerns by revising its Management Plan to limit the number of whales that could be struck outside of whale migration periods or in the Strait of Juan de Fuca to a maximum of five strikes during the years 2001 and 2002 combined (or 2.5 strikes per year) – the low end of the PBR limit for the PCFA calculated by NOAA in its 2001 EA (NMFS 2001). The Tribe also adopted additional measures in its revised Management Plan to address public concerns about the safety of the hunt (Makah Tribal Council 2001).

After the Tribe adopted its revised Management Plan, NOAA published a second EA which found that the Makah whale hunt, conducted in accordance with the revised Management Plan, would have no significant environmental impacts (NMFS 2001). After the publication of the second EA, NOAA and the Tribe negotiated a new cooperative agreement and on December 7, 2001, NOAA published a quota of five gray whales for the Makah Tribe for the year 2002. 66 Fed. Reg. 64,378 (Dec. 13, 2001).

The new EA and quota were challenged in *Anderson v. Evans*, 371 F.3d 475 (9th Cir. 2004). The United States District Court for the Western District of Washington upheld NOAA's issuance of the quota and the second EA. However, the Ninth Circuit Court of Appeals reversed. The Ninth Circuit held that, notwithstanding the Tribe's whaling rights under the Treaty of Neah Bay, the Secretary of Commerce must waive the MMPA moratorium on taking marine mammals

and a issue a permit under the MMPA before NOAA can authorize a tribal harvest of gray whales for ceremonial and subsistence purposes. In addition, the court held that NOAA should have prepared an Environmental Impact Statement (EIS) before authorizing a Makah gray whale quota because there were questions over the local impacts of the hunt on the gray whales that feed off of the Washington coast. The Court emphasized that it was *not* holding that the Tribe's treaty right to take whales had been abrogated, but only that NOAA must follow the MMPA waiver and/or permit process before permitting the Tribe to exercise that right. This waiver application is intended to address the requirements imposed by the *Anderson* decision.

III. Applicable Law.

A. Treaty of Neah Bay.

The Treaty of Neah Bay (Appendix B) is the only treaty between the United States and an Indian Tribe which expressly reserves the right to hunt marine mammals. Article IV of the Treaty of Neah Bay provides:

> The right of taking fish *and of whaling* or sealing at usual and accustomed grounds and stations is further secured to said Indians in common with all citizens of the United States. . .

12 Stat. at 939 (emphasis added).

The Tribe's whaling and sealing rights under the Treaty of Neah Bay have not been abrogated by the MMPA. "Absent explicit statutory language, [the Supreme Court] has been extremely reluctant to find congressional abrogation of treaty rights." *Washington v. Washington Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658, 690 (1979). In order to abrogate Indian treaty rights, Congress must make its intention to abrogate those rights "clear and plain." *United States v. Dion*, 476 U.S. 734, 738-39 (1986). Thus, where a statute does not expressly abrogate Indian treaty rights, "[w]hat is essential is *clear evidence* that Congress *actually considered* the conflict between its intended action on the one hand and Indian treaty rights on the other, and *chose* to resolve that conflict by abrogating the treaty." *Id*. at 740 (emphasis added); *see also Minnesota v. Mille Lacs Band*, 526 U.S. 172, 202 (1999).

There is no evidence that Congress was even aware of the Makah Tribe's unique treaty right to take marine mammals when it enacted the MMPA, much less that it *chose* to abrogate those rights. On the contrary, neither the MMPA nor its legislative history even mention Indian treaty rights until Congress amended the MMPA in 1994. Far from abrogating those rights, the 1994 Amendments expressly preserved them. Section 14 of the 1994 Amendments provides: "Nothing in this Act including any amendments to the Marine Mammal Protection Act of 1972 made by this Act alters or is intended to alter any treaty between the United States and one or more Indian Tribes." Pub. L. 103-238, § 14 (Apr. 30, 1994); *see* Historical and Statutory Notes to 16 U.S.C. § 1361. Congress' stated intent in enacting this disclaimer was to "reaffirm that the MMPA does not in any way diminish or abrogate protected Indian treaty fishing or hunting rights." S. Rep. No. 220, 103rd Cong., 2nd Sess, 1994 USCCAN 514, 534. The language and legislative history of the MMPA thus evince absolutely *no* Congressional intent to abrogate the Tribe's Treaty right to take marine mammals.

It has been argued that the MMPA abrogates Indian treaty rights because it provides an exemption only for Alaska Natives but not other native groups. This argument misses the mark because Alaska Natives have no *treaty* rights to take marine mammals. The enactment of a special provision granting Native Alaskans special hunting rights cannot by negative implication abrogate the rights of other native groups that were already guaranteed such rights by treaty. In

United States v. Bresette, 761 F. Supp. 658, 663 (D. Minn. 1991), it was held that a similar Alaska Native exception in the Migratory Bird Treaty Act (MBTA) did *not* abrogate Indian *treaty* rights.[6]

Under well-established case law, the Tribe's unabrogated rights to take marine mammals are subject to regulation only where "necessary for conservation" of a particular marine mammal stock or species. *Washington v. Washington Passenger Fishing Vessel Assn.*, 443 U.S. 658, 682 (1979) ("treaty fishermen immune from all regulation save that required for conservation"); *Puyallup Tribe v. Department of Game*, 391 U.S. 392, 401 n.14 (1968) (power of the State to impose time and area restrictions on treaty right fishing is "measured by whether regulations are 'necessary' for the conservation of fish"); *Tulee v. Washington*, 315 U.S. 681, 684-85 (1942) (State may regulate the exercise of treaty fishing rights only if regulations are "necessary for the conservation of fish"). Federal courts have applied the conservation necessity principle to both state and federal regulations. *Anderson*, 371 F.3d at 497, n.21; *see also Midwater Trawlers Cooperative v. Dept. of Commerce*, 282 F.3d 710, 718-19 (9th Cir. 2002) (United States must employ conservation necessity principle when setting tribal fishing allocations); *United States v. Williams*, 898 F.2d 727, 730 & n.4 (9th Cir. 1990) ("government [has] the burden of establishing the conservation necessity of state *and federal* wildlife laws against members of tribes with hunting and fishing treaty rights").

The "conservation necessity" principle is not weakened by the "in common with" language in the Treaty. The purpose of that language was to secure access for non-Indians to the Tribe's usual and accustomed grounds, not to provide a basis for restricting the Tribe's hunting and fishing rights. *United States v. Washington*, 384 F. Supp. 312, 357 (W.D. Wash. 1974) (nothing to indicate that Tribe was "told that its existing fishing activities or tribal control over them would in any way be restricted or impaired by the treaty"), *aff'd*, 520 F.2d 676 (9th Cir. 1975), *cert. denied*, 423 U.S. 1086 (1976).

In the Indian treaty rights context, the term "conservation" is defined restrictively to mean "those measures which are reasonable and necessary to the *perpetuation of a particular run or species*." *Id.* at 342 (emphasis added). The *government* has the "burden of proof" in demonstrating a "conservation necessity" exists. *Id.* To carry its burden, the government must show that:

- a "specific statute or regulation is required to prevent demonstrable harm to the actual conservation of fish,"

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[6] The Bald Eagle Protection Act (BEPA) which was held to abrogate treaty rights in *United States v. Dion*, 476 U.S. 734, 740-43 (1986), is distinguishable from the MMPA. The BEPA contains a sweeping prohibition on the taking of eagles with a narrow exception allowing the Secretary of the Interior to issue permits allowing eagles to be taken "for the religious purposes of Indian tribes." *Dion*, 476 U.S. at 740, citing 16 U.S.C. § 668a. The legislative history of the BEPA clearly showed that Congress was aware of Indian on-reservation hunting of eagles, considered such hunting to be part of the problem calling for the legislation, and "expressly chose to set in place a regime in which the Secretary of the Interior had control over Indian hunting, rather than one in which Indian on-reservation hunting was unrestricted." *Dion*, 476 U.S. at 743. By contrast, the MMPA provides numerous exceptions to the moratorium on taking marine mammals and contains *no* provisions addressing Indian *treaty* harvests.

- "existing tribal regulation or enforcement is inadequate to prevent demonstrable harm to the actual conservation of fish," and,

- "the conservation required cannot be achieved to the full extent necessary . . . by other less restrictive means or methods."

Id. at 415. Since *United States v. Washington*, these standards have been accepted and applied as established law. *See Midwater Trawlers*, 282 F. 3d at 718-19; *Shoshone-Bannock Tribes v. Fish and Game Comm'n*, 42 F.3d 1278, 1283 (9th Cir. 1994); *Williams*, 898 F.2d at 730; *United States v. Oregon*, 718 F.2d 299, 304 (9th Cir. 1983); *United States v. Michigan*, 653 F.2d 277, 279 (6th Cir.), *cert. denied*, 454 U.S. 1124 (1981); *Lac Courte Oreilles Band v. Wisconsin*, 668 F. Supp. 1233, 1236, 1241 (W.D. Wis. 1987); *Mille Lacs Band v. Minnesota*, 952 F. Supp. 1362, 1380 (D. Minn.), *aff'd*, 124 F.3d 905 (8th Cir. 1997), *aff'd*, 526 U.S. 172 (1999).

In sum, the Treaty of Neah Bay has not been abrogated and provides the Makah Tribe with special whaling rights not shared by other United States citizens. NOAA may regulate the exercise of these rights only if it can demonstrate that its regulations are necessary for conservation. To satisfy the "conservation necessity" standard, federal regulations restricting the Tribe's whaling rights may be promulgated only where necessary to preserve a particular species or stock of whales and, taking existing Tribal regulations into consideration, where they are the least restrictive means available to achieve this purpose.

B. Federal Trust Responsibility.

Courts have long recognized that a "special relationship" exists between the United States and Indian tribes which provide the Constitutional basis for legislation, treaties, and Executive Orders that grant unique rights to Indian tribes. *Morton v. Mancari*, 417 U.S. 535, 551-53 (1974). This relationship imposes fiduciary duties upon the government to faithfully carry out treaty and other legal mandates enacted for the benefit of Indian tribes. *Seminole Nation v. United States*, 316 U.S. 286, 296-97 (1942) *Cherokee Nation v. Georgia*, 30 U.S. 1(5 Pet.) (1831); *see also* Chambers, *Judicial Enforcement of the Federal Trust Responsibility*, 27 Stan. L. Rev. 1213 (1975); Cohen, *Handbook of Federal Indian Law* 220-21 (1982 ed.). These fiduciary obligations are especially strict where they involve implementation of treaty provisions:

> In carrying out its treaty obligations with the Indian tribes, the Government is something more than a mere contracting party. Under a humane and self-imposed policy which has found expression in many acts of Congress and numerous decisions of [the Supreme] Court, it has charged itself with moral obligations of the highest responsibility and trust.

Seminole, 316 U.S. at 296-97.

The scope of the Federal trust relationship is broad and applies to all federal agencies. *Pyramid Lake Paiute Tribe v. United States Navy*, 898 F.2d 1410, 1420 (9th Cir. 1990); *Nance v.*

Environmental Protection Agency, 645 F.2d 701, 711 (9th Cir.), *cert. denied*, 454 U.S. 1081 (1981). The United States government has an obligation to protect tribal property, including Indian hunting and fishing rights. *Lincoln v. Vigil*, 508 U.S. 182, 194 (1993) ("The law is 'well established that the Government in its dealings with Indian tribal property acts in a fiduciary capacity.'") (quoting *United States v. Cherokee Nation*, 480 U.S. 700, 707 (1987)); *Pyramid Lake*, 898 F.2d at 1420. Federal agencies have a duty to "represent the Tribe's interests forcefully despite [their] other representative obligations."[7] *White Mountain Apache Tribe v. Hodel*, 784 F.2d 921, 925 (9th Cir.) *cert. denied*, 479 U.S. 1006 (1986).

The requirements of the general trust responsibility are enhanced by the language and negotiating history of the Treaty of Neah Bay. Article IV of the Treaty of Neah Bay "secures" to the Tribe the right of whaling at usual and accustomed grounds and stations. In the treaty negotiations, the Tribe was "invited by the white negotiators to rely and in fact did rely on the good faith of the United States to protect that right." *Fishing Vessel*, 443 U.S. at 667. The government's "promise that the treaties would protect [the Tribe's] source of food and commerce were crucial in obtaining the Indian's assent." *Id.* at 676. In short, NOAA has a special obligation to consider and protect the treaty whaling rights of the Makah Tribe when it considers the Tribe's request for a waiver from the MMPA take moratorium.

C. International Convention on the Regulation of Whaling.

The International Convention on the Regulation of Whaling (ICRW) was signed in 1946 to "provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry." 62 Stat. 1716 (Dec. 2, 1946). The ICRW establishes the IWC, which is composed of one member from each signatory government, whose primary function is to adopt whaling regulations known as the "Schedule." The Schedule and all amendments thereto are deemed to be part of the ICRW itself. Arts. I, III, V. Amendments to the Schedule may not allocate quotas to any group of whalers. Art. V, § 2.

The original Schedule prohibited the harvest of gray whales, "except when the meat and products of such whales are to be used exclusively for local consumption by the aborigines." 62 Stat. at 1723. Since the late 1970s, aboriginal subsistence whaling has been subject to quotas and other regulations adopted by the IWC. Paragraph 13 of the Schedule sets strict guidelines for the setting of aboriginal subsistence whaling quotas. For stocks at or above a maximum sustained yield level (MSYL), aboriginal subsistence catches are permitted so long as total removals do not exceed 90 per cent of maximum sustained yield (MSY). For stocks below the MSYL but above a

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[7] These trust obligations have been implemented in Secretarial Order No. 3206, issued June 5, 1997 and signed by the Secretaries of Interior and Commerce, which directs NOAA to carry out its responsibilities under the Endangered Species Act in a manner that harmonizes the Federal trust responsibility to tribes, tribal sovereignty, and NOAA's statutory missions, so as to avoid or minimize the potential for conflict and confrontation. Executive Order 13175, dated November 6, 2000, requires agency policy making to be guided by principles of respect for Indian treaty rights and responsibilities that arise from the unique legal relationship between the Federal Government and Indian tribal governments. On issues relating to treaty rights, the Executive Order directs each agency to explore and, where appropriate, use consensual mechanisms for developing regulations.

certain minimum level, aboriginal subsistence catches are permitted so long as they are set at levels which will allow whale stocks to move to the MSYL.[8]

In 2002, the IWC renewed the aboriginal subsistence gray whale quota for the Eastern North Pacific stock and authorized the taking of up to 620 gray whales between 2003 and 2007, with a maximum of 140 in any one year. By bilateral agreement between the United States and the Russian Federation, up to 20 whales may be taken by the Makah Tribe over the five year quota period, with a maximum of five whales in any one year. The IWC Schedule also prohibits the taking of a gray whale calf or a gray whale accompanied by a calf.

The United States has implemented the ICRW through the Whaling Convention Act (WCA). 16 U.S.C. §§ 916 *et seq.* Pursuant to the WCA, NOAA has adopted aboriginal subsistence whaling regulations which are set out at 50 C.F.R. Part 230. The regulations permit whaling captains designated by a Native American whaling organization which has been recognized by NOAA to engage in subsistence whaling in accordance with IWC quotas and regulations. 50 C.F.R. §§ 230.5, 230.6. NOAA has entered into three cooperative agreements with the Tribe (in 1996, 1997, and 2001) recognizing the Makah Tribal Council as a Native American whaling organization and permitting the Council to issue permits to whaling captains consistent with IWC quotas and regulations.

D. MMPA.

1. Policies and Purposes of the Act.

The MMPA was adopted in 1972 out of concern that "certain species and population stocks of marine mammals are, or may be, in danger of extinction or depletion as a result of man's activities." 16 U.S.C. § 1361(1). It is the goal of the MMPA that marine mammal "species and population stocks should not be permitted to diminish beyond the point at which they cease to be a significant functioning element in the ecosystem of which they are a part." *Id.* § 1361(2). Consistent with this major objective, species and population stocks "should not be permitted to diminish below their optimum sustainable population." *Id.* The MMPA defines the term "optimum sustainable population" to mean:

> with respect to any population stock, the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and health of the ecosystem of which they form a constituent element.

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[8] Paragraph 10(a) of the Schedule defines a "Sustained Management Stock" (SMS) as any "stock which is not more than 10 per cent of Maximum Sustainable Yield (hereinafter referred to as MSY) stock level below MSY stock level, and not more than 20 per cent above that level; MSY being determined on the basis of the number of whales."

16 U.S.C. § 1362(9).

2. Waiver and Permit Requirements.

Section 101(a) of the MMPA imposes a moratorium on the taking of marine mammals, except under regulations and permits adopted by the Secretary of Commerce under the Act. 16 U.S.C. § 1371(a). However, the Secretary may waive the moratorium if he determines, "on the basis of the best scientific information available," in consultation with the Marine Mammal Commission, and "having due regard for the distribution, abundance, breeding habits and times and lines of migratory movements" of the animals in question, that a waiver is "compatible" with the MMPA. *Id.* § 1371(a)(3)(A). To waive the moratorium, the Secretary must also "be assured that the taking of such marine mammals is in accord with sound principles of resource protection and conservation as provided in the purposes and policies" of the Act. *Id.* A waiver of the moratorium requires the promulgation of regulations and in some cases may also require the issuance of permits. *Id.*

The process for adopting regulations authorizing the taking of marine mammals is set out in Section 103 of the MMPA, 16 U.S.C. § 1373. Such regulations must be promulgated "on the basis of the best scientific evidence available" and in consultation with the Marine Mammal Commission. 16 U.S.C. § 1373(a). The regulations must "insure that such taking will not be to the disadvantage of those species and population stocks, and will be consistent with the purposes and policies" of the Act. *Id.* In prescribing such regulations, the Secretary must give full consideration to all relevant factors, including the effect of such regulations on existing and future levels of marine mammal species and population stocks; the government's existing international treaty and agreement obligations; the marine ecosystem and related environmental considerations; the conservation, development and utilization of fishery resources; and the economic and technological feasibility of implementation. *Id.* § 1373(b).

MMPA take regulations may include restrictions on the number of animals which may be taken by permit in any calendar year; the age, size or sex of the animals which may be taken; the season or other time period within which animals may be taken; and the manner and locations in which animals may be taken. 16 U.S.C. § 1373(c). Any such regulations must be made "on the record after opportunity for an agency hearing on both the Secretary's determination to waive the moratorium . . . and on such regulations." *Id.* § 1373(d). In addition to other requirements imposed by law with respect to agency rulemaking, the Secretary must publish and make available to the public before or concurrent with the publication in the Federal Register of his intention to prescribe regulations a statement setting forth:

(1) the estimated existing levels of the species and population stocks of the marine mammal concerned;

(2) the expected impact of the proposed regulations on the optimum sustainable population of such species or population stock;

(3) the evidence before the Secretary upon which he proposes to base such

regulations; and

(4) any studies or recommendations made by or for the Secretary or the Marine Mammal Commission that relate to the establishment of such regulations.

Id. The process for issuing permits is set out in Section 104 of the MMPA, 16 U.S.C. § 1374. Any permit issued under Section 104 of MMPA must be consistent with the regulations promulgated under Section 103 and specify the number and kind of animals which are authorized to be taken, the location and manner in which they may be taken, the period during which the permit is valid, and any other terms and conditions deemed appropriate by the Secretary. *Id.* § 1374(b). To issue a permit, the Secretary must also determine that the proposed manner of taking will be humane.

3. The Potential Biological Removal (PBR) Approach to Achieving Optimum Sustainable Population Levels.

In 1994, Congress amended the MMPA to incorporate the potential biological removal (PBR) approach to measuring effects of marine mammal takes on the optimum sustainable population (OSP) of stocks and populations. The need for the PBR approach was brought on by the decision in *Kokechik Fishermen's Ass'n v. Secretary of Commerce*, 839 F.2d 795 (D.C. Cir. 1988), which held that NOAA could not issue a permit for the incidental taking of one marine mammal species in a commercial fishery where the fishing operation also incidentally took other species and insufficient information existed to determine the population status of those species.

Following *Kokechik*, Congress amended the MMPA to establish a five-year interim exemption from the Act's prohibition on taking marine mammals incidental to most U.S. commercial fishery operations, while directing NOAA to use the five-year period to collect data on marine mammal stocks and the extent of commercial fishery interactions with those stocks, and to develop a proposed regime to govern interactions between commercial fishing operations and marine mammals after the exemption expired.

NOAA issued its proposed regime along with a legislative environmental impact statement in November 1992. As explained by the House Committee which reported out the 1994 Amendments to the MMPA:

> The goal of the proposal – like the goal of the Act – was to have all marine mammal stocks reach their optimum sustainable population [OSP]. NMFS proposed that levels of incidental take quotas be determined based on the concept of "Potential Biological Removal" (PBR): the maximum number of animals, excluding natural mortalities, that may be removed from a population without affecting its ability to reach or maintain OSP.

H.R. Rep. No. 439, 103rd Cong., 2d Sess. (Mar. 21, 1994).

Congress enacted the PBR approach into law in the 1994 Amendments to the MMPA.

Pub. L. 103-238, 108 Stat. 544 (Apr. 30, 1994). The 1994 Amendments incorporate the following definition into Section 3 of the Act:

> The term "potential biological removal level" means the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. The potential biological removal level is the product of the following factors:
>
> (A) The minimum population estimate of the stock.
>
> (B) One-half the maximum theoretical or estimated net productivity rate of the stock at a small population size.
>
> (C) A recovery factor of between 0.1 and 1.0.

16 U.S.C. § 1362(20).

The 1994 Amendments also required NOAA to produce stock assessment reports (SARs) for each marine mammal stock which occurs in waters under the jurisdiction of the United States. These SARs must be based on the best scientific information available and describe for each stock, *inter alia*, its geographic range, including any seasonal or temporal variation in its range; an estimate of the stock's minimum population size, its current and maximum net productivity rates and current population trend; an estimate of the annual human-caused mortality and serious injury of the stock by source; and an estimate of the potential biological removal level for the stock, describing the information used to calculate it, including the recovery factor. 16 U.S.C. § 1386(a). SARs must be revised at least once every three years.[9] *Id.* § 1386(c).

In accordance with the 1994 Amendments to the MMPA, NOAA currently evaluates all human-caused mortalities in relation to a stock's PBR level. The PBR approach is NOAA's established management strategy for achieving the primary goal of the MMPA, which is to prevent any marine mammal stock from being reduced below its OSP level.[10]

[9] Congress addressed the issue of takings incidental to commercial fisheries by requiring the development of incidental take plans designed to reduce incidental takes of stocks below the PBR level. *See* 16 U.S.C § 1387(f). Subsistence harvests of marine mammals by Alaska Natives were not affected by the PBR calculations. *Id.* § 1386(e).

[10] NOAA's most recent stock assessment for the Eastern North Pacific stock of gray whales is for 2003 (Angliss and Lodge 2004). The stock assessment is available at: http://www.nmfs.noaa.gov/prot_res/readingrm/MMSARS/sar2003akfinal.pdf

IV. Life History and Population Status of the Eastern North Pacific Stock of Gray Whales.

A. General Life History and Distribution.

Gray whales (*Eschrictius robustus*) are baleen whales classified in the suborder Mysticeti and are the only species in the monotypic family Eschrichtiidae. The generic name, *Eschrichtius*, was given in recognition of Daniel Eschrict, a 19th century zoologist, and the specific name *robustus* is Latin for "oaken" or "strong." Gray whale nomenclature is further reviewed in Rice and Wolman (1971) and the fossil record and evolution of gray whales is described in Barnes and McLeod (1984).

Gray whales historically existed in both the Pacific and Atlantic Oceans. The Atlantic population was extirpated by the end of the 17th Century (Mead and Mitchell 1984). Gray whales in the Pacific Ocean are divided into two distinct stocks: the Eastern North Pacific gray whale stock (sometimes referred to as the Chukchi-California stock), which is fully recovered from exploitation by commercial whaling and migrates from the Bering and Chukchi Seas to Baja Mexico (Swartz 1986); and the critically depleted Western North Pacific stock (also referred to as the "Korean-Okhotsk" stock) which migrates along the east coast of Asia (Rice and Wolman 1971).

Gray whales are easily distinguished from other whales. Gray whales are gray in coloration and have patches of lice and barnacles, giving them a mottled appearance. They lack a dorsal fin. However, they have a dorsal hump which is followed by a series of knobs or "knuckles" which are distinctly visible as they arch. Adult gray whales are between 11 and 15 m in length, with females being larger than males.

B. Migration.

The Eastern North Pacific stock of gray whales feeds in the summer in the northern Bering and Chukchi Seas and winters off of Baja California, Mexico (Scammon 1874). Wintering gray whales are found within the lagoons and protected waters of the western Baja Peninsula and, to some extent, along the Mexican mainland and in the Gulf of California (Swartz et al. 2000). The northbound migration begins with newly pregnant females, adult males, anestrous females and immature whales of both sexes which leave the wintering grounds around mid- to late-February (Poole 1984) and begin to arrive in the Bering Sea from late-March through May (Braham 1984). Females with calves are the last to leave southern waters and depart between late-March and May (Swartz et al. 2000). Females with calves travel more slowly than whales without calves to accommodate nursing as well as the slower swimming speed of the calves (NMFS 2001). Cow-calf pairs enter the Bering Sea from May through June (Braham 1984).

The southbound migration also occurs in phases. Gray whales are moving out of the Bering Sea by late-November, beginning with near-term pregnant females and followed by oestrus females, mature males, and then juveniles of both sexes (Swartz et al. 2000). Gray whales

begin to arrive in the waters off Baja in late-December and reach highest densities by mid-February (Jones and Swartz 1984). The gray whale migration is approximately 10,000 km each way (Scammon 1874).

The timing of migration at certain points along the Pacific coast is more thoroughly presented in Pike (1962), Swartz (1986), Rugh et al. (1999), and Swartz et al. (2000). According to this data, southbound whales are present along the Washington coast beginning in early December, peaking around 5 January, and ending in the first week of February. Northbound whales are present from late-February into June (NMFS 2001).

On both the northbound and southbound migration, gray whales tend to follow the shoreline, although they also traverse larger expanses of open water. In Washington, northbound migrants averaged 11.9 km from shore (Green et al. 1995), while southbound migrants have been seen up to 47 km from shore (Shelden et al. 1999), with an average distance of 25.2 km from shore (Green et al. 1995). A hypothesis explaining why gray whales are farther offshore during the southbound migration in Washington is that gray whales may take a more direct route from central Vancouver Island to the mouth of the Columbia River, instead of taking the longer route following the coast line (Green et al. 1995). Also, gray whales may feed during the northward migration and therefore travel closer to the coast, while during the southbound migration they already have a positive energy balance when they depart from the Arctic feeding grounds.

C. Reproduction.

Both male and female gray whales become sexually mature between 5 and 11 years of age, with an average of 8 years (Rice and Wolman 1971). Mature females breed in two year cycles, producing a calf every other year (Swartz 1986). Breeding occurs during the southward migration, with a mean conception date of 5 December (Rice and Wolman 1971). Females that have not successfully bred may enter a second estrus phase approximately 40 days later (Rice and Wolman 1971). Gestation lasts 418 days (Rice 1983) with a median birth date of 27 January (Rice et al. 1981). Calves are approximately 4.57 m long at birth (Rice 1983). The sex ratio of calves is 1:1 (Jones and Swartz 1984; Rice and Wolman 1971). Gray whale calves wean in August (Rice and Wolman 1971).

D. Feeding Behavior and Prey.

Gray whales employ a variety of foraging methods including benthic suction, engulfing, and skimming and feed on a wide variety of prey (Nerini 1984). Nerini (1984) reviewed reports on gray whale stomach analyses and listed the presence of over 90 genera. Gray whales primarily feed on benthic invertebrates. In the Arctic, the most common prey item is benthic tube-dwelling amphipods which can be found at densities as high as 23,780 individuals per square meter (Nerini 1984). The benthic foraging behavior is disruptive to the benthos (Oliver and Slattery 1985) and may be considered a specialized type of niche construction (Odling-Smee et al. 1996). The gray whales' ability to use different foraging methods and their ability to prey upon a variety of species may account for their more rapid recovery from commercial whaling in comparison with other great whale species (Nerini 1984; Moore et al. 2001).

Gray whales do not feed significantly during their southbound migration (Perryman and Lynn 2002). Oliver et al. (1983) did not find compelling evidence of benthic feeding in the winter grounds. There are reports of mud plumes observed on the calving grounds (e.g., Norris et al. 1977), but for the most part, it appears that gray whales fast during the winter (Perryman and Lynn 2002) and can lose 11-29% of their weight between the south- and northbound migrations (Rice and Wolman 1971).

E. Natural and Human-Related Mortality.

Natural mortality of gray whales includes predation by killer whales (*Orcinus orca*) (Baldridge 1972; Goley and Straley 1994), disease, entrapment in ice (IWC 2003), starvation, and old age. NOAA Fisheries maintains a stranding database of marine mammals. The average number of gray whales reported as stranded between 1995 and 1998 was 38 per year (Angliss and Lodge 2004). In 1999 and 2000, the stranding rate increased to 273 and 355, respectively (Angliss and Lodge 2004). The actual cause of death for these stranded whales is largely unknown (IWC 2003). Since 2000, the stranding rate has returned to pre-1999 levels (Angliss and Lodge 2004).

Eastern North Pacific gray whales have been traditionally hunted by Eskimos and Chukotka Natives in the Arctic, and by several Tribes from the Aleutians to California (O'Leary 1984). Shore-based commercial whaling occurred in California and Baja California from about the mid-1800's to 1900 (Henderson 1984; Sayers 1984). Modern whaling from ocean-going vessels occurred from 1914 to 1946 and was pursued by the United States, Japan, Norway, and the Soviet Union (Reeves 1984). Gray whales were afforded some protection from commercial harvest by nations that were signatory to the 1937 International Agreement for the Regulation of Whaling and received more complete protection under the 1946 International Convention for the Regulation of Whaling (ICRW) (Reeves 1984). The ICRW banned all commercial harvest of gray whales while continuing to allow for aboriginal subsistence use. From 1959 until 1969, 316 gray whales were taken under scientific research permits issued by the United States Bureau of Commercial Fisheries (now called NOAA Fisheries) (Rice and Wolman 1971; Perryman and Lynn 2002).

Data on aboriginal subsistence gray whale harvest is available on the IWC website (http://www.iwcoffice.org/_documents/table_aboriginal.htm). The Soviet Union operated a large whale catcher ship on behalf of Chukotka Natives between 1967 and 1991, harvesting gray whales at an average rate of 165 gray whales per year from 1985 through 1991. After the collapse of the Soviet Union, aborigines in Chukotka resumed hunting using traditional methods from their own small craft, and averaged an annual harvest of 96 gray whales from 1994 through 2002. Aboriginal hunters in Alaska harvested one gray whale in 1985, two in 1986, one each in years 1988 and 1989, and two in 1995. The Makah Tribe harvested one gray whale in the spring of 1999. As indicated in Section III.C, in 2002, the IWC renewed the gray whale quota for the Eastern North Pacific stock and authorized the taking of up to 620 gray whales between 2003 and 2007, with a maximum of 140 in any one year. By bilateral agreement between the United States

and the Russian Federation, up to 20 whales may be taken by the Makah Tribe over the five year quota period, with a maximum of five whales in any one year (IWC 2002).

Aside from aboriginal harvest, other sources of human-related mortality and serious injury of gray whales include ship strikes (average of 1.2 gray whales per year) and incidental catch in commercial fisheries (average of 8.9 gray whales per year) (Angliss and Lodge 2004).

F. Abundance.

The Eastern North Pacific gray whale stock is considered to be one of the best studied cetacean populations in the world (Swartz 1986) largely because of the stock's close proximity to shore throughout its range. Because the stock migrates close to shore and has a predictable migration window, it is feasible to conduct shore-based sighting surveys to estimate abundance. Gray whales have been surveyed during their southbound migration at or near Granite Canyon, California since 1967 (Buckland and Breiwick 2002; Angliss and Lodge 2004). The raw count data is then transformed into an abundance estimate after accounting for the following factors: a correction for missed whales; a correction for whales passing during periods when no observers are present; differential sightability by observers, pod size, distance offshore, and environmental conditions; errors in pod size estimation; covariance within the corrections due to variable sightability by pod size; and a correction for a difference between diurnal and nocturnal travel rates (Hobbs and Rugh 1999; Rugh et al. 2003).

The population estimate used in the most recent NOAA Stock Assessment Report (Angliss and Lodge 2004) for Eastern North Pacific gray whales is 26,635 (CV = 10.06%; 95% log normal confidence interval = 21,878 to 32,427), which was based on the 1997/98 southbound migrant observation season (Hobbs and Rugh 1999). The population had an intrinsic growth rate of 2.5% (SE = 0.3%) from 1967/68 to 1995/96 (Buckland and Breiwick 2002), despite the annual removal of up to 165 whales by, or on behalf of, Russian natives. Similar abundance surveys were also conducted in the 2000/2001 and 2001/2002 seasons which resulted in abundance estimates of 18,761 (CV = 10%; 95% log-normal confidence interval = 15,249 to 22,812) and 17,414 (CV = 10.06%; 95% log-normal confidence interval = 14,322 to 21,174), respectively (Rugh et al. 2002). Rugh et al. (2003) recalculated the three most recent abundance estimates due to a new computer program for matching sightings and the use of an alternative observation station in 1998 (due to a storm washing out an access road to the usual observation station). The revised estimates are: 27,958 in 1997/98 (CV = 10.21%; 95% log-normal confidence interval = 22,901 to 34,131), 18,246 in 2000/01 (CV = 9.36%; 95% log-normal confidence interval = 15,195 to 21,910), and 16,848 in 2001/02 (CV = 9.49%; 95% log-normal confidence interval = 13,995 to 20,283). The corrected 2001/02 estimate reported in Rugh et al. (2003) is the most reliable and current abundance estimate for this stock, and will be used in the remainder of this document rather than the 1997/98 abundance estimate reported in the most recent NOAA Stock Assessment Report (Angliss and Lodge 2004).

Trends in gray whale calf production have been monitored using three methods: surveying for calves from shore and from aircraft in central California during the northbound migration (Perryman et al. 2002; Perryman et al. 2004); counting calves from shore at Granite

Canyon, California, during the southbound migration (Shelden and Rugh 2001); and conducting aerial and vessel surveys for calves in the breeding lagoons of Baja California (Urban et al. 2003). Calf production is used in modeling population dynamics of gray whales (Wade and Perryman 2002). Gray whale calf production has also been correlated with the distribution of seasonal ice in the Arctic (Perryman et al. 2002).

Wade and Perryman (2002) calculated the carrying capacity (K) for this stock to be approximately 22,000 gray whales. Therefore, the population likely surpassed its carrying capacity in the late 1990's when it reached an estimated abundance of almost 28,000 whales (Rugh et al. 2003). The increased stranding rate observed in 1999 and 2000 (Le Boeuf et al. 2000; Angliss and Lodge 2004), as well as the low calf production observed over this time period (Le Boeuf et al. 2000; Perryman et al. 2002) were probably symptoms of the fact that the Eastern North Pacific stock of gray whales had exceeded its carrying capacity. The stranding rate has returned to normal levels (Angliss and Lodge 2004) as has calf production. The 2004 calf production estimate was greater than any other recorded (Perryman et al. 2004). As noted by Perryman et al. (2004), the ENP population might actually be higher than the most recent abundance estimates because some animals may not have migrated as far south as Granite Canyon in 2000/01 or 2001/02 (Rugh et al. 2003).

G. Pacific Coast Feeding Aggregation.

Most gray whales from the Eastern North Pacific stock migrate north of the Aleutian chain to feed during the summer and fall. However, some gray whales do not make a full migration and have been observed from Kodiak, Alaska to California during non-migratory periods (Calambokidis et al. 2003). Whales in this group arrive and depart from their wintering grounds concurrently with the overall population that migrates to the Arctic (Calambokidis et al. 2002a). Pike (1962) referred to this group as "summer residents." Because the term "summer resident" is a misnomer, NMFS (2001) referred to this group as the Pacific Coast Feeding Aggregation (PCFA). For the purposes of this request, the "PCFA" is defined as any whale found in the photo-identification database maintained by NOAA's National Marine Mammal Laboratory (NMML) which has been observed south of Alaska from June 1 through November 30 in any year.

Photo-identification studies of gray whales in the PCFA have been undertaken since 1970 (Hatler and Darling 1974) using unique markings on the sides of the gray whale which are revealed as the whales arch (Darling 1984). Darling (1984) hypothesized that gray whales seen along the coast of British Columbia were apart of a larger 'northwest coast' group that numbered at least 100 animals. Calambokidis et al. (2002a) reported that there were approximately 180 gray whales in the PCFA based on a mark-recapture abundance estimate for 1998. Calambokidis et al. (2002b), using a similar approach, reported an abundance estimate for the PCFA of 322 gray whales for 2001; and reported approximately 270 gray whales for 2002 (Calambokidis et al. 2003) (both papers only use whales seen after June 1 because whales that are seen prior to that date are typically never seen again). Calambokidis et al. (2004) used a dataset from 1998-2003 from California to Northern Vancouver Island and whales observed after June 1 and used an open population model approach to derive an abundance estimate of 200 gray whales (CV = 10.3%) for

2003, with a 2003 estimate of 176 whales (CV = 11.6%) based strictly on whales that were seen in multiple years.

In addition to the utility of photo-identification for mark-recapture population analyses and abundance estimates, the ability to identify individual gray whales through photo-identification also provides an opportunity to assess movement, tenure, and site fidelity to the Pacific coast south of Alaska. Those gray whales from the PCFA that have longer interannual sighting histories also tend to be seen in multiple survey regions throughout the PCFA (Calambokidis et al. 2004). As an example of the wide-ranging movements made by PCFA whales, a single whale observed in Kodiak, Alaska in 2002 had previously been seen along the west coast of Vancouver Island in 1999, as early as 1995 in the Cape Caution, BC area, and as early as 1992 in the Clayoquot Sound, BC survey area (Calambokidis et al. 2003). Another whale observed off southern Vancouver Island on 6 July 2003 was later seen in Kodiak on 9 August 2003; corresponding to a direct route movement of 1,104 nautical miles in 34 days (Calambokidis et al. 2004)

Calambokidis et al. (2004) reported that the length of time a whale was observed within a season proved to be a valuable tool in understanding the overall dynamics of the PCFA. A minimum residency tenure (MRT), defined as the time between first and last dates photographed within a year, was calculated to examine the likelihood that a particular whale would be seen the following year. Sixty-eight percent of the whales with a MRT of one week or less were seen during July-September, well outside the migration time period. Whales with longer MRTs in their first year observed were more likely to return in subsequent years. The authors suggested that the mechanism for whales with longer MRTs, and thus higher probability of returning the following year, is likely related to the foraging success that they encounter during the previous year.

Calambokidis et al. (2004) noted that while it makes logical sense when comparing interchange rates of gray whales between survey regions south of the Aleutian Island chain that immediately adjacent survey areas show stronger interchange rates in comparison with interchange rates between survey areas further to the north or south of the site, these results also suggest that individual gray whales regularly return to particular feeding areas. Gray whales in the PCFA were most likely to be re-sighted in adjacent survey area, thus indicating fidelity to an area that is smaller than the PCFA region as a whole, but larger than a single survey region (Calambokidis et al. 2004). The area to the north of the Makah U&A (i.e., the Southern Vancouver Island survey area) as well as the survey area to the south of the Makah U&A (i.e., the Oregon survey area) exhibit the highest degree of interchange. Thus, the authors recommended combining these regions as the appropriate geographic range for assessing local impacts and establishing subquotas for the PCFA (Calambokidis et al. 2004). The three survey regions of Oregon, Northern Washington and the Strait of Juan de Fuca (Makah U&A), and Southern Vancouver Island make up the combined survey area are referred to in this document as the ORSVI survey area.

No genetic differences have been detected between the PCFA and the overall migratory population (Steeves et al. 2001). Steeves et al. (2001) reported that there was a male bias in the

PCFA of 1.7 to 1 (males to females; n = 16), although given the small sample size the bias was not considered to be statistically significant. Ramakrishnan et al. (2001) reported a statistically significant male bias in the PCFA of 1.8 to 1 (males to females; n = 45). The potential explanations of the observed sex bias is that either females are feeding elsewhere in the PCFA and are not being sampled by researchers or that the PCFA is not a separate, closed population (i.e., a population that is experiencing only internal recruitment) (Ramakrishnan et al. 2001). Lang et al. (2004) proposed that the reason for the high genetic diversity observed in samples collected during the summer from Western North Pacific gray whales was the dispersal of males from the Eastern North Pacific gray whale stock into Western North Pacific gray whale feeding grounds. Using both simulations and empirical evidence, Ramakrishnan et al. (2001) reject the hypothesis that the PCFA is a maternal genetic isolate and that both the number of haplotypes and the diversity of haplotypes found in the PCFA is greater than other baleen whale populations of similar size. The level of haplotypic diversity in the PCFA (0.93; Ramakrishnan et al. 2001) is comparable to the haplotypic diversity seen in the Eastern North Pacific stock of gray whales (0.95 ± 0.02; LeDuc et al. 2002).

Given the best available information, NOAA has managed the PCFA as part of the Eastern North Pacific stock of gray whales (Swartz et al. 2000; Angliss and Lodge 2004). The IWC recognizes the existence of a feeding aggregation of gray whales along the Pacific Coast south of Alaska, but likewise continues to manage the Eastern North Pacific stock of gray whales as a single stock (IWC 2000). However, to avoid local depletion of a feeding aggregation in which individuals show site fidelity to the region and thereby address the MMPA policy that gray whales remain a "significant functioning element of the ecosystem," 16 U.S.C. § 1361(2), the Tribe's waiver request contains management measures, including time and area restrictions and annual bycatch level (ABL) subquotas, designed to minimize impacts to those whales that exhibit inter-annual site fidelity to the Pacific coast south of Alaska.

V. Expected Impact Of The Requested Waiver.

A. Effects on the Eastern North Pacific Stock of Gray Whales.

One of the primary goals of the MMPA is to maintain marine mammal populations at or above an optimum sustainable population (OSP). 16 U.S.C. § 1361(2) and (6). OSP is defined as "with respect to any population stock, the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element." 16 U.S.C. § 1362(9). NOAA has quantified OSP as a population size which ranges between a stock's maximum net productivity level (MNPL) and its carrying capacity (K). *See* 50 C.F.R. § 216.3.

Wade and Perryman (2002) completed an assessment of the Eastern North Pacific gray whale population that incorporated the time series from 1967/68 to 2001/02. They used four different scenarios using the abundance estimates as well as: (1) using all the calf estimates, (2) using none of the calf estimates, (3) using all of the calf estimates except the 1980 and 1981 estimates, and (4) using all of the calf estimates plus an assumed value in 2002 (which was not available at the time of the analysis), to estimate the carrying capacity to be 22,610 (90% CI = 19,830 to 28,470), 21,740 (90% CI = 19,480 to 35,430), 22,110 (90% CI = 19,840 to 26,880), and 22,590 (90% CI = 20,020 to 30,280), respectively for each scenario. For the purposes of the Tribe's waiver request, K will be expressed as a range between 21,740 and 22,610 animals (the lowest and highest values reported among the four scenarios).

Historically, MNPL has been expressed as a range of values (generally 50 to 70 percent of K) determined theoretically by estimating the stock size in relation to the pre-exploitation stock size, which would produce the maximum net increase in population. 42 Fed. Reg, 12,010 (Mar. 1, 1977). In 1977, the mid-point of this range, 60 percent of K, was used to determine whether dolphin stocks in the eastern tropical Pacific Ocean were depleted. 42 Fed. Reg. 64,548 (Dec. 27, 1977). In 1980, NOAA used the 60 percent value in the final rule to govern the taking of marine mammals as bycatch to commercial fishing operations. 45 Fed. Reg. 72,178 (Oct. 31, 1980). More recently, in its 2000 final rule to designate the Cook Inlet stock of beluga whales (*Delphinapterus leucas*) as depleted under the MMPA, NOAA used 60 percent of K as the value to calculate MNPL. 65 Fed. Reg. 34590 (May 31, 2000).

Using the upper and lower range of the values for carrying capacity in Wade and Perryman (2002) and assuming that MNPL = 0.6*K, the MNPL for the Eastern North Pacific stock of gray whales is between 13,044 and 13,566. Hence the OSP for the Eastern North Pacific Stock is a range between 13,044 and 22,610 animals. The most recent abundance estimate (i.e., from the 2001/02 southbound migration season) for the Eastern North Pacific stock of gray whales is 16,848 (CV = 9.49%; 95% log-normal confidence interval = 13,995 to 20,283) (Rugh et al. 2003). Therefore, the Eastern North Pacific gray whale stock is currently above MNPL and is within OSP. Using the abundance estimates reported in Wade and Perryman (2002) and Rugh et al. (2003), the Eastern North Pacific stock of gray whales has been consistently at or above MNPL since the 1979/80 abundance estimate, and it is important to note that during this time

period this stock has undergone sustained harvest by, or on behalf of, aboriginal groups. During the late 1990s, the stock probably exceeded the high end of the OSP range.

The IWC has likewise concluded that the ENP stock of gray whales remains a Sustained Management Stock. As indicated in Section III.C. above, the IWC manages whale stocks in relation to their maximum sustained yield level (MSYL), a concept which is analagous to the MMPA concept of MNPL (the difference being that MSYL considers the age and sex structure of the harvest). In 2002, the IWC Scientific Committee conducted a comprehensive assessment of gray whale stocks and concluded that there was essentially zero probability that the Eastern North Pacific stock was below its MSYL (Wade and Perryman 2002; IWC 2003).

As explained in greater detail in Section III.D.3 above, the 1994 amendments to the MMPA adopted the potential biological removal (PBR) approach for evaluating human-caused mortality to marine mammal stocks. The PBR is defined in the Act as "the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population" 16 U.S.C. § 1362(20). The advantage of managing marine mammals using the PBR approach is that it provides a mechanism for achieving the MMPA goal of managing stocks to reach an OSP level where multi-year population trend data is not available (Wade 1998). A total level of human-caused mortality that is less than the PBR is considered sustainable and consistent with the MMPA's goal of managing marine mammal stocks to achieve their OSP level.

Under 16 U.S.C. § 1362(2), the PBR for a particular marine mammals stock is calculated by taking the product of the following factors: the minimum population of the stock (N_{min}); one-half the maximum theoretical or estimated net productivity rate of the stock at a small population size (R_{max}); and a recovery factor (F_r) between 0.1 and 1.0. This relationship is expressed in Equation 1 below:

$$PBR = N_{min} * 0.5R_{max} * F_r \qquad (1)$$

The "minimum population estimate" refers to an "estimate of the number of animals in a stock that: (A) is based on the best available scientific information on abundance, incorporating the precision and variability associated with such information; and (B) provides reasonable assurance that the stock size is equal to or greater than the estimate" 16 U.S.C. § 1362(27). Wade and Angliss (1997) use the following equation (Equation 2) to calculate N_{min} from an abundance estimate:

$$N_{min} = N/\exp(0.842*[\ln(1+CV(N)^2)]^{½}) \qquad (2)$$

Wade and Angliss (1997) also provide recommendations on choosing the recovery factor, ranging from 0.1 to 1.0, to be used in different scenarios. A recovery factor of 0.1 is to be used as the default recovery factor when a stock is listed as an endangered species under the Endangered Species Act (ESA). A recovery factor of 0.5 should be used for stocks of an unknown status or for stocks that are listed as threatened under the ESA (or as depleted under the MMPA). A

recovery factor greater than 0.5, up to and including a value of 1.0, should be used: (1) when the stock is known to be within OSP; (2) the stock has an unknown status, but is increasing; or (3) when a stock is not listed under the ESA and is undergoing removals by aboriginal hunters.

Using the most recent available and corrected abundance estimate for the Eastern North Pacific stock of gray whales from the 2001/02 southbound migration season of 16,848 (CV = 9.49%; 95% log-normal confidence interval = 13,995 to 20,283) (Rugh et al. 2003), and inserting it into Equation 2, the N_{min} is calculated to be 15,557. While 0.04 is the default R_{max} value for cetaceans when there is inadequate information on life history parameters (Wade and Angliss 1997), NOAA's 2003 Stock Assessment Report for gray whales uses an R_{max} value of 0.047 for the Eastern Northern Pacific stock based on the extensive literature published on the stock's population dynamics (Angliss and Lodge 2004). This literature indicates that there is a 90% probability that the true value of R_{max} is greater than 0.047, a value based on the lower 10^{th} percentile of an estimate derived from an age- and sex-structured model (Wade 2002). The proper recovery factor to be used for this stock is 1.0, since the Eastern North Pacific stock of gray whales is not listed under the ESA and has been undergoing a steady or declining level of removals by aboriginal hunters (Wade and Angliss 1997; NMFS 2001; Angliss and Lodge 2004). Inserting the values for N_{min} of 15,557, the R_{max} of 0.047, and the F_r of 1.0 into Equation 1, the PBR for the Eastern North Pacific stock of gray whales is 366. This value is less than, but more current and accurate than, the PBR value of 575 whales reported in NOAA's 2003 Stock Assessment (Angliss and Lodge 2004) which was based on the uncorrected and outdated 1997/98 abundance estimate.

Angliss and Lodge (2004) estimate the annual average human-related mortality and serious injury of Eastern North Pacific gray whales is 107 animals. This annual average accounts for aboriginal harvest (97 gray whales; data from years 1996-2000), incidental bycatch in commercial fisheries (9 gray whales; data from 1990-2000), and ship strikes (1 gray whale; data from 1996-2000). This estimate of human-caused mortality is less than one-third of the calculated PBR for this stock (366 gray whales). Substituting the annual average Russian allocation of the IWC gray whale quota -- an average of 120 whales per year -- for the value of 97 (based on the conservative assumption that the average quota will be harvested each year), the estimated annual average human-related mortality and serious injury would increase to 130 gray whales (120 from aboriginal harvest; 9 from bycatch; 1 from ship strike). This hypothetical estimate of human-caused mortality is roughly one-third of the calculated PBR for this stock (366 whales).

Any additional human-caused mortality resulting from the Tribe's waiver request will be insignificant in relation to the PBR level for the Eastern North Pacific stock. The Tribe's waiver request includes a ceiling of seven strikes per year and 35 strikes over any five year period. Based on the worst case scenario that each whale that is struck but not landed will die (i.e., 0% chance of survival of struck and lost whales), the greatest estimated annual average human-related mortality would increase from 130 to 137 (127 mortalities resulting from harvest; 9 from bycatch; 1 from ship strike), which still provides a buffer of 229 gray whales between the total level of human-caused mortality and the PBR of 366 whales.

It is also important to note that the Scientific Committee of the IWC provided management advice in 2002 that a take of up to 463 whales per year (the lower of the 5th percentiles of Q_1) is sustainable for at least the medium term (~30 years) (IWC 2003). This level of take is over 350 percent higher than the average annual joint US-Russian quota of 124 whales per year as well as a conservative estimate of all human-caused mortality in a given year.

B. Effects on the Pacific Coast Feeding Aggregation.

For the purposes of this request, the PCFA is defined as any Eastern North Pacific gray whale found in the photo-identification database maintained by NOAA's National Marine Mammal Laboratory (NMML) which has been observed south of Alaska from June 1 through November 30 in any year. Although the PCFA is not a separate stock under the MMPA, the Tribe's waiver request is designed to prevent any depletion of whales that exhibit inter-annual site fidelity to the ORSVI gray whale management area and thereby assure that gray whales remain a "significant functioning element" of the local ecosystem. See 16 U.S.C. § 1361(2). The Tribe's waiver request would accomplish this goal by restricting the hunting season to the migration period (December 1 through May 31) and by prohibiting any hunting in the Strait of Juan de Fuca where gray whales are known to feed. Because no hunting of gray whales will be permitted between June 1 and November 30, and the hunt will not occur in the inside waters of the Strait of Juan de Fuca, those whales exhibiting inter-annual site fidelity to the Pacific coast south of Alaska will not be subject to any intentional harvest under the Tribe's request.

By themselves, these time and area restrictions should reduce impacts to levels that will eliminate any significant risk of local depletion. While gray whales that are from the PCFA may be present at certain times between December 1 through May 31 within the Pacific Ocean area of the Makah U&A and therefore might be subject to incidental harvest under the Tribe's waiver request, the proportion of PCFA whales that will be potentially subject to harvest will be significantly diluted by the much larger migrating population. Assuming that whales from the PCFA are randomly intermixed with the overall stock during the entire migration period and throughout the migration corridor, by dividing the most current abundance estimate of the PCFA of 200 whales (for year 2003; Calambokidis et al. 2004) by the most current abundance estimate for the stock of 16,848 (for season 2001/02; Rugh et al. 2003), there is only a 1.19% chance that any gray whale taken in a Makah whale hunt will be part of the PCFA.

Previous survey data suggests that whales from the PCFA are not randomly intermixed with the overall ENP stock during the latter part of spring migration, and that during the month of May as many as 13 percent of gray whales seen off the north Washington coast may be part of the PFCA (Calambokidis et al. 2000). Assuming a "worst case" scenario, if the Tribe strikes seven whales each year and every one of these whales is struck during the month of May, as many as five whales from the PCFA could be killed over a five-year period.

Accordingly, to provide an added margin of safety, the Tribe will take the following steps to ensure that the incidental take of whales from the PFCA will not reduce the number of whales that exhibit site fidelity to the Pacific coast south of Alaska:

First, as soon as practicable after a successful hunt and in consultation with NMML scientists, the Tribe will photograph the left and right flanks of all harvested whales and compare these photos with the NMML photographic catalog to determine if a harvested whale was part of the PCFA. Calambokidis et al. (1994) provide an example of a stranded gray whale successfully matched to a photographic catalog composed of live individuals. The NMML catalog includes all gray whales that have been photographed in surveys conducted south of Alaska from June 1 through November 30 of any year.

Second, the Tribe will cease hunting in a calendar year if, based on this photographic analysis, suspension of the hunt is necessary to prevent the number of whales harvested from the PCFA catalog from exceeding an annual allowable bycatch level (ABL) for that year. The ABL for the PCFA will be calculated by applying the MMPA's potential biological removal (PBR) methodology to a conservative estimate of the number of gray whales seen in more than one year in the Oregon-Southern Vancouver Island (ORSVI) gray whale survey area and is mathematically defined in Equation 3 below:

$$ABL = N_{min}(ORSVI) * 0.5R_{max} * F_r \quad (3)$$

These additional measures are highly conservative because the incidental harvest of gray whales from the PCFA photographic catalog, which now includes 477 individual whales observed south of Alaska from June 1 through November 30 from 1998-2003 (Calambokidis et al. 2004), is limited by an ABL derived from a much smaller subset of whales – those whales seen in more than one year within the ORSVI gray whale survey area. In addition, application of an ABL on an annual basis provides a further check against local impacts, because the PBR methodology normally permits averaging of human-caused mortality over a three-year time period (Wade and Angliss 1997).

Calambokidis et al. (2004) used an open population model to incorporate several years of photo-identification work from the PCFA to estimate abundance from California to northern Vancouver Island (200 gray whales; CV = 0.103). The authors further divided the overall PCFA abundance estimate to only consider whales that have been seen in previous years to estimate the abundance of whales that may exhibit inter-annual site fidelity to the overall feeding range of the PCFA (176 gray whales; CV = 0.116). The authors also analyzed the abundance of whales that may exhibit inter-annual site fidelity to the ORSVI gray whale management area (150 gray whales; CV = 0.137). This smaller management area was selected based on similar interchange rates between the survey regions and it includes and incorporates all of the Makah U&A. The authors then provide an abundance estimate that only considers whales seen in multiple years within the ORSVI region (122 gray whales; CV = 0.168). As stated in Calambokidis et al. (2004) "…it is both logical and reasonable to use ORSVI as the region for abundance estimation in setting quotas for a harvest of whales from the [Makah U&A] region."

NMFS (2001) used a closed population model, a recovery factor of 0.5 and 1.0, and two abundance estimates (one included observations in California, and the other did not) for the PCFA to calculate a range of PBR estimates for the entire PCFA which ranged from 2.5 to 6.0 animals

per year. The reason cited in NMFS (2001) for using a reduced recovery factor when it calculated the lower range for its PBR estimate for the PCFA was to take a conservative approach of treating the feeding aggregation as a separate management unit. Since that time, there have been new research studies released including an open population analysis using survey data collected from multiple years by Calambokidis et al. (2004) and a more recent genetic analysis (Ramakrishnan et al. 2001). Because the PCFA is part of the same ENP stock, the recovery factor should be the same as for the overall ENP stock. Unlike the proposal reviewed in NMFS (2001), the Tribe's current request takes a more conservative approach regarding impacts to the PCFA. The Tribe will not be conducting hunts from June 1 through November 30, thereby eliminating intentional harvest of whales from the PCFA, and the Tribe proposes using an abundance estimate, converted to an N_{min}, based on the number of returning whales to the ORSVI survey area to calculate an ABL to account for incidental harvest of PCFA whales during the migration period.

The applicable annual ABL will be calculated as follows. We use the 2003 abundance estimate that only considers whales seen in more than one year in the area from Oregon to southern Vancouver Island (122), the most conservative abundance estimate provided in Calambokidis et al. (2004), to calculate an N_{min} of 106 (using Equation 2). An R_{max} of 0.047 is used because the best available science shows that the PCFA is part of the Eastern North Pacific stock of gray whales (Swartz et al. 2000; Angliss and Lodge 2004). A recovery factor of 1.0 is used because: (1) the best available science shows that the PCFA is part of the Eastern North Pacific stock of gray whales (Swartz et al. 2000; Angliss and Lodge 2004), a recovered non-listed stock for which Angliss and Lodge (2004) use a recovery factor of 1.0; (2) the abundance estimates are calculated from an open population model which incorporate multiple years of survey effort; (3) the PCFA area south of Alaska for which the abundance estimate is based has been truncated to address local depletion around the Makah U&A (i.e., ORSVI); and (4) the abundance estimate is based only on whales seen in multiple years (i.e., whales potentially showing site fidelity to the region). Using Equation 3 and inserting an N_{min} of 106, an R_{max} of 0.047, and an F_r of 1.0, the resulting applicable annual ABL is calculated to be 2.49.

Under the Tribe's waiver request, the applicable ABL would be recalculated using the above methodology to reflect the most current survey data. The proposed calculation methodology is highly conservative. For comparison, if one used the 2003 abundance estimate for all of the whales seen in the PCFA (200 whales), which would be converted to an N_{min} of 184 whales (using Equation 2), the ABL would be 4.32 (using Equation 3). Nevertheless, the Tribe proposes to apply the ABL for the smaller ORSVI gray whale survey area and any harvested gray whale will be compared with the NMML photographic catalog for the entire PCFA, not just those whales seen in ORSVI.

In short, given the remote chances of harvesting a single PCFA whale (much less the chance of harvesting two) in the Pacific Ocean during the migration time period and the Tribe's commitment to cease hunting for the remainder of the calendar year to prevent an ABL for that year from being exceeded, the Tribe's overall harvest activities will not result in local depletion or prevent the gray whale from remaining a significant functioning element of the Washington coast ecosystem.

C. Effects on individual whales.

1. Lethal Takes.

A maximum of seven whales will be struck in any year. The Tribe is committed to making every effort to land a whale once it has been struck. During the Makah whaling seasons in 1999 and 2000, there were no whales that were struck and lost and in 1999, the one whale that was struck was landed (i.e., 100% efficiency). Efficiency is defined as the number of landed whales divided by the number struck (for the purpose of this discussion, there can be multiple strikes on an individual whale; but no more than seven different whales will be struck in any one calendar year).

The Alaska Eskimo Whaling Commission uses a qualitative assessment of the likelihood of survival of a bowhead whale (*Balaena mysticetus*) that has been struck and lost. Hunters report the chance of survival of struck and lost whales as being: "excellent" or "lived;" "good," "fair," or "probably lived;" "poor" or "probably died;" "died;" or "unknown" (Philo et al. 1993). Accurate accountability of struck and lost whales and assigning survival rates are important in determining IWC quotas and in modeling whale population dynamics (Suydam et al. 1995).

The Tribe's waiver request is based on the highly conservative assumption that all individual whales that are struck and lost will have a 0% chance of survival (in terms of considering the MMPA PBR approach). The Tribe will cease hunting activities when seven strikes occur in a calendar year, or when the take of photo-identified PCFA whales approaches the ABL, whichever comes first. Therefore, for the purposes of evaluating the Tribe's request, no more than seven whales per year could be killed. The Tribe's regulations will limit the number of struck and lost whales to no more than three in any calendar year. Under no circumstances will the Tribe allow a strike on a gray whale calf or a gray whale accompanied by a calf.

The hunt will be monitored by biologists from Makah Fisheries Management and from NOAA Fisheries and the Tribe anticipates a thorough, yet still qualitative, approach to assigning survival rates of struck and lost whales to the IWC and NOAA for the purposes of population modeling. If the Tribe were to have a struck and lost whale, the hunt would be evaluated by the Tribe, and the Tribe would implement any improvements as necessary.

In addition to working to minimize the likelihood of any struck and lost whales, the Tribe will take measures which are designed to provide the most humane hunt practicable consistent with the goal of also providing opportunity for Tribal members to engage in a traditional, culturally appropriate hunt. The MMPA defines "humane" in the context of taking a marine mammal as "that method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved." 16 U.S.C. § 1362(4).

The Tribe proposes to use a toggle-pointed harpoon with line and floats attached to originally secure the whale, followed by shot(s) fired at the central nervous system (CNS) from a high caliber firearm to quickly and efficiently dispatch the whale (Ingling 1997). Any of the .50BMG firearm/ammunition combinations are considered more than adequate to humanely

dispatch a gray whale (Ingling 1997). The .50BMG caliber firearm is capable of shooting an Arizona Ammunition solid 570 grain bullet at 3,200 feet/second and generating 13,000 foot-pounds of energy (Ingling 1999). This firearm/cartridge combination can penetrate 240 inches of water, and after using a correction factor, can penetrate the equivalent of 133 inches of flesh. The largest width of a gray whale reported in Perryman and Lynn (2002) was less than 2.8 m (or 110 inches), in which case the .50BMG could create a wound channel completely through the width of the largest gray whale. The flesh covering the portion of the skull housing the brain is under 10 inches thick and the flesh covering the portion of the upper spinal cord is about 18 inches thick on a thirty foot gray whale (Ingling 1997). Considering the overwhelming firepower of a .50BMG caliber firearm, and the size of gray whales, this method is more than adequate to humanely dispatch a gray whale. The gray whale harvested by the Makah Tribe in 1999 expired 8 minutes after the initial harpoon strike (NMFS 2001).

2. Non-Lethal Takes.

In addition to lethal takes of gray whales, the Tribe's waiver request will result in "harassment" of gray whales as defined by the MMPA. The MMPA defines "harassment" to mean any act of pursuit, torment, or annoyance which— (i) has the potential to injure a marine mammal or marine mammal stock in the wild (referred to as Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavorial patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (referred to as Level B harassment). 16 U.S.C. § 1362(18).

Whales that are not killed in the hunt may be subject to "harassment" as a result of approaches and unsuccessful harpooning attempts that do not penetrate the whale's body and hence do not meet the definition of a "strike." Based on experience with whale hunts in 1999 and 2000, the Tribe estimates that there could be approximately 10 approaches and 4 unsuccessful harpoon attempts for every whale struck.

Approaches would be classified as Level B harassment and would be unlikely to result in any increased level of human-caused mortality to individual whales. Gray whales feed, migrate, breed, and calve close to shore, and therefore they encounter humans on vessels throughout their range. There is a major tourism industry that provides opportunities to watch gray whales on the winter breeding grounds in Mexico. Commercial and private whale watching occurs during the migration along the west coast of the United States and Canada. Gray whales encounter commercial fishing vessels in Bristol Bay, and small craft used by Chukotka natives and Alaska natives in the Arctic. Off the coast of Los Angeles, California during the whalewatching season, Rugh et al. (1999) reported that there can be eight to 12 boats following a single whale. The number of approaches incident to Makah whaling will be minor in comparison to these existing sources of harassment. Assuming an average pod size of approximately two animals during the migration period in the Pacific Northwest (Green et al. 1995), the number of whales subject to Level B harassment in a calendar year will not exceed 140**.**

Unsuccessful harpoon attempts would probably be classified as Level A harassment. However, because the harpoon would not penetrate the body of the whale on the attempt,

unsuccessful harpoon attempts would not result in any increase in human-caused mortality. NOAA (2001) concluded, based on their experience with biopsy darting research, that instances where a harpoon did not penetrate the whale would not likely have a significant adverse effect on whale behavior. Clapham and Mattila (1993) assessed behavior of humpback whales (*Megaptera novaeangliae*) in relation to both successful and unsuccessful biopsy attempts. Of the 427 missed biopsy attempts, 87.8% of the time the whales showed no reaction. Missed harpoon strikes would be analogous to missed biopsy attempts, where a projectile lands in the water nearby a whale, but does not cause contact. Clapham and Mattila (1993) reported that of the successfully biopsied whales (n = 565), 66.6% showed no detectable reaction or a low-level reaction (defined as a brief startle or a quick submergence, or both). Because a biopsy indicates a direct hit and therefore removal of a small piece of blubber and skin, for the purposes of assessing adverse effects, a biopsy would cause a more substantial effect than, for instance, a shaft of a harpoon bouncing off a whale. Accordingly, the Tribe does not believe that unsuccessful harpoon attempts (i.e., missed harpoon throws or the situation of a harpoon glancing off the animal) should be accounted for as a source of human-caused mortality for the purposes of applying the PBR methodology. In any event, no more than 28 gray whales will likely be subject to Level A harassment in any calendar year under this request.

D. Factors to be Considered in Prescribing Regulations.

This section provides an analysis of the five factors set out in Section 103(b) of the MMPA, 16 U.S.C. § 1373(b) which the Secretary must consider in prescribing regulations to implement the Tribe's waiver request.

1. Existing and Future Levels of Species and Stocks.

Section 103(b)(1) instructs the Secretary to consider "existing and future levels of marine mammal species and populations stocks." 16 U.S.C. § 1373(b)(1). The critically depleted Western North Pacific stock of gray whales which migrates along the east coast of Asia (Rice and Wolman 1971) will not be affected by this request. As shown above, the Eastern North Pacific stock of gray whales is currently within its OSP range. Even with the level of take proposed in this request, the stock is not likely to diminish below OSP within the foreseeable future. In 2002, the IWC's Scientific Committee estimated that a take of up to 463 whales per year would be sustainable over at least the medium term (~30 years) (IWC 2003). This level of take is substantially higher (by almost 350 percent) than the average annual joint US-Russian quota of 124 whales per year as well as a conservative estimate of all human-caused mortality in a given year. Any regulations promulgated to implement the Tribe's waiver request should provide for reduced strike limits or suspension of the hunt if necessary to prevent the abundance of the Eastern North Pacific stock of gray whales from falling below OSP.

2. Existing International Treaty and Agreement Obligations of the United States.

Section 103(b)(2) directs the Secretary to consider "existing international treaty and agreement obligations of the United States." 16 U.S.C. § 1373(b). The Tribe's request is

consistent with current IWC regulations which provide for an aboriginal subsistence quota of 620 gray whales between 2003 and 2007, with a maximum take of 140 gray whales in any one year. By bilateral agreement between the United States and the Russian Federation, up to 20 gray whales may be taken from this quota by the Makah Tribe over the five year period, with a maximum of five whales in any one year. The Tribe's request is also consistent with the IWC's prohibition against the taking of calves and whales accompanied by calves. The number of takes and strikes allowed under this request, as well as the time and manner of harvest, may be subject to reduction if necessary to meet the international treaty obligations of the United States under the International Convention for the Regulation of Whaling (ICRW).

3. The Marine Ecosystem and Related Environmental Considerations.

Section 103(b)(3) requires the Secretary to consider "the marine ecosystem and related environmental considerations." 16 U.S.C. § 1373(b)(3). As discussed above, the Tribe's request is designed to maintain the Eastern North Pacific stock of gray whales at or above an OSP level and to prevent any depletion of the abundance of gray whales along the Pacific coast south of Alaska and within the ORSVI survey area. These measures will ensure that Eastern North Pacific gray whales remain a functioning part of the ecosystem on multiple spatial scales: throughout the migration corridor; the Pacific coast south of Alaska; as well as the local region surrounding the Makah U&A.

In the past, concerns have been raised about the impact of the hunt on seabirds and the safety of the high-powered rifle. The Tribe believes that these concerns are greatly mitigated by its current request which prohibits hunting from June 1 and November 30 and within the Strait of Juan de Fuca. To address further concerns about the impacts of whaling on nesting seabirds, the Tribe proposes a restriction barring any gray whale from being struck within 200 yards of Tatoosh Island or White Rock during the month of May. The Tribe also intends to implement safety measures in their Tribal regulations which are no less protective of public safety than those provided for in its 2001 gray whale management plan (Makah Tribal Council 2001).[11] Further measures to address impacts to other species and public safety may be developed and implemented based on the outcome of the NEPA process.

4. Conservation, Development, and Utilization of Fishery Resources.

Section 103(b)(4) of the Act instructs the Secretary to consider "the conservation, development, and utilization of fishery resources." 16 U.S.C. § 1373(b)(4). No impacts to fisheries, either positive or negative, are expected to occur as a result of the Tribe's request.

5. Economic and Technological Feasibility of Implementation.

[11] These measures authorized the discharge of firearms when whaling only when the shooter was within 30 feet of the target area of the whale and the shooter's field of view was clear of all persons, vessels, and other objects that could result in injury or loss of human life. The measures also set minimum visibility standards for the hunt (Makah Tribal Council 2001).

Section 103(b)(5) of the Act instructs the Secretary to consider "the economic and technological feasibility of implementation." 16 U.S.C. § 1373(b)(5). The Tribe believes that its request will be entirely feasible to implement. The hunting methods called for in its request are not intended to be intensive, but have proven to be effective within the context of the Tribe's goal of providing opportunities for a traditional ceremonial and subsistence whale hunt.

The request should be quite feasible to implement from a management standpoint. The Tribe's waiver request is no more complex than numerous Treaty fisheries that the Tribe has managed in cooperation with NOAA Fisheries and the Washington Department of Fish and Wildlife over the past three decades. With one exception, the proposed management regime is very similar to that which the Tribe successfully implemented in 1999 and 2000. The one major addition is the photographic monitoring of the harvest to ensure that the ABL for the PCFA is not exceeded in any calendar year. The Tribe will have a qualified marine mammal biologist on staff who will administer these provisions in consultation with NMML biologists. In the event that the Tribe is unable or unwilling to effectively implement and enforce Tribal regulations, these requirements will be subject to direct enforcement by NOAA Fisheries enforcement personnel.

VI. Conclusion.

NOAA should approve the Tribe's request for a waiver and adopt regulations that permit the Tribe to exercise its treaty rights in the manner specified in this application. The proposed waiver is necessary for the United States government to fulfill its legal obligations to the Tribe under the Treaty of Neah Bay, will not disadvantage the Eastern North Pacific stock of gray whales, and will be consistent with the purposes and policies of the MMPA.

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VIII. Appendices

Appendix A:

RENKER, A. M. 2002. Whale hunting and the Makah Tribe: A Needs Statement. Report to Intl. Whal. Comm., IWC/54/AS2.

Appendix B:

Treaty of Neah Bay. 1855.

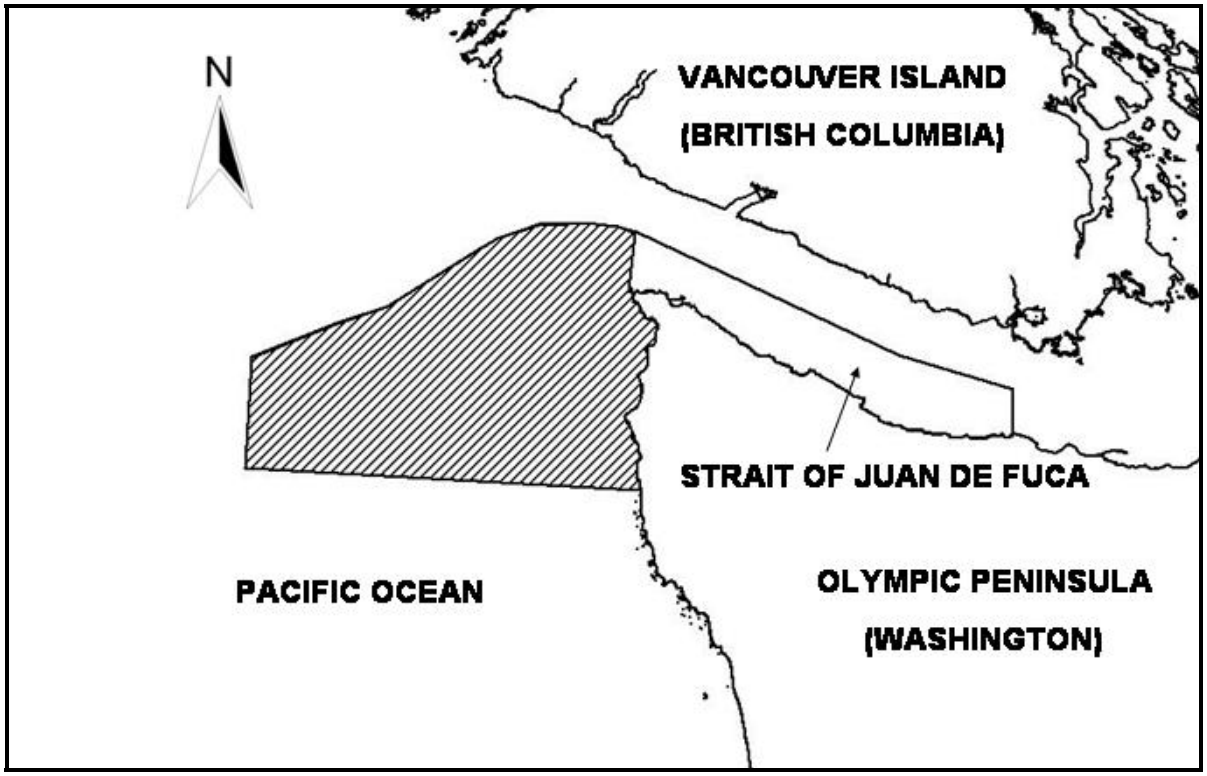

Figure 1. Map of Makah Usual and Accustomed Hunting and Fishing Area (U&A). Eastern North Pacific gray whale harvest by the Makah Tribe would occur in the Pacific Ocean denoted by filled area.

Appendix A

Whale Hunting and the Makah Tribe:
A Needs Statement

Ann M. Renker, Ph.D.
March 2002

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Whale Hunting and the Makah Tribe

I. INTRODUCTION

This document presents information pertinent to the continuation of the Makah subsistence whale hunt, and is presented in two parts: a cultural component and a nutritional component. The Needs Statement demonstrates the following points:

1) Whale hunting for subsistence purposes is an activity Makahs practiced for at least 1,500 years before the present day. Documented use of whale products for subsistence purposes extends another 750 years before this date, since Makahs used drift and stranded whales long before hunting technology developed. Continuation of the restored whale hunt will maintain important subsistence benefits reintroduced to the Makah community in 1999. This benefit increases in importance as the unemployment rate in Washington State increases and as salmon and other Pacific fishing stocks continue to vary in abundance. Increasing variance in international and domestic fishing quotas diminish the reliability of the marine subsistence component of the Makah Tribe, along with the environmental pressures exerted by oil spills, red tides, pollution, and other factors beyond the control of the Tribe. Gray whales are a reliable resource that can offset subsistence pressures from other sources.

2) For 1500 years, whale hunting and its associated components have had important ceremonial and social functions for the Makah community, in addition to the provision of subsistence benefits. The importance of this ceremonial and subsistence practice is demonstrated in the Treaty of Neah Bay, signed in 1855. Makah negotiators insisted that the right to hunt whale be included in the treaty; this right is reserved in Article IV, and is discussed in more depth later in this document.

Elders and anthropologists trace the decline of the social and physical health of the tribe to the elimination of the whale hunt and its associated ceremonial and social rigors. A community survey conducted in 2001 December, demonstrated that an overwhelming majority (93.9%) of the village believes that the resumption of the whale hunt has positively affected the Tribe, and 51.6% specifically cited moral and social changes as the most important benefit. Clearly, the Makah people believe that the restoration of the hunt has contributed to the physical and mental health of the reservation. Continuation of the hunt will maintain this new-found motivation and momentum, and allow the Makah community to redefine and refine ancestral information and values in light of modern times. The revitalization of the hunt has allowed Makahs an additional mechanism to instill the traditional values of the Tribe which help young and old to conquer the vicissitudes of modern life.

3) The Household Whaling Survey (Renker 2002) provides an important tool which provides empirical support for the emotional and psychological benefits mentioned previously. Data indicated that an overwhelming majority of Makah respondents support the Makah whale hunt, and that most reservation households now desire whale products to be a regular part of their diets. For example, 86.5% of survey respondents wanted whale meat in their households on a regular basis, and 72.4% of the survey respondents felt the same way about whale oil. (Survey results are discussed in detail in later sections of this document.) The results of this survey present a good picture of the mainstream opinion of the Makah people.

4) The Makah Tribe has been actively involved in the management and protection of its wealth of resources for millenia. For thousands of years, the Makahs achieved and maintained a functional balance with many land, air, and ocean species, especially the gray and humpback whales. This carefully constructed dynamic was upset during the years of unregulated whale hunting by others on the Pacific Coast. The restored Makah whale hunt has not affected current eastern Pacific gray whale stocks negatively, and is small in comparison to the total aboriginal subsistence harvest. In fact, current figures indicate that the gray whale population continues to maintain numbers that are at historic high levels.

5) The Makah people can now actively demonstrate the continuing existence of their 2,000 year old subsistence culture. The whale had always played an integral part in the subsistence practices of the Makah Tribe, save the brief seventy year period which commenced in the 1920s. While the decimation of the whale herds made it virtually impossible for Makahs to procure the food which traditionally carried the most extraordinary social, cultural, and nutritional benefits, the restored hunt provides modern Makahs with a rich source of traditional foods which are nutritionally superior to many non-indigenous provisions which are available to the community.

The gray whale population now exceeds early historic levels. The Makah subsistence and ceremonial need to take whales should continue to be recognized and respected. Since the Tribe has a conservation record of considerable time depth, a limited subsistence whale hunt will continue to be easily managed. More importantly, another annual quota of five whales will maintain the benefits secured for future generations of Makah people by Treaty negotiators.

The Makah request for five whales is again predicated on the fact that Tribal membership is now composed of the residents of the five traditional Makah villages which were consolidated during the early years of the Reservation. Since Treaty times, the Makah Tribe has always represented itself as a nation which began as five villages. This request honors this tradition, and asks for one whale per village.

In addition, a review of the ethnographic literature finds that the number five, whether an actual figure or an average, appears multiple times in discussions of early historic harvests (Jewitt 1815, Cavanaugh 1983, Huelsbeck 1988). Five whales per year did not create an undue population stress for a healthy gray whale stock in the years prior to 1830, and would not adversely affect the modern, healthy, gray whale population of the eastern Pacific (Environmental Assessment 2001).

METHOD STATEMENT

Interpretation of Makah history, culture, and language is accomplished through the juxtaposition of a variety of sources. By evaluating evidence from Makah archaeological sites (like Ozette),in conjunct with oral histories, linguistic information, ethnographies, and early written records of traders, explorers and agency employees, one generates a cultural profile that simultaneously integrates and cross-references these distinct sources of data.

The primary source of archaeological data substantiating the existence of Makah pre-Treaty whale hunts and offshore fisheries is the Ozette Collection, the largest and most comprehensive collection of pre-contact Makah artifacts in the world. The Ozette village was one of five pre-contact Makah villages which were occupied throughout the year: **di.ya** or Neah Bay; **bi?id?a** or Biheda; **wa?ac'** or Why-atch; **c'u.yas** or Tsoo-yess; and **?use.?i=** or Ozette (Taylor 1974). Unlike the others, Ozette was partially buried by a catastrophic mudslide approximately 400 years ago. A massive archaeological excavation from 1970 - 1981 uncovered 50,000 artifacts that were remarkably well preserved; these artifacts tell the story of the Makah culture as it was prior to contact with non-Indians (Wessen 1982, Huelsbeck 1983).

When interpreting the anthropological literature, a standard procedure relating to the classification of the Makah culture as a member of the Nootkan cultural group was followed. The Makah culture is the only example of a Nootkan culture outside of Canada; all other Nootkan groups reside along the western and southwestern coast of Vancouver Island. Scholars recognize the close relationship between Makah and the other members of the Nootkan cultural category (Curtis 1911, Drucker 1951, Driver 1969, Arima 1990, Renker 1994). It is therefore standard practice to consider sources relating both to the sub-group which is the focus of inquiry (Makah), and nearby closely related sub-groups on Vancouver Island (**nu.ca.nu.=** bands).

For the nutritional component of the Needs Statement, the document utilized the methodology and definitions endorsed by the United Nations University and the International Union of Nutrition Science's Committee on Nutritional Anthropology.

The methodology for the Household Whaling Survey (Renker 2002) is discussed in Appendix 3.

Definitions

Pre-contact refers to the chronological time period prior to 1788. **Historic** refers to the chronological time period from 1788-1933. **Contemporary** refers to the chronological time period from 1934 till today.

A Makah elder is an individual who is enrolled in the Makah Tribe, is over 75 years of age, and is a native speaker of the Makah language.

Westcoast refers to the generalized cultural group of Makah, Nitinaht, and Nootkan peoples. **nu.ca.nu.=** refers only to Nitinaht and Nootkan peoples since these people are closely related subgroups who live on Vancouver Island.

Subsistence refers to the anthropological concept that a particular food product or supplement is directly acquired by th people who will use the item for local consumption and nutritional purposes.

Linguistic and Other Conventions

Elements of the Makah language (morphemes, words and the like) are printed in **bold** type to enhance visibility. Because of the limitations affecting the preparation of this opinion, I use a variation of the Makah Alphabet. A key to the adaptation used i this document is included in Appendix 1.

Indented citations with quotation marks are taken from oral histories. Indented citations without quotation marks are from written sources.

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II. WHALE HUNTING AND THE MAKAH TRIBE: THE CULTURAL COMPONENT

Cultural Abstract

Anthropologically, the Makah culture is classified within the Nootkan sub-division of Northwest Coast cultures. The Makah people speak a language, **q*i.q*i.diccaq**, which is classified as a member of the Wakashan language family. The Makah Tribe is the only representative of the Nootkan cultural classification and the Wakashan language family in the United States (Renker and Gunther 1990; Renker 1994).

Classic descriptions are exemplified in Swan (1870), Curtis (1911), Waterman (1920), and Densmore (1939); some of the more recent publications include Renker (1994) and Renker and Gunther (1990), which span pre-contact through contemporary times, as well as Parker-Pascua (1991), which concentrates on Makah pre-contact life. Like all cultures termed Northwest Coast cultures by anthropologists, the classification is based upon factors first identified in these cultures as each existed in early historic times. Makah culture exhibits a number of characteristic Northwest Coast traits and trait complexes, including:

1. Emphasis on achieved wealth as measured in property and hereditary rights;

2. Complex patterns of social stratification;

3. A highly developed painting and wood carving style;

4. A material culture based on the abundance of the wood resource in the area, especially when related to the absence of other technologies, such as ceramics; and,

5. A subsistence pattern based on the utilization of available marine, riverine, subtidal and intertidal resources, as well as a predictable supply of anadromous fish.

The factors which further classify the Makah culture within the Nootkan sub-division provide a more detailed list of items which distinguish the Makah culture from other American Northwest Coast cultures. These factors include: a)the integration of rank and kinship as the basis for social interaction (Drucker 1951); b) the integration of land and sea spirits in a ceremonial complex which featured both inclusive and exclusive secret societies and events (Curtis 1911, Sapir 1939, Sapir and Swadesh 1955); c) the development of a highly regulated system of ceremonial and economic privileges, including the ownership of, and control over, tangible and intangible properties such as whaling grounds, fishing grounds, and other sections of ocean and river property (Curtis 1911, Densmore 1939, Drucker 1951); and d) the development of ocean-going technologies like fixed referent

navigation and the construction of sea-worthy canoes (Drucker 1951, Renker and Pascua 1989).

These last technologies are prominent components in the most dramatic pursuit of the Makah Tribe: whale hunting. Several Pacific coastal Tribes utilized dead whales which happened to drift onto the shore, or cultivated ritualists who actively used sympathetic magic to entice these drift animals. In contrast, the Makahs and some of their Vancouver Island relatives were famous for their active and aggressive hunt of these large sea mammals (Swan 1870, Waterman 1920, Densmore 1939).

The Whaling Culture of the Makah Tribe

The relationship between Makah people and whales is one of great antiquity. Archaeological data from a recent excavation at the Makah village of Wa-atch indicate that whale bones were present some 3,850+ 75 years b.p. (before present) (Wessen 1994). Food use of drift and stranded whale predated hunting technology. Better known data from the Ozette site demonstrate some 1,500 years of continuous whale use. This practice continued through the period of contact with non-Indians, and persisted into this century. Recorded history provides a variety of dates for the last Makah whale hunt prior to 1999; it probably happened during the latter half of the 1920s (Laut 1928).

Archaeological and ethnohistorical data demonstrate that Makahs hunted a variety of species of whale which traveled through their territory, including the gray (Eschrichtius robustus), humpback (Megaptera novaeangliae), finback (Balaenoptera physalus), and right whales (Eubalaena glacialis). Huelsbeck (1988a:5) discusses the traits which make both gray whales and humpbacks attractive prey. In addition to swimming slowly and near the shore, both types of whales could appear during the summer. Humpbacks have also been known to migrate along the coast, but not to the extent that gray whales do. Non-Indian whale hunters characterize the gray as the more aggressive species of the two during a hunt (Hagelund 1987).

There is no doubt that Makah people hunted whale in pre-contact times, and that the hunt was an important subsistence activity. The Ozette site yielded whale hunting gear and over 3400 whale bones, including whale bones with embedded harpoon shell blades (Huelsbeck 1988a:1).

The archaeological record is supported by ethnographic sources like the Jewitt Narrative, one of the most interesting and important first person accounts generated during the European exploration of the Pacific Northwest Coast. John Jewitt was one of the surviving crew members of the ship Boston, which was ravaged and sunk by the **nu.ca.nu.**= Chief, Maquinna, in Nootka Sound in 1803. Jewitt remained in Maquinna's service as a slave until his rescue in 1805, and recorded his experiences and observations in a diary first published in 1815.

In spite of his ethnocentrism and lack of knowledge of nu.ca.nu.= culture, Jewitt's observations remain a key document in the early historical record of the area. Jewitt describes the enormous amount of time Maquinna and his crew invested in the pursuit of offshore whales in 1804 and 1805. During these years, Maquinna had only one successful hunt.

Cavanaugh (1983) indicates that Maquinna's lack of whale hunting success during the 1804 and 1805 seasons at Nootka Sound was not indicative of the fate of other hunters. While Maquinna secured one whale during Jewitt's captivity, hunters procured an additional four whales. Simple addition indicates that the people of Nootka Sound had the food and product resource of five hunted whales at their disposal.

According to Huelsbeck, calculations produce a scenario based on abundance, rather than paucity. Using a very conservative estimate, the five whales caught at Nootka Sound "would have provided between 16.25 and 37.5 metric tons of blubber, and could have provided a similar amount of meat, depending on whether or not the California gray or the larger humpback whale was taken" (Huelsbeck 1988b:3). This huge quantity of meat and blubber could have provided between 32.5 and 150 kg. of edible whale product per person for a village with a population of 500 individuals (Huelsbeck 1988b:4).

Certainly the number of whales taken by all Makah crews varied from year to year. A minimum of 67 whales were "represented by the bones recovered from the late prehistoric level" at Ozette (Huelsbeck 1988a:7), constituting a huge quantity of food products and raw material. Based on historic documents, Huelsbeck estimates that whalers of the Yuquot band, a nu.ca.nu.= group, "would have averaged 5 whales per year" (1988:157). Densmore reports a much higher success rate for historic Makah whale hunters. "In old times the average catch for a whaler was one or two whales a year, but a man often caught four and occasionally five in a season" (1939:63). Wilcox (1895:20) provides a more conservative appraisal of the Makah whale hunt for the years 1889-1892. His figures indicate that the Makah Tribe averaged 5.5 whales per year (as cited in Huelsbeck 1988:152) at a time when the cetacean population had already been severely impacted by other, non-Makah whaling interests.

Makah whale hunting capitalized on the annual northerly migration of the gray whale, and the availability of the humpback in their waters. Archeological data corroborate Makah oral history in this regard. In the Ozette Collection, 50.51% of the whale bones identifiable by species were that of the gray, while another 46.51% came from the humpback (Huelsbeck 1988a:4). The remainder of the sample contained finback, right, sperm and killer whales. Huelsbeck interprets the archaeological and ethnohistorical data to indicate that the finback and right whales were hunted from time to time, while the sperm and killer whales "probably represent drift whales" (1988a:6), although some Makah families have oral traditions which involve hunting these species.

The impressive gray whale migration approximately occurs from March to May, and provided a predictable resource that could be harvested by eight man whaling crews which set forth in large cedar canoes. In one hunting strategy, lookouts stationed at strategic points could see a whale and alert the proper individuals, providing enough opportunity for canoes at the ready to launch and chase the whales. (This type of whale hunt, termed an offshore hunt in Hagelund (1987) and Webb (1988), would be adopted by the non-Indian whaling interests in the area centuries later.)

Whale hunts were not restricted to this northerly migration, however. Densmore (1939:49) reports that Makahs distinguished spring whale meat from winter whale meat:

> The whales that "run in the spring" and were known as "spring whales" were said to have red meat because they ate clams and other shellfish they scooped off the rocks. The "winter whale" was considered the best and had a layer of white fat on the outside and red meat underneath.

Whatever the season, the whale hunt tested the training and stamina of the entire crew. A lucky crew might take a whale within a few miles of shore, while some hunts found Makah crews towed thirty or more miles out to sea by an injured whale. Whale hunters told Densmore that

> A wounded whale usually towed the canoe by means of the harpoon rope, held by the men, its speed depending on the severity of its wound. Sometimes the whale went so fast that the end of the canoe went down in the waves. This towing of the canoe might continue for three or four days, the whalers waiting until the whale became sufficiently weary to be dispatched (1939:52).

These great sea mammal hunts (Swan 1870, Waterman 1920), as well as interceptive and deep water fisheries, would not have been possible without a highly developed system of fixed referent navigation, and a keen understanding of the prevailing winds and weather patterns in Makah marine territory. (One appreciates Makah navigational skills more thoroughly when one considers that Captain Cook failed to "discover" the opening of the Strait of Juan de Fuca because of the thick fog.)

An example of the Makah fixed referent system was provided by a Makah elder who has been fishing since the 1920s.

> "There's a ridge on Vancouver Island, I think the main peak there is behind Carmanah Light, and that's Carmanah mountain. That's the highest one, and there's a ridge behind that as you venture to the west, one peak will show up behind that as you venture to the west, one peak will show up behind that high peak on the ridge. The first one is **c'akwaqabas**, the second one is **?a7qabas**, and then you have a low kind of ridge, it drops down for quite a ways, and then another peak shows up, and that's in...oh...mostly used for sealing grounds, called The Spit. Now I have electronic navigational equipment, and I look upon those landmarks to determine just where we actually were when we were one peak out, two peaks out, or seven peaks out."

When navigating out of sight of land, Makah seafarers relied on the prevailing winds and currents, as well as the shape of the waves and behavior of seabirds. For example, prevailing winds in the early morning are mostly easterly, and their afternoon counterparts are mostly westerly. Makah canoes ventured out of the sight of land knowing that attention to wind, wave, and fauna would return the vessels to land.

Makah ocean voyagers also understood that these navigational techniques could lead them directly to prime off-shore fishing and whaling areas. In the words of an experienced Makah fisherman,

> "Prevailing currents, can predict them. They run on schedule. They tell direction and duration...Once off shore, the current changes every six hours: north to south, then south to west, then west to north, then north to east. A massive current moves all the time. Currents are predictable and steady...able to predict spawning areas."

Great cedar canoes provided the means for Makah seafarers to travel these great distances offshore. Fisherman, sealers, and whale hunters each used a different type of canoe which varied in size. The whaling canoe was approximately 36 feet long (Pascua 1991) and five or more feet wide (Arima 1983:35). Carvers fashioned these vessels from a single cedar log, providing canoes that "deserve the very highest place for staunch seaworthiness, coupled with great manageableness (sic) and speed" (Waterman 1920:9).

A whaling crew consisted of a chief, or the whaler, and seven men. The whaler owned the canoe and the whaling equipment, and acted as the sole harpooner in the whaling canoe. He also owned

important ceremonial privileges acquired through his hereditary status and his ability to interact with the natural and the supernatural to assure a successful hunt.

Other crew members included a steersman, a man responsible for managing the lines and buoys, numerous paddlers, and a man who had a unique responsibility once the hunt was over and the whale was dead. This crew member, a diver, fastened the whale's mouth shut with a length of rope. In addition to sealing in gases which kept the whale afloat, fastening the mouth prevented water from filling the carcass and sinking it (Curtis 1911; Waterman 1920; Pascua 1991).

Whaling was restricted to the men who could physically and mentally withstand the rigors of intensive ritualized training, possessed the hereditary access to the position and its ritualized knowledge, and/or a underwent a supernatural encounter which engendered the gift of whaling ability (Waterman 1920:38-40, Gunther 1942, Drucker 1951:169-170).

All crew members underwent rigorous ceremonial and spiritual preparations prior to beginning a hunt; the success of the hunt depended as much on the observance of ritual as the strength and talent of the hunters (Sapir 1939:114).

> From the white point of view, the matter of greatest concern would be the arrangement of the tackle within the boat, and the methods of approaching and striking the quarry. From the Indian standpoint, however, the really important matter is the proper observance before and during the hunt of the various ceremonial performances for procuring help from the spirits. (Waterman 1920:38)

Curtis (1911) provides the most detailed accounts of rituals whalers used to prepare themselves for the hunt.

> Prayers and numerous songs form a part of every whaler's ritual. The secrets of the profession are handed down from father to son. As soon as the boy is old enough to comprehend such matters and to remember his father's words, he is permitted to accompany the whaling crew on short expeditions. Now also begins his instruction concerning the most propitious spots for ceremonial bathing-places in lakes and rivers considered the most dangerous. At the age of twelve he is taken at night and shown how to bathe and to rub his body with hemlock twigs so as to remove the human taint and render the body acceptable to the whale spirit which is being supplicated. Thereafter he bathes alone at intervals, while

> his instruction in prayers and songs continues until the father deems it proper to retire in the young man's favor (16).

These ceremonial rigors extended to the wives and relatives of the whaling crew, the chief's wife in particular. "Therefore, the whaler and his wife observe a long and exacting course of purification, which includes sexual continence and morning and evening baths at frequent intervals from October until the end of the whaling season...about the end of June" (Curtis 1911:16). This woman was expected to observe a strict set of behaviors while the crew was hunting on the ocean, or else cause havoc with the crew at sea. For example, the whaler's wife was required to lie still and utterly motionless the entire time the crew was hunting on the ocean. Lack of attention to this and other proscribed behaviors could also result in the capture of a whale that was not fat or large enough, or cause the harpooned whale to run out to sea instead of in toward the shore (Gunther 1942).

Physical equipment was also important to the pursuit of the whale. Makah whaling equipment consisted of, but was not limited to: harpoons, sealskin floats, fathoms of line made from whale sinew, fathoms of line made from cedar, and a variety of knives (Curtis 1911:16). Detailed discussions of the equipment and its use are found in Swan (1870) and Waterman (1920). Makah archaeological excavations, most notably Ozette, produced assemblages of this equipment, some of which are now on display at the Makah Tribe's museum and cultural center.

There is an amazing continuity which surrounds Makah whale hunting gear. Pre-contact whale hunting equipment found at Ozette is essentially equivalent to whale hunting gear used by Makahs during the middle and late historic period. This amazing continuity does not exclude innovation. Makah whale hunters appreciated innovation and the opportunity to improve the hunt. By the turn of this century, Wilson Parker, the Makah Whaler of Curtis' photo fame, used a metal Lewis Toggle Hook Harpoon Head on the end of his traditional yew wood harpoon, for example. Another innovation helped to cut the tedious and tiring job of endless paddling: whaling canoes accepted tows from steamers to and from the whaling grounds when the technology became available.

The Makahs hunted the variety of whales which swam in their traditional ocean areas, but favored the predictable gray whale. Descriptions of the hunt itself are available in Swan (1870), Curtis (1911), Waterman (1920), Drucker (1951), Arima (1983) and Pascua (1991).

> It would take a long time to get close to the whale while it was on the surface. Eventually, the crew brought the canoe alongside approaching on the left side and from the rear where the whale could not

> see them. The right time to harpoon was when the whale was just submerging, with its flukes well under and swung towards the canoe so that the animal would swing away in reaction and not smash the canoe (Chief Jones, personal communication). The steersman watched to see the flukes were in the right position and gave the signal to the harpooner who immediately drove the harpoon in behind the fore flipper. At once the canoe was swung sharply to the left away from the whale, and the first float was thrown out by the first right-handed paddler behind the harpooner who quickly crouched in the bow to avoid the line paying out. The next paddler back held his paddle under the line to have it run out smoothly from the space before him. The dangerous moments lasted until all the line and floats were all out because someone could get caught in a loop or the canoe could be capsized or smashed in the first violent struggles of the whale before it sounded. Any disaster that happened was thought due to the incorrect observation of tabus or performance of rituals (Arima 1983:41).

Once the first harpoon had been driven into the whale and the first set of floats were secured, a long lance was used to "attack the whale, making it bleed profusely" (Densmore 1939:50). Makah whalers told Densmore that the process of killing a whale, from first harpoon to final dispatch, could take "three to four days" (1939:52).

The successful whaler and his crew now had to tow the enormous animal and navigate their precious whale back to land, a process which could take two days (Densmore 1939:52). Unfortunately, the long delay in landing the animal could allow putrefaction to begin, thus causing the loss of the meat. The blubber would not be adversely affected by this long journey back to the beach.

Ideally, the whaler wanted to land his prize on his own beach at his own village. Using the tide to help him, the whaler beached the carcass at high tide, "to get the bones of all his whales in one spot" (Arima 1983:43). If a whaler had to beach his catch on another whaler's beach, payments had to be made; these often consisted of portions of the whale.

As the whale was staked and readied to be butchered, the community gathered for this event. Strict protocol governed the butchering process, specifying which portions of the whale were to be cut in sequence. Some regulations identified the pieces of the whale which had to be decorated and ceremonially treated. Others specified which portions were distributed to crew members and other village inhabitants. "Then pieces were given to the

rest of the Tribe in order of rank, a procedure which was always carefully observed" (Arima 1983: 43). In effect, the distribution of the whale reinforced the infrastructure of Makah society each time the process occurred.

The highly stratified nature of the Makah social system was a mirror of the status and structure involved in the entire process of the whale hunt. From ceremonial preparation, to the hunt itself, to the ultimate acts of butchering and distribution, Makah whaling actualized the social organization of Makah society. The man who acted as the harpooner for a crew was the chief, or headman, of a particular social group, usually the residents of a single longhouse. He owned the longhouse, the whaling canoe and the equipment. This man also retained the largest burden of ceremonial preparation. These two factors, a large degree of physical wealth and a close relationship with the supernatural, translated into power for the whalers in everyday life.

Whalers, or headmen, were ranked at the top of the pyramid of social standing which existed within a single longhouse. Each resident was affiliated with the headman in some way; this affiliation became the basis for ranking each individual within a residence group. Whaling generated a base from which these relationships were constantly renewed and reinforced. A successful headman could offer prestige, protection and resources to the kin and non-kin residents of his longhouse. A headman who experienced consistent failure, ostensibley because of poor preparation and ineffective supernatural connections, could lose status within his household, and lose non-kin residents as a result. The loss of these residents often translated into a loss of physical wealth and social prestige for a headman.

The anthropological literature tends to concentrate on the role of high-status men in the whale hunt. Makah oral history and articles like Gunther (1942) demonstrate that women played an important social, ceremonial and practical role in the whale hunt complex. Men, for example, were not the only ones affected by relationship between the whale hunt and social status. The women who married whalers dominated the top of the female analog to the male status pyramid. These women, like their male counterparts, found their lives governed by the concept of primogeniture. While whalers tended to be the oldest son of the oldest son of a whaler, the whaler's wife tended to be the oldest daughter of an oldest daughter of a whale hunter. Matches between the oldest son of one whaler and the oldest daughter of another were the ultimate social goal of whaling families. These alliances united two powerful, wealthy families, and insured that consolidated social, ceremonial, and political power would be transmitted to another privileged generation; this procedure is common to historical and contemporary royal families.

Oral history and anthropological documents attest to the fact that the Makah whale hunt generated a series of criteria which governed social processes like status assignations, marriage

preferences, and ceremonial displays. The community-at-large played an important role in the success of the whale hunt, even though its role is far less visible in the written record. While anthropologists were most interested in the ceremonial, social and work activities of the privileged classes, it was the support labor that processed, preserved, and prepared the whale products, as well as conducted the trade activities. People of extraordinary talent in any of these activities were recognized and recompensed by those of higher social status. These people of talent, when combined with a high status chief, resulted in a longhouse with a reputation for great things.

Therefore, whale hunting provided more than a means of organizing social groups within a longhouse; the whale hunt also provided a mechanism by which longhouses in a single village related to each other. Accumulated ceremonial and economic wealth often provided a means to rank the whalers, or headman, vis a vis each other. This ranked order precipitated to the residents of each longhouse. In effect, whaling generated a social dynamic which ranked all Makah individuals within a residence group, a longhouse. The practice also generated a social dynamic which ranked all Makah individuals in relation to the inhabitants of all other longhouses. Whaling was the warp and the woof of Makah society.

In addition to providing the whalers with ceremonial privileges, and Makah society with a governing principle and a means to subsistence security, the Makah populace received other benefits from whale hunts. These benefits included, but were not limited to the following:

1. Whale products such as blubber and oil proved an important source of trade goods. The Makahs served as the middlemen in a huge trade network. Because of their geographical advantage, Makahs operated a critical position in a network which functioned north and south along the Pacific Coast, as well as from the Pacific Coast to the Puget Sound (Swan 1870, Renker and Gunther 1990, Renker 1994). Whale products insured that the Makah people enjoyed a high standard of living with diversified interests (Huelsbeck 1988).

2. Whale products provided a substantial food resource for the Makah people. Early archaeological studies indicate that as much as 84.6% of the Makah pre-contact diet could have been composed of whale meat, oil and other food products (Huelsbeck 1983:43). Recent collaborative efforts between Dr. Huelsbeck and marine biologists have resulted in an adjustment to this early statistic. The projected size of the gray whales found at the Ozette site was too conservative; the mammals could easily have provided 100% of the food for the Makah Tribe (Huelsbeck 1995: personal communication). Clearly, whale products fulfilled important subsistence functions. In addition to nutrition, 25% of bone tools found at Ozette were made from whale bone.

3. The skills needed to hunt whales on the open ocean easily

transferred to Makah offshore activities, including deep water and interceptive fisheries and seal hunting. These pursuits provided additional sources of trade items and food.

4. Ceremonies needed to prepare whalers and their respective families for the hunt provided the Makah culture with a social framework that contributed to governmental, social, and spiritual stability.

The four cultural points articulated here have corollaries in the modern world. In relation to trade, the Makah Tribe signed an agreement with the United States Government which restricted the sale of whale products which were generated from whales harvested under the IWC quota. This agreement does not restrict Makahs from utilizing the subsistence-based redistribution networks that already existed within the reservation. Data clearly indicate the presence of localized networks that aid in the redistribution of whale products, particularly to family members who were not adept at processing and preparing whale themselves (Renker 1988, Aradanas 2001, Renker 2002).

Whale products have become a significant food resource for modern Makahs, in spite of the fact that only one whale has so far been successfully hunted during the first IWC quota period. In fact, a drift whale which washed ashore in an isolated part of Makah territory, was butchered and distributed to over 100 Makah households during the summer of 2001. This event is significant because the increasing Makah demand for whale products motivated more Makahs to utilize the drift whale, and return the meat, blubber, bone, and other parts to Neah Bay by boat. Since the whale was located on a remote beach with no road access, a small fleet of boats ferried whale parts from the beach to the boats, then back to Makah households.

Makahs are utilizing whale food products such as meat, blubber, and blubber rendered into oil, as well as other whale parts not as well known to non-Makahs: eyes, brain, heart, cheeks (the Makah reference to the jaw muscles and the fleshy area under the eyes), and the like. Modern Makahs have quickly rediscovered their ancestral appetite for whale products: 72.4% of surveyed households would like whale oil on a regular basis, 86.5% would like whale meat on a regular basis, and 55.8% would like blubber on a regular basis. Numerous survey respondents indicate a preference for sea mammal products for both traditional and health reasons (Renker 2002).

The significance of the whale as a food resource is also apparent when examining the variety of preparation methods in use on the Makah reservation. One might expect a paucity of recipes and techniques for preparing whale meat and blubber, given a seventy year gap in actuality. Instead, respondents provide the following data. Of the 61.3% of the respondents who received whale meat from the 1999 whale, 41.5% made jerky, 43.9% ate roasts, 41.5% cooked stew, 35.4% grilled steaks, and 34.1% smoked meat. 19.5% of respondents also indicated a preparation methods

other than those offered by the survey. These innovative methods included stir frying, kippering, deep frying, barbecuing, and boiling. Two respondents made whale burgers, and one created whale sausage. Of the remaining respondents who did not receive whale meat for their personal consumption, 84.7% indicated that they would have liked meat from the 1999 whale.

Of the 75.3% of respondents who prepared blubber, 22.4% smoked it, 37.9% rendered the blubber into oil, 6.9% pickled it, 48.3% boiled it, and 65.5% ate the blubber raw. An additional 3.4% of respondents used the blubber for cosmetic purposes. Several interview respondents did indicate that rendering the blubber from the 1999 whale posed problems because of a low concentration of fat in the animal (Renker 2002).

Whale oil is a particularly important commodity for the Makah people, and its precious nature increases its value. The rich oil is used the way many people use olive oil. In the Makah example, many people flavor dried or plain food, such as fish, fish eggs, potatoes, or bread, by dipping these foods into the whale oil. This use is a traditional one, and is mentioned in the earliest ethnographies, such as Swan (1869) and Densmore (1939). In addition, whale oil may be used in particular ceremonial and ritual activities. In one example, when thrown onto a roaring fire in the middle of a longhouse, the whale oil causes the fire to blaze up in a most extraordinary manner; this effect looks the same to modern Makahs as it did to their ancestors, increasing the spiritual connection between past and present.

The Household Whaling Survey attests to the significance of the whale as a food resource because of the large number of respondents who want additional information about processing and preparation techniques for whale products. Of 163 respondents, 70.6% wanted more information about preparing whale meat, 52.1% wanted to know more about butchering whale, 60.1% wanted information about rendering oil, and 59.5% wanted to know about smoking meat.

Modern Makahs also have an interest in whale bone as a raw material. 75.5% of Makah households report that they would like to have access to whale bone on a regular basis, and some people were disappointed that the bones of the 1999 whale were not made available to the community for private use. Instead, the Makah Tribal Council made an arrangement with the Neah Bay High School which provided vocational opportunities for high school students. The entire skeleton of the 1999 whale was given to the high school so that students would learn to clean and prepare the bones for reassembly and eventual display at the Makah Cultural and Research Center. The National Marine Fisheries Service, The Burke Museum, and the Denver Museum of Natural History are all additional participants in this ongoing project (Monette: personal communication: 2002). To date, some 40 Makah high school students have learned valuable vocational skills through the skeletal assembly project. Faunal assembly skills are in

demand in museums and laboratories throughout the United States.

Most importantly, contemporary Makahs insist on the ceremonial rigor and discipline that was so important to their ancestors. 38.7% of respondents in the Household Whaling Survey report that they have actively participated in whaling ceremonial practices since the 1999 whale was harvested, and that 21.6% of their household members are also active ceremonial participants. These figures are meaningful, given the seventy year hiatus in whale hunting, as well as the secretive atmosphere which surrounds these activities. The serious attention given to the ceremonial preparation requirements also acts as an indicator of the positive impact that the whale hunt has had on the social and behavioral aspects of Makah life (Renker 2002).

For example, early ethnographies (Swan 1869, Densmore 1939) as well as recent depictions of pre-contact life (Parker-Pascua 1991) mention the practice followed by whalers' wives of "laying still" with their backs to the ocean while their husbands were hunting whale. By following this practice, wives would spiritually connect with the whale in the ocean, causing it to "be still" on the water, and to swim toward, rather than away, from shore. In the successful 1999 hunt, wives, partners, and mothers of the crew followed this ceremonial practice, and two of these women were brought onto Front Beach in the ritual manner when the whale was brought ashore. Men do practice ceremonial preparations like bathing, but as in pre-contact and historic times, their exact activities are kept highly secret.

A Diachronic Account of Makah Whaling

The Ozette archaeological literature, especially the work of Huelsbeck (1983, 1988, 1988a, 1988b), attests to the considerable time depth and continuity of the Makah whale hunt. Prior to contact with non-Indians, the Makahs and their **nu.ca.nu.**= relatives hunted whale successfully for at least 1200 years without destroying the resource. Ceremonial, social and cultural proscriptions established a functional balance between the Makahs and the whale populations which swam in or through Makah waters.

Once non-Indian traders and explorers entered the waters of the Pacific Northwest, Makah whale hunters felt the effects of an increasing demand for whale products. In response, Makahs continued to ply their well established trade in whale oil and whale products with the visitors.

The regularity and size of the gray whale migration attracted whalers from the United States and Europe. Like the Makahs, other non-Indian whale hunters appreciated the opportunity to practice offshore whaling in the area, as opposed to the more expensive, more protracted, multi-year ocean voyages. "As the market for whale oil and dogfish oil increased in the 1840s and 1850s, the Makah brought oil for sale...Oil purchased from the Indians was a major export of the Hudson's Bay Company" (Lane

1955:17). By 1852, Makahs were trading or selling some 20,000 gallons of whale and fish oil (Lane 1955:18); this figure would rise to 30,000 gallons per annum within 20 years (Gibbs 1877:175).

In 1854, Capt. Charles M. Scammon discovered the breeding grounds of the gray whale in the lagoons of Baja California and Mexico (Hagelund 1987:42-43); this discovery now provided the two terminal points for the gray whale trek, and helped to increase the exploitation of the gray whale on the American Pacific coast.

As time passed and contact with non-Indians increased, other entities intruded into Makah life, and by extension, into the whale hunting complex. Governor Stevens, assigned by the United States' government to negotiate a Treaty with the Makah in 1855, knew of the commercial value of Makah whale hunting talents when the Treaty of Neah Bay was signed. Indeed, numerous Makahs made speeches during the Treaty negotiations asking that the right to whale be reserved to them when the Treaty was signed. These Makah negotiators, and Gov. Stevens, agreed that Article IV. of the Treaty of Neah Bay would specifically list whaling, along with sealing and taking fish, as a right guaranteed to the Makah Tribe. Article IV. of the Treaty of Neah Bay makes Makahs unique among all United States' native tribes: Makahs are the only tribe whose right to hunt whales is recognized in a treaty with the government of the United States.

While the Treaty of Neah Bay preserved the Makah right to hunt whales and seals, and to fish in usual and accustomed grounds, other federal interactions with the Makah did not seem to support this language in actuality. Assistance sent to the Makahs contained agricultural tools, rather than items which supported any of the active components of the Makahs' maritime lifestyle. Instead of tools and materials which would help to procure, process or preserve whale, seal or fish products, Makahs received pitchforks, scythes, hoes, and sickles. "James Swan reported in 1862 that the Makahs had converted the tines of pitchforks into fishhooks, scythes into blubber knives, and sickles into arrowheads" (Marr 1987:29). The Makah reaction to the agricultural materials is perfectly understandable given their splendid maritime talents and the fact that Makah land was obviously unsuited to cultivation (Whitner 1977, Renker and Gunther 1990).

Rather, the motives of the United States are suspect. While soil studies may have been unsophisticated in the mid-nineteenth century in the Pacific Northwest, it took little effort to realize that the soil, vegetation, and topography of the coastal area was unlike the rich agricultural belts in other parts of the country, such as the Plains and the Northeast. Indeed, the land on the Makah reservation was clearly different from that of the Washington territory east of the Cascade Mountains.

This bizarre situation developed because of prevailing ideas regarding federal Indian policy; it had been developed with a very different perspective. The United States government did not

want to encourage self-sufficiency, because self-sufficiency often encouraged hunters and gatherers to travel beyond the confines of the established reservations, and to maintain cultural practices considered savage and barbarous. The best way to force a sedentary existence on a group of hunters and gatherers was to make the group dependent upon agriculture, which required a fixed resource base. The singular nature of this policy was also inappropriate for the Makahs, who already had a fixed, plentiful marine resource base and no land suitable for agriculture.

A philosophical mandate accompanied this strategy. "One of the convictions of those associated with the administration of Indian affairs, both officially and informally, was that farming was associated with civilization" (Whitner 1977:21). In the Makah case, Indian policy was designed "to change the Makahs from self-sufficient food gatherers to farmers, dependent on the white people for tools and instruction" (Marr 1987:29). Indian policy was also designed to assimilate Makah people through an educational system that ignored Makah priorities and prohibited the use of the language, in addition to eradicating customs considered heathen, savage, and dangerous (Colson 1953, Gillis 1974, Whitner 1977, Renker and Gunther 1990).

Whitner (1977) reports that Indian Agency personnel were somewhat daunted by the task of civilizing the Makahs, and cites Henry A Webster, the first resident Indian agent, as writing in 1866, "The Makah are probably nearer the normal state of savage wilderness than any other tribe in the Territory, and seem particularly averse to acquiring the habits and customs of the whites" (in Whitner 1977:20). Little progress is recorded in Webster's Annual Report for 1867, though he is staunch in his resolve to eradicate traditional values and practices:

> Their very natures must, however, be changed, and their habits forced, if necessary upon them, or they will retrograde into worse than savage supremacy of filth and disease of former days (ARCIA 1867).

In spite of the Treaty's recognition of whale hunting as an important facet of Makah life, the United States government chose not to support this well-developed practice. Lane (1974) discusses the frustration of several resident Indian agents who realized that federal efforts should be promoting marine activities, rather than agriculture. Some agents believed that assimilating Makahs to American values, customs, and practices would be easier if the government aided traditional marine pursuits.

Lane documents numerous requests for support of fishing activities from 1860-1881 from agents and superintendents. Regardless of the nature of these requests, Lane concludes that "the United States failed to provide the assistance repeatedly requested" (1974:20). Gillis (1974), Lane (1974), Whitner (1977), and Marr (1987) discuss the circumstances surrounding the federal government's promotion of a shift in Makah subsistence from a maritime base to an agricultural one.

In 1870, President Grant's annual message announced an Indian policy which sought to "Christianize and civilize the Indian" (Whitner 1977:18). At this same time, Pacific whale populations were diminishing, and the Makahs who continued to whale hunt had to make adjustments. Singh (1956) and Van Arsdell (1987) indicate that Makahs increased their seal hunting efforts to compensate for a less profitable whale hunt. "Beginning in 1886, Makah crews were hired on sloops and schooners to hunt fur seal off the Washington coast and Vancouver Island (Marr 1987:29). Makah fur seal hunters easily demonstrated their pelagic talents and Makahs quickly used financial profits and exceptional skill to their advantage. Colson (1953:159) reports that "several Makah sealers had their own schooners and were hiring White navigators in the 1890s".

These changes greatly affected traditional subsistence and trading practices. Swan (1884-1887, 2:396) and Waterman (1920:48) both express opinions that the success of Makah fur sealing had an impact on the whale hunt. "This work was so profitable that the Makah temporarily abandoned whale hunting" (Renker and Gunther 1990: 428). Other historians agree. "By 1891, sealing became so lucrative for the Makah and Westcoast native hunters that their traditional whaling expeditions virtually ceased" (Webb 1988:145). A friend of A.W. Smith lamented the decline of the whaling culture in a letter written on 29 November 1888, "Many of our old whalers at Neah Bay have died since we left" (AW Smith Papers).

While the Makah enjoyed the prosperity brought on by their pelagic success, the Pacific fur seal population was showing signs of stress by 1890. The population could not sustain itself in the face of an increasing number of sealers and the use of firearms. The Law of December 30, 1897, made fur sealing illegal; the agent for the Neah Bay agency, Samuel Morse, was directed to enforce this law on the Makah reservation (AW Smith Papers). Accordingly, Makahs would now be allowed to hunt fur seal only from canoes, using traditional gear and techniques. "Some returned to traditional whaling" (Renker and Gunther 1990:428), but the loss of cash from the commercial fur seal hunt created a huge vacuum on the reservation.

While whale hunts were "still the symbolic heart of the culture" (Marr 1987:25), they continued to diminish in frequency, and became less and less cost-effective. In addition, the introduction of American values worked against the traditional subsistence pursuit. For example, the American philosophy of

social equality made it difficult for Makahs to continue to staff and organize whaling canoes, and therefore households, according to the ancestral patterns. Whale hunting was no longer the sole avenue to a position of ceremonial and political importance as the headman of a large longhouse.

Epidemics, bans on ceremonial activities, and the federal schooling system also produced devastating effects on the Makah's ability to resume whale hunting after the fur sealing ban. The diseases that affected the Makah population had reduced the number of tribal members by some 75% by 1890 (Boyd 1990:145); much family-owned information was lost as a result. Makahs died without passing down important knowledge. Hancock describes the rapid and disastrous effects of the smallpox epidemic of 1853 in his journal. This epidemic was so severe, it literally wiped the village of **bi?id?a** from the face of the earth.

> It was truly shocking to witness the ravages of this disease here at Neaah (sic) Bay... In a few weeks from the introduction of the disease, hundreds of natives became victims to it, the beach for a distance of eight miles was literally strewn with the dead bodies of these people, presenting a most disgusting spectacle (182).

The extreme number of fatalities caused by the epidemics also disrupted the line of authority in most families. Cultural protocol dictated that ownership of ceremonial and economic rights and privileges had to be transmitted publicly at a potlatch. In many cases, epidemics took the lives of people who had not transmitted control over ceremonial and economic privileges to another person. In many other cases, knowledge of critical components of rituals and ceremonies was abruptly lost. The complicated social structure and ritual life which had existed prior to contact was severely disrupted by the decimation of the Makah population.

The governmental ban on traditional and ceremonial activities added to the social and cultural disruption. Potlatches were illegal by the 1870s (Marr 1987:50), forcing Makahs to move off the reservation or to inaccessible places to hold these important public events. Daniel Dorchester, Superintendent of the Indian Service wrote the following about Agent McGlinn, stationed on the Makah Reservation in 1890:

> This is one of the best officers I have seen in the Indian Service. He knows the Indians remarkably well, understands his business thoroughly, and sticks closely to it. He strictly enforces the regulations of the Department, is breaking up old Indian

> customs, marries the Indians in due forms and records the marriage, and is very strict against intemperance and licentiousness.
>
> The Indians are quite industrious in their way, though rather spasmodic in their labors. They have seasons for berrying, hunting and fishing, and are as dirty and squalid as all fish Indians are. They earn a great deal of money, but have a potlatch system, in which they give away a large amount of money and other articles in feasts... Agent McGlinn is breaking up this custom (ARCIA 1890).

Without the potlatch, the Makahs could not establish important proprietary rights regarding ownership of dances, songs, and other ceremonial and economic privileges. Public transmission of these and other important events for the oral history record could not take place, causing an additional level of social and cultural disruption.

Secret societies were also banned. These complex organizations carried important social functions prior to federal interference. Some secret societies were responsible for healing the sick, while others were important for maintaining social order and punishing transgressors (Ernst 1952). Regardless of the internal function that secret societies served for Makah society and culture, the federal government viewed these activities as savage and demoralizing (Whitner 1977, Marr 1987).

Dances and customs associated with secret societies and winter ceremonials fueled the federal opinion that boarding schools were the only way to eradicate ancestral practices which offended the American sense of morality and decorum. Agents realized that one way to assimilate Makahs and eradicate offensive rituals was to interrupt the transmission of ancestral information within what remained of Makah families. One way they achieved this objective was by separating Makah children from the influence of their family via the use of boarding school. Whitner (1977:28) quotes agent C.A. Huntington as writing, "If the purpose be to civilize these children of darkness, to take them from a barbarous life and put them into a civilized life, the more divorced from the house of their childhood the better".

The United States' policy of assimilation through education increased the socio-cultural confusion. In their attempts to "Kill the Indian but save the man", white educators forced Makah children to leave their families, abandon the Makah language, and adopt white ways of eating, dress, worship, and behavior. Many Makahs who underwent this cultural indoctrination began to feel that traditional activities and beliefs were barbaric, and worked to make their lives more like the non-Indian teachers and

administrators who promised modern education, health care and facilities.

In addition to these internal socio-cultural factors, other factors prevented whale hunting from returning to its former prominence. The gray and humpback whale populations were being seriously depleted by non-Makah hunting practices. The population of gray whales was reduced by non-Makah commercial hunters, making offshore hunting in canoes more difficult. Since the Makah style of offshore whaling relied on the ability of land-based lookouts to spot whales which swam close to shore, a lack of these whales effectively decreased the viability of the Makah whale hunt. Only three recorded whale hunts took place during 1905 (AW Smith Papers).

Men could no longer rest assured that the whales would be plentiful, and that canoes at the ready would be called to a hunt by a lookout. In addition, the intensive investment required by a whaler and his crew had not changed; men still had to invest enormous amounts of time in ritual preparation as well as in the care and maintenance of the whaling canoe and other associated gear. Without the plentiful supply of whales which had always graced Makah territory, this intensive investment became too difficult to justify.

So, men turned to a more productive venture that would still make use of the navigation and seafaring skills that both whale and seal hunters needed and used. Fishing had become a more cost effective venture than whaling prior to the turn of the last century.

> The Makahs catch a great many fish, which they ship three times a week to Seattle, where they have a good market for them. They have caught and shipped as high as 10,000 pounds of halibut in one day (ARCIA 1889).

However, offshore whaling in motorized boats was still of interest to American, Canadian, European and Asian parties. As late as 1909, a Seattle based company was considering the establishment of a commercial whaling station at Neah Bay (Webb 1988:177). Plans for the Neah Bay station were eventually abandoned.

After more than a thousand years as whale hunters, Makahs found themselves in a social, ecological and political climate that no longer favored this pursuit. The combined effects of massive epidemics, boarding schools, and government acculturation policies had drastically changed the delicate and complex social dynamic which had supported the traditional Makah whale hunt. The astounding success, then eradication, of the Makah commercial fur seal hunt contributed to this disruption as well. When these two factors are juxtaposed with severely diminishing gray

and humpback populations, even subsistence whale hunts became a risky investment. The investment in the Makah whale hunt became even riskier as more Makahs shifted toward the very successful subsistence and commercial venture of ocean fishing.

In spite of these factors, the Makah desire to reinvigorate the whaling tradition never dissipated. Families passed on whaling stories, traditions, and secrets from generation to generation. Whaling designs and crests still decorated public buildings and private homes. Accounts of Makah whalers were read again and again. Whaling displays in the Makah Cultural and Research Center and other museums kept visual scenes in the heads and hearts of Makah people. By 1994, the gray whale population had bounded back to healthy levels; the people in Neah Bay eagerly awaited the opportunity to hunt gray whales again.

THE QUOTA PERIOD

The Makah Tribe has been preparing for this revitalization for decades. Makah people never stopped educating their children about their respective familial whaling traditions. Makah children in the public school on the reservation experienced whaling curriculum every year as a part of the standard school curriculum, as well as through special cultural and linguistic initiatives sponsored by the school district, the Tribe, or any one of a number of funding sources. In fact, collaborative educational efforts through the Makah Cultural and Research Center, the Bilingual program of the Neah Bay School, and other private efforts, have provided whaling curriculum in the schools since the 1960s, with continuous efforts since 1981. While non-Makahs perceived a large temporal gap in the whaling history of the Tribe, tribal members see continuity. Many individuals were patiently waiting for the whaling traditions to be taken from storage and implemented in reality.

The Makah Tribe already has a history of successfully reviving cultural traditions. In the last two decades, the Makah Tribe has reinstituted numerous song, dance, and artistic traditions, and operated a program to restore the Makah language to spoken proficiency on the reservation. These positive accomplishments are due to the enthusiasm, dedication, and knowledge of Makah people, and to the creation of the Makah Cultural and Research Center; this institution manages the cultural resources of the Makah Nation through research, documentation, exhibition and education.

The Makah Tribe created The Makah Cultural and Research Center (MCRC) in response to the massive archaeological collection generated by the Ozette excavation. While the original intent was to create a museum to house the artifacts from the pre-contact levels at Ozette, community opinions shaped the MCRC into a research and education complex that contains numerous exhibition galleries, a language restoration project, archival programs, and a series of educational and interpretive services (Renker and Arnold 1988).

The MCRC has been instrumental in the revival of many Makah traditions. The facility has acted to centralize and incorporate the resources of Tribal government, the Makah community, and other private and public sources to manage Makah cultural resources; many of the resources and traditions that were threatened prior to the creation of the MCRC are now healthy and growing. Consequently, the Makah Tribe had a successful record of bringing ancestral traditions from a dormant state into the active present. The Tribe was confident that the resumption of whaling would be a success, and was not daunted by critics who believed that this tradition could not be reinstated.

On May 17, 1999, the Makah Tribe celebrated a pivotal moment in its long history. At 6:54am, the Creator allowed a Makah crew to realize a collective dream that the Makah Nation had stored in its minds and hearts for seventy long years: they brought a whale home to the Tribe. This pivotal cultural event riveted the attention of the Makah community, and energized Makah Tribal members who believed in, and worked toward, the restoration of this significant cultural practice.

Survey data indicate that some 1200 Makahs watched the climactic moment of the successful hunt on live television. Hundreds of Makahs traveled home to the reservation as soon as they could, wanting to be a part of this significant event. Later that day, some 1400 Makahs welcomed the whale to Front Beach in Neah Bay, and paid honor to the great creature. Many Makahs ate raw blubber right on the spot, and then began the task of preparing the food and resources that the whale contributed to the Makah people.

Butchering the whale proved a huge task for the Makah people. Lack of familiarity with gray whale anatomy, tools which were not well adapted for gray whale meat and blubber, and logistical issues presented immediate obstacles for the butchering process which began on Front Beach. Some confusion also centered on whale parts other than meat and blubber. Most importantly, Makah were able to overcome these problems and continue with the job of processing the whale.

In a matter of hours, a flatbed truck had taken what was left of the whale and driven to the Makah Tribe's fish plant, a processing plant with 800 cubic feet of freezer space and a service entrance large enough to allow the flatbed to drive inside. Within twenty-four hours, Front Beach showed no sign of the momentous event which had happened the previous day. The Makah butchering crew, which included Makahs who had travelled to Alaska to learn processing techniques, had some assistance from a Native Alaskan. Many people worked to butcher the parts of the whale which had not been distributed to Tribal members on the night of 17 May. In addition to meat and blubber, Makahs interviewed during the Makah Household Survey reported requesting and receiving whale lice, sinew, baleen, brain, and heart. Other Makahs reported that they would have liked to receive liver.

cheeks, eyes, and intestines. Some of these items, like whale lice and baleen, are primarily used for ceremonial reasons, while others, can be used in tool production or as food. The bulk of the food products derived from the whale were reserved for the Tribe's celebratory feast, which was to be held on 22 May.

In private homes, people welcomed whale meat, blubber, and other whale parts. Between 17 May and 22 May, some households began to use recipes held in family confidence for decades, and others experimented with techniques used for other sea creatures, like seals and fish. Some 62.9% of Makah households received meat from this whale; 48.4% received blubber. A majority of households which did not receive meat or blubber from this whale reported that they would have welcomed whale products into their homes (Renker 2002).

On 22 May 1999, the Makah Tribe paid tribute to the whale which provided so much to the Tribe, and celebrated a new chapter in its cultural history. Thousands of people attended the parade held during the day, and the feast held in the high school gymnasium later that afternoon. In addition to the local Makahs who attended these events, many Makahs journeyed home to participate.

Unfortunately, this has been the only successful hunt during the quota period. Restrictions on the areas in which Makahs could hunt gray whales, as well as limits on when the hunt could take place hampered efforts to take additional whales as provided by the quota. Further constraints arose from a lawsuit which resulted from a complaint filed in 1997 October. This domestic legal issue halted all Makah whaling for the latter half of 2000 and all of 2001.

Lawsuits were not the only problem that faced the Makah Tribe during this quota period. Four Tribal members alleged that the majority of Makahs were not in favor of the resumption of whaling, and that the Makah Tribal Council had misrepresented the opinion of its people. Fueled by these rumors, anti-whaling advocates staged numerous demonstrations on and off the reservation, and garnered attention from the print and visual media. These efforts also limited the success of the Makah hunt by blocking canoes, scaring whales, and threatening Makah whalers. During the 1999 whaling season, many television spots and published reports contained inaccurate or partially correct information, and included quotes from the anti-whaling Makahs who insisted that the majority of Tribal members did not want the Tribe to hunt whales. These people also accused Makahs of wasting whale products, claiming that tribal members did not like, nor consume whale products. Detractors pointed to alleged wasted meat and blubber from a 1995 whale which was incidentally caught in a fishing net.

Despite these obstacles, more and more Makah men trained to be whale hunters. During the last hunting season prior to the 9 June 2000 court decision, several family-based whaling crews were

preparing to hunt, and two family-based crews were granted a total of three permits to go hunting by the local management organization. While no crew brought a whale back to the village, the social benefits of each crew's diligent preparations positively affected dozens of families.

The Makah Reservation in 2002

The contemporary Makah Tribe lives on a 27,151 acre reservation which dominates the northwestern corner of the Olympic Peninsula of Washington State. Other reservation properties include two offshore islands, Tatoosh and Waadah, and a 719 acre parcel of land surrounding the Ozette village site. In addition to these land areas, Makah traditional cultural properties include water territories, like fishing banks, as well (Renker and Pascua 1989). At the time of the Treaty of Neah Bay, Makah traditional cultural properties extended to fishing banks and other ocean grounds as much as 100 miles offshore into the Pacific Ocean. To the north, Makah fisherman accessed rich fishing grounds which are now in Canadian waters, such as Swiftshore and 40-Mile Bank. To the east, Makahs considered the the Strait of Juan de Fuca to be at their disposal to Port Crescent. To the south, Makahs utilized the waters off of Cape Johnson, called **xacic'u?a**. "deep hole". (Swindell 1941, Renker and Pascua 1989).

In 1855, the Tribe signed the Treaty of Neah Bay, which established the boundaries of the reservation but did not recognize the multiple village system. Men negotiating for the Tribe discussed the Makah relationship with the ocean; the Tribe considered the ocean to be territory more important than land. **c'aqa.wi7**, one of these Makah chiefs, articulated this point. "I want the sea. That is my country" (Gibbs 1855). The Indian Claims Commission estimates that "seventy-five to ninety percent of the Tribe's subsistence in 1855 came from the sea rather than land based-mammals or vegetation" (Makah Indian Tribe v. United States, 23 Ind. Cl. Comm. 165, 174 (1970).

Subsequent expansion of the reservation boundaries to include villages other than Neah Bay occurred in 1872 and 1873 via three Executive Orders issued by the United States' government. The village of Ozette was not added to the reservation. Rather, another Executive Order in 1893 created a separate Ozette Reservation to accommodate 64 Makahs who refused to move to Neah Bay (Renker 1994). Today, the Makah Tribal Council is the official governing body of both the Makah Reservation and the Ozette Reservation; the United States Congress ratified the Makah Constitution in 1937 after the Tribe voted to accept the terms of the Indian Reorganization Act in 1936 (Renker 1994).

The Makah Tribe calls itself **q*idicca?a.tx**, "The People Who Live Near the Rocks and the Seagulls". The name Makah is an English version of the term used by a neighboring Tribe for the Makahs. United States' year 2000 census data indicate that there are 1,356 Makahs living in 471 households on the current

reservation. Another 1,117 Makahs live away from the reservation (Makah Planning Office 2002). Most reservation residents live in the reservation's single centralized village, Neah Bay, location of the public school, the post office, the general store, the health clinic, and other amenities. While Neah Bay is certainly the hub of reservation activity, a growing population and a housing shortage have encouraged Tribal members to live in more remote reservation locations. Two popular settlements outside Neah Bay are at the sites of former ancestral villages, such as **wa?ac'** (Why-atch) and **c'u.yas** (Tsoo-yess).

Like other locations on the Olympic Peninsula, economic conditions on the reservation have steadily declined since 1989. The Pacific salmon crisis and controversies surrounding timber practices in the area have increased the economic pressure on the reservation population. In addition, the 1989 deactivation of the United States' Air Force Base operating on the Makah Reservation created an employment crisis for the Makah community. Approximately 200 jobs left the reservation when the base closed, and plans to develop a new job source have not yet proved fruitful. In addition, fluctuations in the reservation's natural resources, commercial fishing, tourism, and sport fishing have impaired the Tribe's ability to ensure reliable incomes and subsistence sources for its members. The average unemployment rate on the reservation is approximately 51%, and fluctuates seasonally; almost 49% of reservation households have incomes classified below the federal poverty level, and 59% of the housing units are considered to be substandard (Makah Planning Office 1992). The average household income on the reservation is approximately $5,000.00, compared with approximately $40,000.00 in the rest of the state of Washington (Income 2000, US Census Bureau).

Fishing variations have had an especially drastic effect on Makah families. 95.2% of Makah households have someone in the residence who fishes; 62.8% of these households consider fishing to be the major occupation in the home (Renker 1988). While the decrease in the cash economy of the reservation is a clear result in years of diminished commercial fishing, there is a more insidious affect on the subsistence level.

Ocean fishing has replaced whale hunting as the backbone of Makah household economy. In addition to the cash that fishing generates, another level of economy operates, that of traditional reciprocal systems. Even households without a fisherman derive food, money or other goods from a fisherman who is a relative or a friend. Fish is a medium of exchange on the Makah reservation, and is also an indicator of a fisherman's regard for the individual to whom the fish is given. Indeed, people on the reservation rely on the Makah fleet for substantial contributions to community meals and community functions.

100% of the Makah households on the reservation engage in some kind of reciprocal networks which involve fish at some level of exchange: 80.4% of households receive fish from someone who

fishes; 85.3% of households give fish to other family members, friends and community meals; 84.1% of households who smoke fish give it to other family members, friends and community meals; and 35.3% of households receive goods or money from a fisherman when the season is successful (Renker 1988:8).

The 1988 Makah Household Fishing Survey also uncovered another pattern of interest in the Makah community. Over 50% of the reservation households used traditional Makah foods at least once a week; these foods included items like fermented salmon eggs, smoked fish heads and backbones, halibut cheeks and gills, and dried fish (8). 40.2% of Makah households eat fish a few times each week, and 66.7% eat fish at least once each week. These data demonstrate the community's preference for and reliance upon traditional, local, marine foods which are often not favored by the dominant American population.

Recent research available in Aradanas (2001) demonstrates the tenacity of the 1988 subsistence profile. The Makah reliance on seafood products continues to be derived from subsistence traditions, and the existence of redistributive and reciprocal networks remains strong. One striking datum compares the amount of fish consumed in Makah households with that of the average American household. The annual per capita consumption of fin fish and shellfish for the average Makah is a staggering 126 pounds, some eight times the consumption rate for the average American. While fish comprises 55% of the Makah diet, it represents only 7% of the diet of the average American (84).

Recent regulatory and ecological circumstances have had an impact on Makah marine subsistence practices. New, stringent restrictions on salmon fishing, and the yearly fluctuations in fishing quotas, restrict the ability of Makah fisherman to generate a reliable surplus for distribution. This situation has affected many households which rely on surplus fish to meet subsistence needs.

Additional ecological circumstances periodically caused by red tides and oil spills have negatively affected subsistence households which rely on shellfish resources. These events have reduced the ability of Makahs to utilize the shellfish resource as effectively as in the past. Financial compensation awarded to Tribal members as a settlement for the destruction of subsistence shellfish during one of these oil spills can not restore the health of the ecosystem.

Still other factors are affecting subsistence issues pertinent to the Makah Tribe. The Makah Tribe, like many other governmental agencies, cut its operating budget by some 10%* for the 2002 operating year. Cutbacks in food and financial support from public assistance programs affects families which are already economically stressed.

Teen age pregnancies, high school drop outs, substance abuse problems, and an increasing juvenile crime rate indicate that the

Makah community is one still in flux: the enormous social disruption caused by epidemics, boarding schools, and federal policy is still not over. Entire social, cultural, subsistence, and ceremonial institutions were either repressed, eradicated or decimated, and no structural equivalent was substituted. Continuation of the Makah whale hunt would provide the Makah Tribe with a reliable mechanism to repair the damage done to the social infrastructure during the years of forced assimilation. Additional whale hunts would certainly bring important subsistence benefits, as well as other important social considerations.

The Household Whaling Survey (HWS)

As the end of 2001 drew near, the Makah Tribal Council began preparing to submit a request for a new gray whale quota. The Makah Tribal Council wanted to address the concerns of citizens who insisted that Makahs did not support whaling, and that whale products were being frivolously wasted. Clarifying and quantifying the sentiments of enrolled Tribal members was extremely important, so the Makah Tribal Council commissioned a household survey in December 2001. This survey, The Household Whaling Survey (Renker 2002) asked Makahs to report their opinions about the whale hunt, as well as levels of participation in whaling-related activities, including the preparation and consumption of whale products. A copy of the instrument is included in Appendix 2.

Results from the Household Whaling Survey (HWC) were interesting and conclusive. The survey interviewed 34.6% of the Makah households on the reservation. 49.7% of the respondents were male; 50.3% of the respondents were female. 100% of the respondents considered themselves active members of the reservation community, attending a variety of community events, both cultural and otherwise.

The 163 respondents reported information about a population of an additional 268 household members.

Of the 163 respondents, 93.3% believed that the Makah Tribe should continue to hunt whale, 5.5% believed that the Makah Tribe should not hunt whale, and 1.2% were undecided. Clearly, a randomly selected, significant percentage of respondents were supportive of the Makah Tribe's decision to pursue the Treaty Right of hunting a whale that is no longer on the Endangered Species List. It is also interesting to note that three of the respondents who do not want the Makah Tribe to hunt whale do want whale products, like meat, bone, and/or blubber.

When asked to state a reason for this belief, respondents provided a wide variety of opinions. (Because multiple responses were allowed for this question, the positive percentage is based on the number of respondents who answered positively, R= 152.) Of the respondents who felt that the Makah Tribe should continue to hunt whale, 46.1% cited the Treaty Rights as the reason, 35.5%

noted that food, better nutrition, or a traditional diet was the reason, and 36.2% felt that maintaining or restoring some aspect of cultural heritage or tradition was the most important reason. 20.4% indicated that moral or spiritual benefits, such as changed lifestyle, better discipline, or increased pride , should prompt the Makah Tribe to continue to whale.

Respondents also provided a variety of multiple responses to the question, "Do you think whale hunting has been a positive thing for the Tribe?". The most popular response was given by 51.6% of the respondents, who indicated a change for the better in morals or social values: pride, self-esteem, changing lifestyles, abstaining from drugs and alcohol, better male responsibility, and positive role models for youth. 43.8% of respondents considered uniting the Makah Tribe, and other Tribes, as the most positive aspect of whale hunting. Respecting Treaty Rights garnered a response from 25.5% of the respondents, while maintaining or restoring cultural traditions was the reason provided by 32.7% of the respondents.

A surprising number of individuals reported that they were involved in whaling-related activities since the 1999 whale was caught. 38.7% of respondents indicated that they have participated in whaling ceremonial activities, 30.1% have cooked whale, and a resounding 81% reported eating whale products. Respondents related that 70.9% of the household members included in the study ate whale products, and that 21.6% participated in whaling ceremonial activities.

Another significant result that demonstrates overwhelming community support for the Makah whale hunt is found in the question (#45) which asks respondents to indicate subjects about which they would like more information. The majority of respondents wanted information about preparing whale products, and cleaning and carving whale bone. This question also elicited a response that was not planned. 25% of respondents indicated that they would like to share family recipes and techniques for preparing whale meat, rendering oil, and butchering whale. Given the history of secret, family information regarding whale related issues in the Makah Tribe, the fact that respondents volunteered to provide knowledge of practices, techniques, and recipes is a testament to the community's support for the continued use of whale products.

Community support for, and interest in, the Makah whale hunt is also shown by reports of participation in the actual events surrounding the successful 1999 hunt. Of the 163 respondents, 78.5% were watching live television when the whale was taken, as were 67.2% of the respondents' household members. 81.6% of the 163 respondents were present at Front Beach in Neah Bay when the whale was brought ashore, as were 87.6% of the household members. Numerous respondents who did not attend either of these events qualified their response by telling the surveyor that they had to work or were out of town, and would have attended had they been in Neah Bay.

Sixty-four respondents reported that a total of 226 non-resident Makahs billeted in their respective homes from 17 May to 22 May 1999. This datum indicates that Makah support for the whale hunt is not restricted to reservation residents. The Makahs who traveled home to the reservation felt the need to be on ancestral territory, with relatives and friends, and be a witness to the crucial events surrounding the successful whale hunt.
80.4% of the 153 respondents reported attending the Makah Tribe's celebration in honor of the first successful whale hunt in seventy years. 78.6% of these respondents attended the parade early in the day on 22 May, and 95.4% attended the feast later that afternoon. These respondents indicated that 180 (67.2%) of their household members went to the parade, and 191 (71.3%) joined the crowds at the dinner. Levels of participation like those reported here suggest the pride and happiness felt by Makahs who were observing more than the successful hunt; they were celebrating the validation of the traditions and priorities established by ancestors and secured by the signers of the Treaty of 1855.

III. WHALE HUNTING AND THE MAKAH TRIBE: THE NUTRITION COMPONENT

Prior to contact with Europeans, the Makah people used a wide variety of foods. Because of their location on the tip of the Olympic Peninsula, the Tribe was able to exploit land and sea animals, including elk, deer, bear, seal, and a diverse population of fish, shellfish, and other maritime species. In spite of this abundance, "whale meat and oil were among their principal foods" (Densmore 1939:13). Not only were these foods of high status, their role in the nutrition and ceremony of the Makah people cannot be underestimated.

Huelsbeck (1988a:1) estimates that the amount of whale meat, blubber, and oil represented in the faunal assemblage at Ozette indicates that a significant percentage of the food at Ozette could have come from cetaceans. Whale meat was prone to spoil easily, especially when the process of towing a dead animal home took several days. This tendency reduced its importance in the precontact and early historic diet. About 10% of the food Makah people derived from whales can be attributed to meat (1988a:10). Oil however, was not subject to spoilage, and could be kept indefinitely as long as it was rendered properly (Swan 1869).

This important food product was recovered from natural pockets of oil within individual whales, as well as extracted from whale bones and rendered from blubber. Ommanney (1971:55) estimates that some 50% of whale bone weight could be reduced to oil. Faunal remains from Ozette indicate that bones were hacked and gouged to allow oil to both drip from the bones and to be recovered through boiling (Fiskin 1980). Blubber was primarily used as a vehicle to recover oil. Approximately 65% of the weight of blubber is reduced to oil through a rendering process (Huelsbeck 1988a:9).

Oil was an important nutritional item for a variety of reasons. Elders report that whale oil was used as a dip with a variety of foods, including dried fish and herring eggs, as well as potatoes in historic times. Swan(1869) and Densmore(1939) corroborate these accounts. Since dried fish and herring eggs had been processed to remove all natural oils in order to contribute to their longevity, the addition of whale oil added taste as well as nutrients to the precontact and historic Makah diet.

Oil was also the only nutritional product which figured prominently in the ceremonial life of the Makah people. An oil potlatch, given when a whaler had an abundance of oil, demonstrated his generosity with this commodity, and was a rare and special occurrence. Whale oil was the only edible item which could be the focus of a special potlatch, complete with particularized songs and other ceremonial items (Densmore 1939).

While blubber's importance in both precontact and early historic

times was clearly as a precursor to oil, "blubber was also eaten, usually cured first" (Densmore 1939:14). It was most popular when broiled next to a fire, and was the standard pacifier for babies, according to oral and ethnographic accounts.

For approximately 2,000 years, the Makah people relied on the nutritional products of the whale, and evolved as a biological population within this context. Archaeological data confirm the fact that Makah people were using whale as a food resource for some 750 years before the technique of hunting whale was developed (Wessen 1990). Faunal remains from a number of sites indicate that Makahs were butchering stranded or drift whales long before the technology to hunt the creatures evolved.

When circumstances prevented the procurement of whale products for subsistence, Makahs compensated by increasing their reliance on other subsistence foods. In spite of the changes that have affected the Makah people, subsistences foods are still an important part of reservation life. Makah hunters still procure land game like elk, deer, and bear to fill winter freezers and reduce cash expenditures. The resources of the sea and the intertidal zones are an important food source (Renker 1988), despite the decreasing abundance described previously.

Recent investigations focusing on the subsistence practices of the Makah Tribe in forest areas (Renker 1994) and the intertidal zone (1993) detailed a viable and thriving culture. Elders described the subsistence philosophy of the Makah people, and stressed the importance of teaching these values to younger people. Younger Makahs participating in these studies were familiar with these teachings, and practiced these subsistence rules when hunting or gathering food.

The most important subsistence strategy to the Makah people is the axiom, "Take only what you need." Makah elders emphasize this principle when the discussion centers on any type of hunting, gathering, or fishing activity (Renker 1993:14). Other common subsistence rules include: 1)choosing the procurement area so that the available biomass is not adversely affected by the amount one needs to harvest, 2) choosing the procurement area that limits the need to travel, and 3) choosing the food to hunt or gather based on the seasons of the food in question; one tries to avoid disturbing reproductive cycles, for example. The continuity of these subsistence practices and values reinforces the social and cultural integrity of the Makah people, and constantly reminds Tribal members of their intimate, and long standing, relationship with the environment.

These subsistence foods and practices are very important when considering the nutritional needs of contemporary Makah people. Modern research concentrating on the nutritional needs of an anthropologically defined population emphasizes " the interactions of genetics, physiological processes, population characteristics, and a wide variety of nutrition-related diseases" (Pelto 1989:x). Using these criteria, a discussion of

the profile of the Makah community yields interesting results when the focus is the use of the whale as food.

Consider the following. American Indian people are generally considered to be one of the most unhealthy populations living within the United States of America; this observation is especially true for natives living within the confines of a reservation. The infant mortality and life expectancy rate for reservation residents is the lowest of all American citizens (IHS 1995).

The diminished life expectancy on American Indian reservations is compounded by the fact that certain systemic illnesses linked to food and nutrition appear in statistically higher percentages among these populations. Diabetes, for example, is 234% more prevalent among American Indian people than in all other U.S. races (Indian Health Service 1995: 5). As a matter of fact, "American Indians have the highest rates of diabetes in the world" (NIH 1996:26).

A statistic of this magnitude is especially intriguing when one considers the nutritional history of indigenous American Tribes, and their respective divergence from the food traditions which mark western populations. Prior to contact with Europeans, North American Tribal people consumed foods which were native to their respective environments. Natives of the Great Plains and the Pacific Northwest were hunters and gatherers who utilized the plant and animal species which lived in and migrated through their territories. Natives of the Southwest and the Northeast augmented nature's bounty by cultivating crops, most of which were not available in Europe. (It is interesting to note that Makah people did not utilize plant foods to a great degree (Gill 1983), and still experience many digestive problems with diets high in fiber and cruciferous vegetables (IHS 1991).)

When traditional Tribal life was disrupted by contact with non-Natives, food traditions were some of the first to be affected. By the time the Treaties called for the forced placement of Tribal people on reservations in the 1850s, very few Tribes could still practice the subsistence patterns which had sustained their ancestors.

Hunting and gathering tribes were restricted because their ability to utilize former usual and accustomed resource areas was diminished; the reservation system made it possible for non-Native populations to acquire and control lands and waters once available to Tribes. Through Treaties, agricultural tribes lost valuable land capable of cultivation to non-Indian farmers, and were given less productive reservation land as compensation. Additional stresses on native food traditions appeared when the American westward expansion and growing commercial interests decimated food animals once plentiful before contact.

No matter what the individual Tribal food tradition, professionals in the health and social science fields appear to

agree that the introduction of western foods like refined sugar and flour, beef, and lard have had a dramatic negative effect on the health of American Tribal members in general. Many of these foods were distributed to reservation natives by the American government in the form of annuities and supplies. Specific studies have directly linked the introduction of western foods into the diet of Tribal entities to a variety of health problems (Hildes 1966:501, Keenleyside 1990:13, NIH 1996, and others).

American health organizations such as The National Institutes of Health (NIH), the National Institute of Diabetes and Digestive and Kidney Diseases, the Public Health Service, and the Department of Health and Human Services, are conducting research to try to determine why American Indian populations are subject to food related illnesses at a rate so much greater than the rest of the population. In many cases, reservation residents contract these illnesses at about half the age of Caucasians, according to the Indian Health Service (1995).

Many current studies are now investigating the link between genetics and the acquisition of nutrition related illness. The most important of these studies focuses on the Pima Indians of Arizona, a group with a food tradition dating back some 2,000 years; their traditional diet and lifestyle were disrupted about 200 years ago, causing major social and nutritional changes. The high rates of diabetes and obesity in this Tribe prompted the National Institutes of Health and several other American health organizations to undertake a long-term study of this population.

Thirty years of concerted studies with the Pima people have demonstrated results applicable to other Tribal people in North America, including the Makah. Research indicates that discrete populations evolve a genetic code that is uniquely suited to a particular environment and its food resources. This genetic code regulates the biochemical processes in the body that produce enzymes, proteins, fatty acids, and thousands of other chemicals which function within the human body. Scientists developing the genetic map for the Pima people have already identified a number of genetic variations within this community that are different from those in the white population (NIH 1996:6). These variations may explain why Pima people eating western foods are more prone to develop diabetes, obesity, and the long-term consequences of these health problems than other populations.

Like the Pima people, Makahs found their traditional pattern of food use interrupted by western contact about 200 years ago. The traditional diet rich in fish and sea mammal oils was gradually replaced by a western diet which considered beef, dairy products, and cereals to be the most nutritious. The whale products which once comprised a principal part of the diet were no longer available, and the whale oil which supplemented the preserved foods of the winter season was replaced by butter and margarine. A high proportion of lactose intolerance became apparent in the

Makah community, a fact not surprising for a population with no previous historic or cultural link to cattle or dairy animals (NIH 1996).

Given this perspective, certain IHS data become especially intriguing. For example, Indian people of the Northwest Coast have the highest rate of digestive illnesses of all American Indian people. Such illnesses comprise the leading cause of hospitalization for native people in this area. For northwest people, 16.5 % of all hospitalizations pertained to digestive diseases, compared to the next highest rate of 12.3% for Navajo people (Indian Health Service 1995). And, in terms of overall nutritional health, Makah and northwest people are at a potential genetic disadvantage because these populations evolved without a reliance on high fiber, low fat foods, like the Pimas.

Consequently, the reintroduction of whale products, especially whale oil, may produce dramatic results in the health of the Makah people. Current research in the importance and application of Essential Fatty Acids (EFAs), such as those found in sea mammals and fish oils, support the contention that the inclusion of whale oil in the Makah diet may have crucial implications for the health of the Makah community. This fact is not as surprising as it may seem when one considers the historic western use of products like cod liver oil as an important nutritional supplement.

For example, the Washington Office of the Superintendent of Public Instruction (OSPI) details the fact that Makah children attending public school on the reservation exhibit Attention Deficit Disorder (ADD), Attention Deficit Hyperactivity Disorder (ADHD), reading disabilities, and dyslexia at a rate almost twice that of the rest of the population (1996). Clinical studies which focused on the correlation between EFAs and these conditions report that children receiving supplemental EFAs demonstrate significant improvement in the ability to pay attention and read effectively (Stevens, Zentall, et al:1995; Stordy:1995).

In addition, marine EFAs have been clinically demonstrated to improve conditions like rheumatoid arthritis (Belch, Amsell, Madho, Dowd, and Sturrock:1988) and diabetic neuropathy (Keen, Payan, Walker,et al:1993). Both conditions are prevalent in the Makah community and especially within descendants of whaling families.

Whale oil and whale products may be the answer to these problems within the Makah community, and may provide researchers with an analogous study situation to that within the Pima community. Marine fish like salmon are becoming more scare within Makah households due to increasingly stringent quotas which disrupt traditional systems of reciprocity (Renker 1988). Consequently, access to whale products could provide Makahs with a nutritional remedy to many community health problems.

Access to whale products can provide the Makah community with important nutritional opportunities that carry implications for non-Makahs. Like their Pima counterparts, Makahs may be able to augment knowledge about the relationship between genetic patterns, nutrition, and health, especially in the area of EFAs. Community members are ready to rise to this challenge and re-learn the techniques necessary to make the food from the whale a part of Makah life again.

This section is not intended to imply that we can scientifically elucidate the nutritional advantages of whale products, especially oil, for the Makah Tribe. However, recent national studies provide some points of interest. Investigations of local populations with a demonstrable time depth indicate that regional genetic factors evolve in order to maximize the dynamic relationship between certain foods and the patterns in which these foods are consumed by subsistence populations. Consequently, it is reasonable to assume that increasing the consumption of locally available foods consumed through the millenia could confer substantial health benefits.

Such is the case for whale products and the Makah Tribe. The food products of the gray whale have sustained the Makah people for over 2,000 years; the Tribe has been less culturally and physically healthy since this access was restricted seventy years ago. A restoration of the ability to hunt the gray whale will provide the Makah Tribe with a key element of its culture that has been able to exist only in the flickering images of oral history for seven decades. The social fabric of the community will be able to patch its thin areas once the hunt is restored, and the physical health of the Makahs will increase once there is enough whale meat and oil to feed its children.

In addition, the addition of whale products will help to replace other subsistence resources which are in decline. As fish and shellfish quantities decrease on the reservation, the availability of whale products will prevent people from having to spend precious cash to replace current subsistence foods.

The resumption of the whale hunt will provide more than subsistence foods for the body. It will provide spiritual subsistence to the soul of the Makah people.

APPENDIX 1

MAKAH ALPHABET

The Makah alphabet variation used in this document is a function of printer and software limitations. The Makah alphabet is a variation of the International Phonetic Alphabet, and is presented in Renker (1987). No capital letters are used in this alphabet.

The following substitutions are used:

= IS EQUIVALENT TO A BARRED L

7 IS EQUIVALENT TO A BARRED LAMBDA

* IS EQUIVALENT TO A RAISED W

' IS EQUIVALENT TO A GLOTTAL MARK

? IS EQUIVALENT TO A GLOTTAL STOP

. IS EQUIVALENT TO A LENGTH MARKER

APPENDIX 2

CONFIDENTIAL HOUSEHOLD WHALING SURVEY

This survey is commissioned and sanctioned by the Makah Tribal Council, and is being administered by the Makah Cultural and Research Center. The data from this survey will be used in creating the new Needs Statement. This document will be a part of the United States' request to provide the Makah Tribe with another five year quota to hunt gray whales; the request is made to the International Whaling Commission.

Your name and the information you provide are strictly confidential. No information you provide will be linked directly to you in the Needs Statement. In fact, the author of the Needs Statement will not even know who has answered these surveys.

The completed surveys will be sealed and placed in the Archives of the Makah Cultural and Research Center. Access to these documents will be restricted by the Makah Tribal Council.

The respondent for this survey must be a Makah who is 21 years of age or more. For the purposes of this survey, a household member is considered to be any person that is residing in your house at the time of this interview. This survey is interested in the Makah members of your household.

ABOUT YOU AND YOUR MAKAH HOUSEHOLD MEMBERS...

1. Are you Makah? Yes _____ No _____

   Age _____ Gender _____

2. Do you have any Makahs living in your household? Yes _____ No____

   How many?_____

   If yes, complete 2a. If no, skip to 3.

2a. List all Makahs by relationship, gender, and age.

3. Where were you born? _____

4. Do you attend Neah Bay village events? Yes _____ No_____

4a. If yes, please check all that apply.

Sporting Events _____

Community Dinners _____

Potlatches _____

Health Presentations _____

Makah Days Events _____

MTC Quarterly/Annual Meetings _____

Neah Bay K-12 School Events _____

Other (Please specify)_____

ABOUT YOUR MAKAH HOUSEHOLD MEMBERS AND WHALING IN 1999...

5. Were you watching television when the 1999 whale was harpooned and killed?
Yes _____ No _____

6. Were any of your Makah household members watching TV when the 1999 whale was harpooned and killed?
Yes _____ No _____

7. If yes, how many Makah household members were watching TV when the 1999 whale was harpooned and killed?
_____

8. Were you on Front Beach, or in a boat/canoe on the water, when the 1999 whale was brought ashore?
Yes _____ No _____

9. Were any of your Makah household members on Front Beach or in a boat/canoe on the water, when the 1999 whale was brought ashore?
Yes _____ No _____

10. If yes, how many? _____

11. Did any Makahs who live off the reservation come to spend the night at your house from May 17, 1999, the night the whale came ashore, to May 22, 1999, the night of the Tribe's celebration?
Yes _____ No _____

12. If yes, how many non-resident Makahs spent the night at your house from May 17, 1999 till May 22, 1999.

_____

13. Did you attend the Makah Tribe's celebration of the 1999 whale on May 22, 1999?

Yes _____ No _____

14. If yes, which events? Check all that apply.

Parade _____

Dinner _____

15. If you attended the dinner, in which way did you participate? Check all that apply.

Attended the dinner _____

Helped butcher the whale _____

Helped cook the whale _____

Helped cook other items at the dinner _____

Helped serve at the dinner _____

Helped set up the gym _____

Helped decorate the gym _____

Sang at the dinner _____

Other (Please specify) _____

16. Did any of your Makah Household members attend the Makah Tribe's celebration of the 1999 whale on May 22, 1999?

Yes _____ No _____

17. If yes, how many Makah household members attended the Makah Tribe's celebration of the 1999 whale on May 22, 1999? _____

18. For each Makah household member, please check which events s/he attended. Check all that apply.

	#1	#2	#3	#4	#5	#6
Parade						
Dinner						

19 If Makah household members attended the dinner, in which way did each participate? Check all that apply.

	#1	#2	#3	#4	#5	#6
Attend the dinner						
Helped butcher the whale						
Helped cook the whale						
Helped cook other dinner items						
Helped serve at the dinner						
Helped set up the gym						
Sang at the dinner						
Other (Please specify)						

20. Did your household receive meat from the 1999 whale?
Yes_____ No_____

If no, skip to question 23.

21. What did you do with the meat? (Check all that apply.)

Prepare it _____

Redistribute it _____

other _____

22. If you prepared it, what did you do? (Check all that apply.)

Jerky _____

Roasts _____

Stew _____

Steaks _____

Smoked meat _____

Other (Please specify) _____

Now skip to question 24.

23. Would you have liked to get meat from this whale?
Yes _____ No _____

24. Did your household receive blubber from the 1999 whale?
Yes _____ No _____

If no, skip to question 27.

25. What did you do with the blubber? (Check all that apply.)

Prepare it _____

Redistribute it _____

Other _____

26. If you prepared it, what did you do? (Check all that apply.)

Smoked it _____

Rendered it _____

Ate it raw _____

Pickled it _____

Boiled it _____

Cosmetics _____

Other (Please specify.) _____

Now skip to question 28.

27. Would you have liked to receive blubber from the 1999 whale?
Yes _____ No _____

28. Did your household receive whale oil from someone as a result of the 1999 whale?
Yes _____ No _____

29. Did your household receive any other parts from the 1999 whale?
Yes _____ No _____

30. If yes, what parts did your household receive? What did you do with them?

31. Were there any other parts of the 1999 whale you would have liked your household to receive?
Yes _____ No _____

32. If yes, which ones?

ABOUT YOUR MAKAH HOUSEHOLD AND OTHER WHALING ACTIVITIES...

33. Would you like to have whale oil in your household on a regular basis?
Yes _____ No _____

34. Would you like to have whale meat in your household on a regular basis?
Yes _____ No _____

35. Would you like to have whale blubber in your household on a regular basis?
Yes _____ No _____

36. Would you like to have whale bone in your household on a regular basis?
Yes _____ No _____

37. Please check all whaling activities that you have been involved in since the 1999 whale was caught.

Member of whaling crew _____

Member of Whaling Commission _____

Butchering whale _____

Cooking whale _____

Smoking whale _____

Rendering oil _____

Eating whale products _____

Redistributing whale products to other Makahs _____

Participating in whaling ceremonial activities _____

Carving whale bone _____

Member of whaling support crew _____

Other (Please specify.) _____

38. Please check all whaling activities that any HH members have been involved in since the 1999 whale was caught. Please specify for each household member.

	#1	#2	#3	#4	#5	#6
Member of whaling crew						
Member of Whaling Commission						
Butchering whale						
Cooking whale						
Smoking whale						
Rendering oil						
Eating whale products						
Redistributing whale products						
Participating in whaling ceremonial activities						
Carving whale bone						

Member of whaling support crew

Other (Please specify.)

ABOUT YOUR OPINIONS REGARDING WHALE HUNTING...

39. Should the Tribe continue to hunt whale? Yes _____ No _____

40. What are the reasons for your answer?

41. If you answered yes to 39, do you think whale hunting has been a positive thing for the Tribe? Yes _____ No _____

42. What are your reasons for this answer?

43. Would you like to have more access to whale products in the future?

Yes _____ No _____

If yes, go to 44. If no, go to 45.

44. Which whale products would you like more of in the future?

raw meat _____

meat cooked or preserved by someone else _____

raw blubber _____

whale oil _____

bone _____

other (specify) _____

45. Would you like more information about any of the following? Check all that apply.

Whale hunting _____

Cooking whale meat _____

Butchering whale _____

Rendering oil _____

Smoking meat _____

Cleaning whale bone _____

Carving whale bone _____

Other (Specify) _____

46. Are there any other comments you would like to make?

APPENDIX 3

MAKAH HOUSEHOLD SURVEY METHODOLOGY

The survey was administered by the Makah Cultural and Research Center, an institution with twenty-two years of experience conducting household surveys on the Makah Reservation. The author of the instrument conducted numerous household surveys in the Makah community over the last twenty-two years; each of these surveys employed the same methodology. Results were tabulated and analyzed by the developer of the survey instrument.

In order to conduct the most accurate survey possible, the Household Whaling Survey is based on the following:

1. Names of households to be surveyed were drawn randomly from the Makah Tribe's Turkey Distribution List. This list contains all households on the reservation in which at least one enrolled Makah resides. 34.6% of the Tribe's 471 Makah households were interviewed.

2. All surveys were conducted in person by an enrolled Makah trained in proper survey procedures, who insured all respondents that confidentiality would be protected.

3. The survey contacted 217 of the Tribes 471 households. Of this number, 159 households agreed to be interviewed. Interestingly enough, four of the Makahs who publicly challenged the Tribe's decision to whale had their respective names randomly drawn to be surveyed. Because the Tribe wanted to minimize external influences on the survey administration, these four individuals were not surveyed. However, to maintain proper responses, these individuals were marked to answer negatively to all questions which asked for positive or negative opinions regarding Makah whaling, access to whale products, and use of whale products, as per their publically expressed opinions. Question marks indicate responses for which the survey had no information at all.

   Counting these four individuals, the total number of respondents for the survey is tallied at 163. Percentages are tallied accordingly. Five household volunteered to be included in the survey. While these households were encouraged to complete a survey form, these five respondents were NOT included in the random population of 163.

4. All survey respondents had to be enrolled Makahs with a reservation household; all respondents also had to be twenty-one years of age or older. Survey methodology assumes that each respondent is capable of answering questions about his/her own ideas and activities regarding whaling, as well as the activities of his/her household members regarding whaling.

5. A master list which related each chosen household to an exclusive number was kept at the Makah Cultural and Research Center to avoid duplication and protect confidentiality. Surveyors returned completed surveys to the Makah Cultural and Research Center, which maintained security for the documents. All completed surveys are archived at the Makah Cultural and Research Center.

6. The author/tabulator did not know the names of the respondents, and related to surveys by number only.

7. Certain questions allowed for multiple responses. Others did not. In addition, certain questions only allowed respondents who had answered a previous question a particular way to answer. Incidents of both types are indicated on the survey instrument, which is appended in 2. On the tabulation sheet, the base number of respondents is indicated by R= . R=163 means that the percentage is calculated based on the answers of 163 respondents.

8. Internal checks and balances were placed in the instrument to encourage data validity.

9. Answers are reported as percentages calculated from the base number of respondents appropriate to each question. Percentages are rounded to the nearest tenth.

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TREATY WITH THE MAKAH, 1855.

Jan. 31, 1855.

12 Stat., 939.
Ratified Mar. 8, 1859.
Proclaimed Apr. 18, 1859.

Articles of agreement and convention, made and concluded at Neah Bay, in the Territory of Washington, this thirty-first day of January, in the year eighteen hundred and fifty-five, by Isaac I. Stevens, governor and superintendent of Indian affairs for the said Territory, on the part of the United States, and the undersigned chiefs, head-men, and delegates of the several villages of the Makah tribe of Indians, viz: Neah Waatch, Tsoo-Yess, and Osett, occupying the country around Cape Classett or Flattery, on behalf of the said tribe and duly authorized by the same.

Surrender of lands to the United States.

ARTICLE 1. The said tribe hereby cedes, relinquishes, and conveys to the United States all their right, title, and interest in and to the lands and country occupied by it, bounded and described as follows, viz: Commencing at the mouth of the Oke-ho River, on the Straits of Fuca; thence running westwardly with said straits to Cape Classett or Flattery; thence southwardly along the coast to Osett, or the Lower Cape Flattery; thence eastwardly along the line of lands occupied by the Kwe-déh-tut or Kwill-eh-yute tribe of Indians, to the summit of the coast-range of mountains, and thence northwardly along the line of lands lately ceded to the United States by the S'Klallam tribe to the place of beginning, including all the islands lying off the same on the straits and coast.

Boundaries.

Reservation.

Boundaries.

ARTICLE 2. There is, however, reserved for the present use and occupation of the said tribe the following tract of land, viz: Commencing on the beach at the mouth of a small brook running into Neah Bay next to the site of the old Spanish fort; thence along the shore round Cape Classett or Flattery, to the mouth of another small stream running into the bay on the south side of said cape, a little above the Waatch village; thence following said brook to its source; thence in a straight line to the source of the first-mentioned brook, and thence following the same down to the place of beginning; which said tract shall be set apart, and so far as necessary surveyed and marked out for their exclusive use; nor shall any white man be permitted to reside upon the same without permission of the said tribe and of the superintendent or agent; but if necessary for the public convenience, roads may be run through the said reservation, the Indians being compensated for any damage thereby done them. It is, however, understood that should the President of the United States hereafter see fit to place upon the said reservation any other friendly tribe or band to occupy the same in common with those above mentioned, he shall be at liberty to do so.

Whites not to reside thereon unless, etc.

Roads may be made.

Other friendly bands may be placed thereon.

Indians to settle on reservation within a year.

ARTICLE 3. The said tribe agrees to remove to and settle upon the said reservation, if required so to do, within one year after the ratification of this treaty, or sooner, if the means are furnished them. In the mean time it shall be lawful for them to reside upon any land not in the actual claim and occupation of citizens of the United States, and upon any land claimed or occupied, if with the permission of the owner.

Rights and privileges secured to Indians.

ARTICLE 4. The right of taking fish and of whaling or sealing at usual and accustomed grounds and stations is further secured to said Indians in common with all citizens of the United States, and of erecting temporary houses for the purpose of curing, together with the privilege of hunting and gathering roots and berries on open and unclaimed lands: *Provided, however*, That they shall not take shell-fish from any beds staked or cultivated by citizens.

Proviso.

Payments by the United States.

ARTICLE 5. In consideration of the above cession the United States agree to pay to the said tribe the sum of thirty thousand dollars, in the following manner, that is to say: During the first year after the ratification hereof, three thousand dollars; for the next two years, twenty-

five hundred dollars each year; for the next three years, two thousand dollars each year; for the next four years, one thousand five hundred dollars each year; and for the next ten years, one thousand dollars each year; all which said sums of money shall be applied to the use and benefit of the said Indians, under the direction of the President of the United States, who may from time to time determine at his discretion upon what beneficial objects to expend the same. And the superintendent of Indian affairs, or other proper officer, shall each year inform the President of the wishes of said Indians in respect thereto.

How to be applied.

ARTICLE 6. To enable the said Indians to remove to and settle upon their aforesaid reservation, and to clear, fence, and break up a sufficient quantity of land for cultivation, the United States further agree to pay the sum of three thousand dollars, to be laid out and expended under the direction of the President, and in such manner as he shall approve. And any substantial improvements heretofore made by any individual Indian, and which he may be compelled to abandon in consequence of this treaty, shall be valued under the direction of the President and payment made therefor accordingly.

Appropriation for removal and for clearing and fencing land, etc.

ARTICLE 7. The President may hereafter, when in his opinion the interests of the Territory shall require, and the welfare of said Indians be promoted thereby, remove them from said reservation to such suitable place or places within said Territory as he may deem fit, on remunerating them for their improvements and the expenses of their removal, or may consolidate them with other friendly tribes or bands; and he may further, at his discretion, cause the whole, or any portion of the lands hereby reserved, or such other land as may be selected in lieu thereof, to be surveyed into lots, and assign the same to such individuals or families as are willing to avail themselves of the privilege, and will locate thereon as a permanent home, on the same terms and subject to the same regulations as are provided in the sixth article of the treaty with the Omahas, so far as the same may be practicable.

Indians may be removed from the reservation.

Tribes may be consolidated.

Ante, p. 612.

ARTICLE 8. The annuities of the aforesaid tribe shall not be taken to pay the debts of individuals.

Annuities of tribe not to pay individual debts.

ARTICLE 9. The said Indians acknowledge their dependence on the Government of the United States, and promise to be friendly with all citizens thereof, and they pledge themselves to commit no depredations on the property of such citizens. And should any one or more of them violate this pledge, and the fact be satisfactorily proven before the agent, the property taken shall be returned, or in default thereof, or if injured or destroyed, compensation may be made by the Government out of their annuities. Nor will they make war on any other tribe except in self-defence, but will submit all matters of difference between them and other Indians to the Government of the United States or its agent for decision and abide thereby. And if any of the said Indians commit any depredations on any other Indians within the Territory, the same rule shall prevail as that prescribed in this article in case of depredations against citizens. And the said tribe agrees not to shelter or conceal offenders against the United States, but to deliver up the same for trial by the authorities.

Indians to preserve friendly relations.

To pay for depredations.

Not to make war, except.

To surrender offenders.

ARTICLE 10. The above tribe is desirous to exclude from its reservation the use of ardent spirits, and to prevent its people from drinking the same, and therefore it is provided that any Indian belonging thereto who shall be guilty of bringing liquor into said reservation, or who drinks liquor, may have his or her proportion of the annuities withheld from him or her for such time as the President may determine.

Annuities to be withheld from those drinking ardent spirits.

ARTICLE 11. The United States further agree to establish at the general agency for the district of Puget's Sound, within one year from the ratification hereof, and to support for the period of twenty years an agricultural and industrial school, to be free to children of the said tribe in common with those of the other tribes of said district and to

United States to establish an agricultural, etc., school for the Indians; to provide tools and employ mechanics, etc.

provide a smithy and carpenter's shop, and furnish them with the necessary tools and employ a blacksmith, carpenter and farmer for the like term to instruct the Indians in their respective occupations. *Provided, however*, That should it be deemed expedient a separate school may be established for the benefit of said tribe and such others as may be associated with it, and the like persons employed for the same purposes at some other suitable place. And the United States further agree to employ a physician to reside at the said central agency, or at such other school should one be established, who shall furnish medicine and advice to the sick, and shall vaccinate them; the expenses of the said school, shops, persons employed, and medical attendance to be defrayed by the United States and not deducted from the annuities.

A physician, etc.

The tribe is to free all slaves and not to acquire others.

ARTICLE 12. The said tribe agrees to free all slaves now held by its people, and not to purchase or acquire others hereafter.

Not to trade out of the United States.

Foreign Indians not to reside on the reservation.

ARTICLE 13. The said tribe finally agrees not to trade at Vancouver's Island or elsewhere out of the dominions of the United States, nor shall foreign Indians be permitted to reside in its reservation without consent of the superintendent or agent.

When treaty to take effect.

ARTICLE 14. This treaty shall be obligatory on the contracting parties as soon as the same shall be ratified by the President of the United States.

In testimony whereof, the said Isaac I. Stevens, governor and superintendent of Indian affairs, and the undersigned, chiefs, headmen and delegates of the tribe aforesaid have hereunto set their hands and seals at the place and on the day and year hereinbefore written.

Isaac I. Stevens, governor and superintendent. [L. S.]

Tse-kauwtl, head chief of the Makah tribe, his x mark. [L. S.]
Kal-chote, subchief of the Makahs, his x mark. [L. S.]
Tah-a-howtl, subchief of the Makahs, his x mark. [L. S.]
Kah-bach-sat, subchief of the Makahs, his x mark. [L. S.]
Kets-kus-sum, subchief of the Makahs, his x mark. [L. S.]
Haatse, subchief of the Makahs, his x mark. [L. S.]
Keh-chook, subchief of the Makahs, his x mark. [L. S.]
It-an-da-ha, subchief of the Makahs, his x mark. [L. S.]
Klah-pe-an-hie, or Andrew Jackson, subchief of the Makahs, his x mark. [L. S.]
Tsal-ab-oos, or Peter, Neah village, his x mark. [L. S.]
Tahola, Neah village, his x mark. [L. S.]
Kleht-li-quat-stl, Waatch village, his x mark. [L. S.]
Too-whaii-tan, Waatch village, his x mark. [L. S.]
Tahts-kin, Neah village, his x mark. [L. S.]
Nenchoop, Neah village, his x mark. [L. S.]
Ah-de-ak-too-ah, Osett village, his x mark. [L. S.]
William, Neah village, his x mark. [L. S.]
Wak-kep-tup, Waatch village, his x mark. [L. S.]
Klaht-te-di-yuke, Waatch village, his x mark. [L. S.]
Oobick, Waatch village, his x mark. [L. S.]
Bich-took, Waatch village, his x mark. [L. S.]
Baht-se-ditl, Neah village, his x mark. [L. S.]
Wack-shie, Neah village, his x mark. [L. S.]
Hah-yo-hwa, Waatch village, his x mark. [L. S.]
Daht-leek, or Mines, Osett village, his x mark. [L. S.]
Pah-hat, Neah village, his x mark. [L. S.]
Pai-yeh, Osett village, his x mark. [L. S.]
Tsah-weh-sup, Neah village, his x mark. [L. S.]
Al-is-kah, Osett village, his x mark. [L. S.]
Kwe-tow'tl, Neah village, his x mark. [L. S.]
Kaht-saht-wha, Neah village, his x mark. [L. S.]
Tchoo-quut-lah, or Yes Sir, Neah village, his x mark. [L. S.]
Klatts-ow-sehp, Neah village, his x mark. [L. S.]
Kai-kl-chis-sum, Neah village, his mark. [L. S.]
Kah-kwt-lit-ha, Waatch village, his x mark. [L. S.]
He-dah-titl, Neah village, his x mark. [L. S.]
Sah-dit-le-uad, Waatch village, his x mark. [L. S.]
Klah-ku-pihl, Tsoo-yess village, his x mark. [L. S.]
Billuk-whtl, Tsoo-yess village, his x mark. [L. S.]
Kwah-too-qualh, Tsoo-yess village, his x mark. [L. S.]
Yooch-boott, Tsoo-yess village, his x mark. [L. S.]
Swell, or Jeff. Davis, Neah village, his x mark. [L. S.]

MAKAH TRIBE
P.O. BOX 115 • NEAH BAY, WA 98357 • 360-645-2201
The Makah Tribe is an equal opportunity employer.

RESOLUTION NO.: **17-05**
DATE ENACTED: **02-03-05**

RESOLUTION NO. 17-05 OF THE MAKAH TRIBAL COUNCIL

WHEREAS, the Makah Tribal Council is the governing body of the Makah Indian Tribe of the Makah Indian Reservation, Washington, by authority of the Constitution and Bylaws of the Makah Indian Tribe as approved on May 16, 1936, by the Secretary of the Interior; and

WHEREAS, the Makah Tribe has a documented whaling tradition and has depended on whaling as the basis of its economy, subsistence, and culture for at least 1,500 years; and

WHEREAS, the 1855 Treaty of Neah Bay secures in perpetuity the Tribe's right of taking fish and whaling and sealing at all usual and accustomed grounds and stations; and

WHEREAS, the June 7, 2004 second amended opinion by the Ninth Circuit Court of Appeals on *Anderson v. Evans* 371 F.3d 475 (9th Cir. 2004) requires the Makah Tribe to seek a waiver and/or permit under the Marine Mammal Protection Act (MMPA) in order to exercise the whaling rights secured in the Treaty of Neah Bay.

NOW THEREFORE BE IT RESOLVED the Chairman of the Makah Tribal Council is authorized to submit the attached application under Section 101(a)(3) of the Marine Mammal Protection Act (MMPA), 16 U.S.C. § 1371(a)(3), to the National Oceanic and Atmospheric Administration for a waiver of the moratorium on the taking of taking of marine mammals which would allow the Tribe to conduct a Treaty ceremonial and subsistence (C&S) harvest of up to 20 gray whales from the Eastern North Pacific (ENP) stock in a five-year period, with a maximum of five whales per year.

MAKAH TRIBAL COUNCIL

Ben Johnson, Jr.
Chairman

CERTIFICATION

The foregoing Resolution was adopted at a regular meeting held on February 3, 2005, at which a quorum was present, and the Resolution was adopted by a vote of _3__ FOR and _0__ AGAINST, the Chairperson, or the Vice-Chairperson in his absence, being authorized to sign the Resolution.

By: _____
JoDean Haupt-Richards
Tribal Secretary

MAKAH TRIBE

P.O. BOX 115 • NEAH BAY, WA 98357 • 360-645-2201

January 24, 2006

William T. Hogarth, Ph.D.
Assistant Administrator
National Oceanic and
Atmospheric Administration
Room 14636
1315 East-West Hwy
Silver Spring, MD 20910

Re: Makah Tribe's clarification of MMPA waiver request application

Dear Dr. Hogarth,

On February 11, 2005, the Makah Tribal Council (Tribe) submitted a request to the National Marine Fisheries Service (NMFS) for a waiver of the Marine Mammal Protection Act (MMPA) take moratorium that would allow a limited harvest from the Eastern North Pacific stock of gray whales as secured in the 1855 Treaty of Neah Bay. We specified in the 2005 request that the total take of gray whales for which the Tribe seeks a waiver is up to 20 gray whales in any five-year period, subject to a maximum of five gray whales in any calendar year.

While our prior request focused on the MMPA waiver and also sought a simultaneous review under the National Environmental Policy Act (NEPA), we recognize that NMFS must analyze the proposed hunting activities in the context of additional laws and regulations. This letter clarifies that the Tribe is asking NMFS to analyze the 2005 request to conduct Treaty ceremonial and subsistence hunting of gray whales under whatever authorities it may deem applicable. In making this request, the Tribe reserves its right to contest a future determination by the United States government that a particular law or regulation may be applied to restrict the Tribe's ability to exercise its whaling rights under the Treaty of Neah Bay.

Sincerely,

MAKAH TRIBAL COUNCIL

Ben Johnson, Jr.
Chairman

CC: Robert Lohn, NMFS Northwest Regional Administrator
Stanley Speaks, BIA Northwest Regional Director

Resolution No. 57-01
Date Enacted 5-30-01
subject Matter: Makah Gray Whale Management Plan Amendments

RESOLUTION NO. 57-01 OF THE MAKAH TRIBAL COUNCIL

WHEREAS, the Makah Tribal Council is the governing body of the Makah Indian Tribe of the Makah Indian Reservation, Washington, by authority of the Constitution and By-Laws of the Makah Indian Tribe as approved on May 16, 1936, by the Secretary of the Interior;

WHEREAS, the Treaty of Neah Bay secures in perpetuity the Tribe's right of taking fish and whaling and sealing at all usual and accustomed grounds and stations;

WHEREAS, on October 23, 1997, the International Whaling Commission approved the Makah Tribe's request for an aboriginal subsistence quota of 20 gray whales which my be taken between the years 1998 and 2002;

WHEREAS, on January 341998, the Council adopted Resolution No. 67-98 which adopted the Management Plan for Makah Treaty Gray Whale Hunting for the Years 1998-2002;

WHEREAS, after consultation with the Makah Whaling Commission and the National Marine Fisheries Service, the Council has determined that it is necessary to amend the Management Plan so as to allow for greater flexibility in the times and areas in which Tribal members are permitted to hunt while still providing a high margin of safety for the conservation of the gray whale and public safety;

NOW THEREFORE BE XT RESOLVED that Makah Gray Whale Management Plan for 1998-2002 is hereby amended as set forth in the Makah Gray Whale Management Plan for 1998-2002 As Amended April 2001 attached hereto.

MAKAH TRIBAL COUNCIL

By: Greig A. Arnold
Greig Arnold
Chairman

CERTIFICATION

The foregoing Resolution was adopted at a regular meeting; held on 5-30-01 at which a quorum was present, and the Resolution was adopted by a vote of 3 FOR and 0 AGAINST, the Chairman or the Vice Chairman in his absence, being authorized to sign the Resolution.

By: _____
Tribal Secretary

MANAGEMENT PLAN FOK MAKAH TREATY GRAY WHALE · HUNTING FOR THE YEARS 1998-2002 AS AMENDED APRIL 2001

I. Introduction.

The purpose of this plan is to set forth the Makah Tribe's management intent and applicable Tribal regulations to govern the exercise of treaty ceremonial and subsistence whaling rights during the period 1998 through 2002. This management plan is adopted pursuant to Article 4 of the Treaty of Neah Bay, and the International Convention for the Regulation of Whaling ("ICRW") Schedui: Amendment adopted by the International Whaling Commission ("IWC") on October 23, 1997, Under the ICRW Schedule Amendment, the Makah. Tribe is authorized to share a five year aboriginal subsistence quota of 620 gray whales with the indigenous people of Chukotka, Russia.

The IWC was informed that under an Agreement between NOAA and the Council, the Makah gray whale harvest would not exceed 5 1 anded whales per year. The management plan contains a number of additional manage nent measures adopted voluntarily by the Tribe to ensure the orderly development of safe, humane, and culturally appropriate whale hunts. In accordance with the ICRW Schedule Amendment, the management plan strictly prohibits com nercial sale of whale products except for traditional handicrafts (including artwork) made from non-edible parts of the whale. No international trade is permitted.

It is the Tribe's intent to provide for the gradual development of ceremonial and subsistence whale hunts over the five-year period so as to allow for the development of Tribal management capabilities, refinement of hunting methods, and assessment of the Tribe's cultural and subsistence needs. The Tribe intends to utilize the experience and information collected during the five year term of this plan to develop a second multi-year plan, pending IWC review of the current ICRW Schedule. The conservative management approach provided for in this management plan is not intended to limit, waive or modify any of the Tribe's whaling rights under the Treaty of Neah Bay and any such construction of this plan is improper and unauthorized.

11. Definitions.

A. "Calf" means any whale less than 1 year old or having milk in its stomach.

B. "Council" means the Makah Tribal Council.

C. "Commission" means the Makah Whaling Commission.

D. "Landing" means bringing a whale or any parts of a whale onto land in the course of whaling operations.

E. "Member" means an enrolled member of the Makah Indian Tribe.

F. "Natural Resources Department" or "NRD" means the Makah Natural Resource Department.

G. "Strike" means any blow or blows delivered to a whale by a harpoon, lance, rifle, explosive device or other weapon., When used as a verb, "strike" means the act of delivering such a blow or blows to a whale. A harpoon blow is a strike only if the harpoon is embedded in the whale. Any rifle shot which hits a whale is a strike, For purposes of Parts III.C and III.F, multiple strikes on a single whale shall count as a single strike.

H. "Take" means to flag, buoy or make fast to a whale catcher, including a canoe, chase boat or support boat.

I. "Tribe" means and "tribal" refers to the Makah Indian Tribe.

J. "Whale products" means any unprocessed part of a whale and blubber, meat, bones, whale oil, meal and baleen.

K. "Whaling" means the scouting for, hunting, striking, killing, or landing of a whale.

L. "Whaling captain" means the member in charge of a whaling team who holds a whaling permit issued by the Commission and approved by the

Council under this management plan.

M. "'Whaling expedition" means a complete voyage in which a whaling team leaves port or shore for the purpose of whaling and returns to port or shore.

N. "Whaling team" means a group of members under the control of a whaling captain who holds a whaling permit issued by the Commission and approved by the Council under this management plan.

III. Harvest Quotas/Strike Limits.

A. The total number of gray whales taken by members in any one calendar year shall not exceed five (5).

B. The total number of gray whales taken by members between 1998 and 2002 shall not exceed twenty (20).

C. The total number of gray whales struck by members between 1998 and 2002 shall not exceed thirty-three (33), provided that the Commission and the Council will take prudent management measures to reduce the ratio of struck whales to landed whales in any one calendar year to no more than 2:1. The total number of gray whales struck by members between 2001 and 2002 shall not exceed fourteen (14).

D. No member may strike a gray whale calf or a female gray whale accompanied by a calf for calves.

E. No member may strike a whale other than a gray whale.

F. The total number of gray whales struck by members between 2001 and 2002 in the Strait of Juan de Fuca east of the Tatoosh-Bonilla line or between June 1 and November 30 in the Pacific Ocean west of the Tatoosh-Bonilla line shall not exceed five (5).

IV. Permits.

A. No member may engage in whaling except under the control of a whaling captain who is in possession of a valid whaling permit issued by the Commission and approved by the Council. All whaling permits issued by the Commission and approved by the Council shall incorporate all of the requirements of this management plan and any additional requirements the Commission and Council deem appropriate. Upon reaching the strike limit in Part III.F above. whaling permits shall be issued with the intern of targeting migrating, whales.

B. Any whaling permit issued by the Commissior and approved by the Council shall be issued only to a whaling captain certified by the Commission pursuant to Part V below. The permit shall identify the vessels which will participate in the hunt, the mc ubers who will be part of the caplain's whaling team, and the boundaries of the designated area in which hunting will be permitted.

C. The Commission shall not issue and the Council shall not approve a whaling permit without determining that the whaling captain and each whaling team member has been certified by the Commission as qualified to perform his assigned role on the whaling, team.

D. The Council shall provide at least 24 hours advance notice to the National Marine Fisheries Service ("NMFS") and the United States Coast Guard ("USCG") prior to approving a whaling permit. The advance notice requirement shall not apply if a NMFS observer is already present on the Makah Reservation. The whaling captain shall coordinate with the on-site NMFS observer and the Coast Guard prior to departing on a whaling expedition.

E. A whaling permit shall terminate when any one of the following events occurs: (1) the whaling team lands a gray whale; (2) the whaling team. strikes a gray whale but is unable to land it; (3) the whaling team has not struck or landed a whale within 1.0 days of permit approval; or (4) the Commission or the Council determine, for any reason, to terminate the permit.

F. The Commission may issue a whaling permit only after determining that there is an unmet traditional subsistence or cultural need for whale products in the tribal community.

V. Training/Qualifications.

The Commission shall establish certification guidelines and a certification process for whaling captains, harpooners, riflemen, divers, canoe paddlers, and other whaling teammembers. The certification guidelines and the certification process shall ensure that every whaling captain and each member who serves on a whaling team has received adequate training to perform his assigned role on the team. Certification of riflemen shall include a demonstration of proficiency and accuracy under simulated hunting conditions.

VI. Whaling Vesselis, Equipment and Hunting Method:,.

A. A whaling team must include one or more canoes, one or more chase boats, and one or more support boats.

B. All canoes used in whaling must be at least 30 feet in length and manned by a harpooner and at least six paddlers.

C. All. chase boats used in whaling must be at least 18 feet in length and powered by an, engine large enough to tow an adult gray whale: to port, Each chase boat shall be manned by a pilot, diver, rifleman, and harpooner. The diver or an additional crew member shall act as a safety officer. One boat shall be equipped with a navigation system capable of precisely fixing the vessel's position on the water.

D. All whaling harpoons must be equipped with a toggle point, connected to one or more floats, and bear a permanent distinctive mark identifying the whaling captain who is in charge of the whaling team using the harpoon.'

E. The rifle used in gray whale hunts shall be ran adequate very high-powered rifle (.458 caliber or higher), approved by the Commission far use in whaling.

F. The first strike made upon a gray whale shal I be r ıade by the harpooner on a canoe and shall affix one or more floats to the whale. The chase boat will pursue the whale and the rifleman aboard the chase boat will kill the whale as expeditiously as practicable with rifle shots directed at the whale's brain and upper spinal cord.

G. The rifleman on the chase boat shall not discharge his weapon until authorized to fire by the safety officer. The safety offices will. not authorize the discharge of the rife unless: (1) the barrel of the rifle is above and within 30 feet or less from the target area of the whale; and (2) the safety officer determines that the rifleman's field of view is clear of all persons, vessels, buildings:, vehicles, highways and other objects or structures that if hit by a rifle shot could cause injury to human life or property.

H. The whaling captain will suspend the hunt, if the safety officer determines that visibility is less than 500 yards in any direction.

I. Upon the death of a whale, the chase boat crew will secure the whale for towing to shore. The whale will be expeditiously towed to shore by a chase or support boats.

J. By following the general procedures set out herein , whaling teams shall make best efforts to land every whale that is struck and shall ensure that the hunt does not pose a risk to human life and property.

K. The Commission shall conduct research and. development to further refine the hunting methods set out in this management plan. Upon consultation with the Commission and the National Marine Fisheries Service, the Council may periodically amend the provisions of this part to improve the safety, effectiveness and humaneness of gray whale hunts.

'VII, Area **Restrictions.**

A. All whaling shall occur within the adjudicated usual and accustomed grounds of the Makah Tribe.

B. Within the area open to whaling under paragraph A above, whaling may be confined to an area designated by the Commission and the Council in each whaling permit.

C. The initial strike of a whale shall not occur within 200 yards of Tatoosh Island or White Rock between May and September.

D. A whale shall not be struck within the "closed area" designated in Section 10.5.02 of the Makah Law and Order Code (Weapons Control Ordinance No, 43 enacted 9/5/89) or east of the "closed area" to a line extending from the southern end of Waadah Island to Baada Point

E. Whaling may occur only within the Regulated Navigation Area (RNA) established by the United States Coast Guard as amended.

VIII. Use of Meat and Whale Products.

A. Whale products taken pursuant to this managetnent plan shall be used exclusively for local consumption and ceremonial purposes and may not be sold or offered for sale. No member may receive money for participation in whaling.

B. Notwithstanding paragraph A above, traditiona 1 handicrafts (including artwork) made from non-edible whale product,: may be sold or offered for sale within the United States. A member may not engage in international trade of these handicrafts.

C. The Commission shall periodically monitor the utilization of whale products within whaling families and the tribal community to determine when an unmet need for whale meat or other products exists The Commission may conduct research. in order to accurately and

systematically estimate the 'Tribe's traditional subsistence and cultural needs.

IX. Monitoring and Reporting.

A. A Makah Natural Resources Department ("NRD") representative will accompany each whaling team as an observer. Upon request of NMFS, the NRD representative will permit an additional observer from the Northwest Region of the National Marine Fisheries Service to observe the hunt.

B. The NRD observer shall. be responsible for recording the time, date and precise location of each whale struck. For each whale struck, the NRD observer shall record whether the whale is landed. If the whale is not landed, the NRD observer shall describe the circumstances associated with the striking of the whale and estimate whether the animal suffered a wound that might be fatal.

C. For each whale landed, the NRD observer shall record the body length (as measured from the point of the upper jaw to the notch between the tail flukes), the extreme width of the flukes, and the sex of the whale. The NRD observer shall also record the length and sex of any fetus in the landed whale.

D. The NRD observer shall record the time interval between the initial strike and the death of the whale.

E. The NRD shall be responsible for compiling and transmitting the weekly and annual reports required under the Agreement between the Council and NOAA. During periods in which whaling permits have been issued, the NRD will provide the National Marine Fisheries Service with a weekly oral report regarding the number of whales struck and landed. To the extent specified in any bilateral agreement, the NRD will also provide periodic oral or written reports regarding the number of whales struck and landed to representatives of the Russian Federation,

F. By January 30 of each year, the NRD and the National Marine Fisheries Service will prepare a joint written report compiling all of the data accorded by the NRD under paragraphs B through D above, as well as any additional data recorded by National Marine Fisheries Service personnel.:

G. The NRD will assist National Marine Fisheries Service personnel in the collection of specimen material from landed whales, including but not limited to, ovaries, ear plugs, baleen plates, stomach contents, and tissue samples. The NRD may collect additional samples for its own use as part of the Tribe's research and management activities.

X. Enforcement.

A. The Natural Resources Enforcement Division shall be the Tribal law enforcement agency responsible for enforcing the requirements of whaling permits and this management plan.

B. Any member found whaling in violation of this management plan or the terms of a whaling permit issued by the Commission and approved by the Council. shall be subject to prosecution in Tribal Court for a Class AA criminal offense in accordance with the procedures set forth in Title 2 of the Makah Law and Order Code.

C. A whaling captain shall be deemed liable for any violations of a whaling permit or this management plan committed by a member of a whaling team under his control.

XI. Penalties.

A. Any member convicted by the Tribal Court of the offense of whaling in violation of this management plan or the terms of any whaling permit issued by the Council shall be subject to the penalties for a Class AA criminal offense under Section 5.8.01 of the Makah Law and Order

Code?

B. Members convicted of said offense may also be barred from exercising treaty fishing, hunting and/or whaling rights for up to three (3) years.

C. In determining the severity of punishment, the Court shall consult with the Commission and take into account the seriousness of the injury to the Tribe and Tribal resources.

XII. Amendments.

The Council may amend this management plan from time to time in consultation with the Commission and NOAA as new information becomes available, provided that the requirements of the management plan shall comply with the ICRW Schedule Amendment, any cooperative agreement between NOAA and the Council, and all applicable federal law.

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[1] Section 5.8.01 of the Makah Law and Order Code currently provides that Class AA offenses are punishable by a fine not to exceed $5000 and imprisonment not to exceed 12 months.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
West Coast Region
1201 NE Lloyd Blvd., Ste. 1100
Portland, Oregon 97232

MEMORANDUM FOR: THE FILE

FROM: Steve Stone
Protected Resources Division

DATE: February 19, 2015

SUBJECT: Staff Responses to Comments on the 2008 Draft Environmental Impact Statement on the Makah Tribe's Request to Hunt Gray Whales

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We developed this Memorandum for the File to capture staff consideration of the comments we received on the 2008 draft environmental impact statement (DEIS) regarding the Makah Tribe's request to hunt gray whales. Our consideration of those comments informed the development of the new 2015 DEIS and is an integral part of the record.

Background

In May 2008, pursuant to the National Environmental Policy Act (NEPA), the National Marine Fisheries Service (NMFS) released a DEIS concerning the Makah Indian Tribe's February 2005 request to resume limited hunting of eastern North Pacific (ENP) gray whales (*Eschrichtius robustus*) in the coastal portion of the Tribe's usual and accustomed fishing grounds (U&A), off the coast of Washington State, for ceremonial and subsistence purposes. Beginning May 9, 2008, NMFS made the DEIS available for public review (73 FR 26375) for 60 days. In response to multiple stakeholder requests, we extended the initial public comment period for an additional 38 days (73 FR 33814, June 13, 2008), making for a total comment period of 98 days. We also held three public meetings during that period.

We received more than 800 pages of comments on the 2008 DEIS, by mail, fax, and email. Individual commenters numbered more than 400 and included state and federal entities, tribal governments, and both nonprofit organizations and interested individuals from the United States and around the world. In the fall of 2008, after reviewing all the comments for substantive issues and new information, we began developing responses to them and considering whether we might need to include new alternatives to address some of the comments.

Soon after releasing the 2008 draft EIS, several substantive scientific issues arose that required an extended period of consideration for our NEPA analysis, including: (1) potential bias in population estimates for ENP gray whales (Laake et al. 2009); (2) genetic evidence of population substructure indicating that PCFG whales may warrant consideration as a separate management unit (Frasier et al. 2011; Lang et al. 2011); and (3) whale tracking and sampling data indicating that at least some individuals from summer feeding grounds utilized by the endangered western stock migrate across the Pacific and

into areas used by ENP gray whales (including the Makah U&A). This information is also under review at the IWC. Given these developments and the fact that it had been 7 years since the Tribe had submitted its initial request, on May 21, 2012, we announced we were terminating the 2008 DEIS and intended to prepare a new DEIS (77 Fed. Reg. 29967).

In developing the current DEIS, we carefully reviewed the comments on the 2008 DEIS and developed draft responses to those that provided new information or raised the most substantive issues. To capture that consideration, and aid reviewers of the current DEIS, we prepared this memorandum, which: lists the comments received on the 2008 DEIS, either summarizes the comment or repeats the comment verbatim, and includes the draft responses to a number of comments that we considered while developing the current DEIS. The memorandum does not contain responses to each individual comment, given the large number of comments simply raising support or lack of support for a hunt, the significant overlap among the comments provided, and the fact that the 2008 DEIS was terminated.

The more than 400 comments we received covered many different topics, ranging from specific biological, ecological, or legal issues to more general cultural, personal, or spiritual values. For example, a substantial number of the public comments were concerned with potential hunting impacts on Pacific Coast Feeding Group (PCFG) whales, while others raised questions about issues of precedence on the world stage or the cultural significance of the hunt to the Makah Tribe. Individual commenters typically addressed multiple topics in a single letter, and topics often were repeated from one letter to the next (although in different combinations). In some cases topics were outside the scope of the DEIS.

We are interested in sharing information about the content of the 2008 public comments and clarifying how we took those comments into consideration when developing the current EIS. However, given the extensive number of comments, the overlap among them, and the fact that the 2008 DEIS has been terminated, we have elected not to present each individual comment. Instead, we have selected a representative sampling of 10 comments that raise the most substantive issues and that show the wide range of issues brought up by commenters. These are presented in Attachment 1of this memorandum, while Attachment 2 identifies the remainder of the comments received (without responses). Attachment 3 includes information and tables that we referenced in the draft responses.

Attachment 1: Responses to Selected Comments
Australians for Animals International – Comments submitted August 14, 2008 by S. Arnold.

COMMENT CODE	COMMENT	DRAFT STAFF RESPONSE
AFA1	Australians for Animals Int. (AFA Int) makes the following formal objection to the 2008 Makah DEIS. In summary, AFA Int. believes there is no plausible evidence to suggest that any proper comprehensive review of the gray whale has been undertaken since the delisting in 1994. The five-year monitoring program as required under the ESA was never funded and many, if not most of the recommendations following delisting did not eventuate. '*The draft plan, dated October 1993 was not finalized by the NMFS Office of Protected Resources; however it has provided the framework and guidelines for research, monitoring and management over the past five years*.'[1]	On January 3, 1993, we issued a determination that the ENP gray whale stock had recovered and no longer required the protections of the ESA (58 FR 3121). On June 3, 1994 we announced the availability of a monitoring plan (59 FR, Issue 106). The monitoring plan was not finalized. Attachment 3 at the end of this memo presents a separate table showing the actions recommended by the team and the research and monitoring that has been completed or is ongoing relevant to each recommendation. On October 6, 1999 we published the completion of a status review in which we found that the ENP gray whale stock should not be re-listed (64 FR 54275). The status review team recommended that the stock be monitored for an additional 5 years and identified an extensive list of potential research projects to "further improve our understanding of the status of this whale stock" (Rugh et al. 1999). Attachment 3 to this memo presents a table showing the actions recommended by the team and the research and monitoring that has been completed or is ongoing relevant to each recommendation. The status review team concluded there was sufficient information available to reach a determination about the status of the stock.
AFA2	A recommendation for a second five-year research plan was never implemented. NMFS SWFSC has advised AFA Int. that no budget funding has been received for the gray whale since 2000.	It is difficult to respond to the representation of what a NMFS employee said in a phone conversation. Contrary to the representation, we have invested considerable resources in monitoring the ENP stock of gray whales and extensive monitoring continues at present. In addition to the 1994 draft monitoring plan, we included a monitoring plan in our 1999 status review. The monitoring and research conducted by NMFS and others is too extensive to list here. Attached to this comment letter are two tables detailing the recommendations from the 1994 and 1999 monitoring plans and describing the monitoring and research done since 1994 and 1999, respectively. More monitoring and research are being conducted than is captured in the 1994 and 1999 plans. The 2008 DEIS and new DEIS include references to most of the publications that have resulted from that research and monitoring.

[1] Status Review 1999

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AFA3	Without doubt the most critical factor facing gray whale survival is climate change. As the Arctic ice melts at a rate faster than any modeling or predictions, the fate of all marine mammals dependent on a functioning Artic ecosystem hangs in the balance. The rate of change is happening so rapidly that no agency can predict the outcome. At this time, the only possible management criterion must be adoption of the precautionary principle and immediate relisting of the gray whale under the provisions of the ESA.	In response to this and other comments, the new DEIS describes the potential impacts of climate change on ENP gray whales (Subsection 3.4.3.6.11, Climate Change and Ocean Acidification).
AFA4	Scientific research demonstrates a damning case of massive ecosystem changes in the Arctic and subarctic. Oil and gas leases in the Gray whale feeding grounds will impact all marine mammals which rely on these marine ecosystems.	In response to this and other comments, the new DEIS contains an updated discussion of the potential impacts of oil and gas leases on ENP gray whales (Subsections 3.4.3.6.4, Oil Spills and Discharges, and 3.4.3.6.5, Offshore Activities and Underwater Noise).
AFA5	As well, resident whale habitats such as the niches in Washington, Oregon, California and Canada need to be protected to ensure the survival of the species.	Comment noted.
AFA6	The PBR value from 2000-2005 was based on a minimum population estimate of 24,717, a figure that was completely inaccurate. The severe population crash of l999/2000 of one third and more was never reflected in the PBR.	Pursuant to statute, regulations, and agency guidance, PBR is calculated on the basis of the best available information, which includes the most recent abundance estimates and may include a weighted mean of recent abundance estimates (Wade and Angliss 1997; GAMMS 2005). The decreased abundance following the 1999/2000 die-off was reflected in the abundance estimate in Rugh (2005), accompanied by a lower PBR in the 2005 stock assessment report (Angliss and Outlaw 2005). The most recent stock assessment report (Carretta et al. 2014) contains information on minimum population estimates and PBR based on abundance estimates through 2006/2007 while the most latest *draft* stock assessment report reflects updated abundance estimates through 2010/2011 (Carretta et al. 2015). These most recent abundance estimates indicate that the ENP remains stable (Durban et al. 2013). In response to this comment, we developed a table that reflects PBR and human-caused mortality as reported in the stock assessment reports from 1998 through 2013, to ensure we considered the history of gray whale PBRs (refer to Table 3-6 in Subsection 3.4.3.3.4, ENP Status, Carrying Capacity, and Related Estimates).
AFA7	Given that the Recovery Factor for all large whales is set at 0.1, AFA Int contends there is no justification for any waiver as the PBR from	The new DEIS describes information available since the 2008 DEIS was published (Subsection 3.4, Gray Whales). The analysis by Laake et al. (2009) shows that the ENP

COMMENT CODE	COMMENT	DRAFT STAFF RESPONSE
	2000-2005 was grossly over-inflated and the population has had no time to recover from the major population collapse in 1999-2000. The ramifications of a PBR, which was 15 times higher than the more conservative estimate for large gray whales is unknown. But given the evidence of calf numbers; emaciated whales; toxic contamination; lowest gray whale numbers ever recorded in San Ignacio; totally inadequate surveys and studies, no funding; the population cannot be described as " *healthy* " and there is no justification for a PBR of 1.0 or 0.5. On those grounds alone, the waiver must be rejected and steps taken by NOAA to urgently relist the Gray Whale.	gray whale stock has recovered from the 1999/2000 die-off. The analysis by Punt and Wade (2012) shows that the ENP gray whale stock is within its OSP range. As reported in the 2014 stock assessment report (Carretta et al. 2014), a recovery factor of 1 is appropriate in calculating PBR for ENP gray whales. Updated abundance estimates by Durban et al. (2013) show that the abundance of ENP gray whales remains stable (Subsection 3.4.3.3.3, ENP Abundance and Trends; Table 3-5).
AFA8	The Makah DEIS has highlighted an appalling situation. It is clear that the Gray whale has not had the benefit of proper funding, current science and research and at the same time, the bias exhibited by NMFS and its Gray whale scientists is a violation of the agency's mandate. AFA Int. believes the status of the Gray whale is now critical and that a comprehensive scientific review of all factors impacting on the whales' survival needs to be undertaken. The Eastern North Pacific Gray Whale needs to be relisted under the ESA as a matter of urgency.	These paragraphs summarize points made and responded to above.
AFA9	**SPIRITUAL OBJECTION.** As an organization representing conscious and aware human beings, AFA Int. objects to the slaughter of all Whales. The notion that the Makah tribe has some kind of divine right to kill Gray Whales in the 21st Century is a giant step back to the Dark Ages. A dead whale is a dead whale. A sacrificial object at an altar that no longer has relevance in a world where protecting biodiversity and the web of life must take priority if we are to honor future generations. Gray whales are part of the natural heritage of humanity. **Of all humanity**. As the most ancient Baleen whale alive today, given the	Comment noted.

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	history of extinction of the Atlantic populations and the looming extinction of the Western Pacific Gray Whale, the only option for the Makah waiver proposal is a firm denial.	
AFA10	**GRAY WHALE – MIGRATION ROUTE** AFA commissioned a GIS of the known threats to the Gray Whale along its migration route. The GIS was undertaken by the GIS Laboratory of Southern Cross University, Lismore, NSW, Australia.  Table 1. Threats to Gray Whales © Australians for Animals Int.	This comment and those that follow present extensive information, which we have incorporated in the new DEIS (Subsection 3.4, Gray Whales) as appropriate. We have also incorporated new information related to these comments and available since the comment was.
AFA11	**HISTORIC CONCERNS.** A Review of the Status of Gray Whales (Eschrichtius robustus), Final Report to the US Marine Mammal Commission edited by Steven L Swartz, June l986, sums up the plight of this majestic whale. *" *As a coastal species gray whales are continuously exposed to human activities throughout their range from the northern feeding grounds, to the coastal migration routes and within the protected waters of the breeding lagoons. Because gray whales cannot avoid exposure to marine pollution, vessel traffic, industrial noise, and*	The 2008 DEIS described range-wide threats to ENP gray whales (Subsection 3.4.3.6, Known and Potential Anthropogenic Impacts) and the new DEIS expands on that information in the same Subsection.

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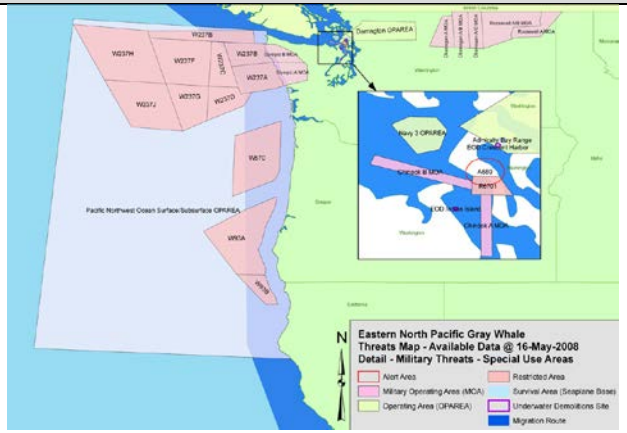
	activities associated with the development of outer continental shelf resources, it has been acknowledged that these activities pose very real threats." *" It is very clear that the responsible management of the coastal habitats of the gray whale are paramount to the survival of the species. The continued recovery of the California stock of the gray whales can only be assured by coordinated efforts between the governments of Canada, Mexico, the Soviet Union and the United States.* *' …human activities throughout their range are increasing, and habitat degradation and disturbance probably pose the greatest potential threat to the survival and continued recovery of the species today. '* Swartz MMC l986)  Table 2. Threats to Gray Whale Southern California © Australians for Animals Int.	

COMMENT CODE	COMMENT	DRAFT STAFF RESPONSE
	 **Table 3. Military Threats to Gray Whale. © Australians for Animals Int.**	
AFA12	**BACKGROUND** There is a great deal of uncertainty in terms of knowledge of the Gray Whale. Lack of information on the true survivorship of any classes; the approximate age of reproduction or mortality inhibit proper management of the species. *The basic ecology of the gray whale is unknown*. (Chaloupka, 2003 Gray Whale lawsuit)[2]. The ENP Gray Whale is the last viable population of four to remain. The Makah DEIS fails to recognize the importance of ensuring the survival of this population.	The 2008 DEIS summarized the status of ENP gray whales (Subsection 3.4) and the potential effects of hunt alternatives individually (Subsection 4.4), and combined with other range-wide threats (Subsection 5.4, Gray Whales). The new DEIS contains updated information on the status of ENP gray whales (including PCFG whales) and WNP gray whales (Subsection 3.4); the potential effects of a new set of hunt alternatives on these whales (Subsection 4.4); and an analysis of the cumulative effect of a Makah tribal hunt combined with existing range-wide threats (Subsection 5.4, Gray Whales).
AFA13	NMFS scientists acknowledge that the Gray whale is an indicator species for the Arctic marine ecosystem and that massive ecological changes in the whales' feeding grounds is putting the future survival of the species at risk.	Moore (2008) describes six lines of evidence indicating that gray whales serve as sentinels of ecosystem transitions. Her conclusion is that "one important way to [broaden and integrate our research approach] is to use marine mammals as sentinels

2. Hawaii Green Party v. Evans Sec. Dept of Commerce

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	Dr Sue Moore has described gray whales, as "*sentinels of the sea because the creatures are sampling and responding to the marine environment from Mexico to Alaska, and like walruses and polar bears, are early indicators of ecological crisis*."	to ecosystems in transition." Moore (2008) draws no conclusions about the future survival of any species.
AFA14	Yet change, with the attendant looming ecological crisis, and virtually every major threat including growing industrialization of the feeding grounds have been excluded from the DEIS. A supplementary DEIS is urgently needed to cover the serious omissions in the current DEIS. The cumulative impacts of the plethora of threats facing the Gray Whale have been ignored. With evidence of the Arctic melting at a much faster rate than predicted presented to the public on a daily basis, a waiver to kill Gray whales makes no sense.	The 2008 DEIS reviewed numerous threats to ENP gray whales (Subsection 3.4.3.6, Known and Potential Anthropogenic Impacts), as well as the cumulative impact of the hunt alternatives when considered in the context of other past, present, and reasonably foreseeable future events (Subsection 5.4, ENP Gray Whales). In response to this and other comments, the new DEIS discusses the cumulative effect of hunt alternatives and range-wide threats, including climate change.
AFA15	The DEIS is a biased document. A consulting firm which already works for the Makah Tribe was hired by NMFS to do the DEIS, an action which in any other arena would be seen as a conflict of interest. Under its mandate, NMFS has an obligation to present objective and current scientific information. NEPA also demands objective information. Instead, critical facts relevant to Gray Whale survival have been ignored, censored, distorted or presented in a biased manner.	As is allowed by Federal law (40 CFR 1506.5c), we employed a contractor to assist in preparation of the 2008 DEIS, under the supervision of NMFS staff, and using a competitive and documented process to select Parametrix. At the beginning of the contract, the contractor disclosed that it also had a contract with the Makah Tribe to assist in the development of the Cape Flattery Tribal Scenic Byway Scenic Corridor management plan. After the unauthorized hunt in September 2007, members of the public raised questions about additional work Parametrix was performing for the Tribe. When questioned by NMFS about the additional work, Parametrix provided information on the details of the subsequent contract, and affirmed that it had obtained the work for the Tribe in a competitive process. Also as required by law, Parametrix and its subcontractors signed disclosure statements prepared by NMFS as affidavits that there is no conflict of interest by being employed by both the Tribe and NMFS (40 CFR 1506.5c). We accepted the disclosure statements in good faith, and conducted due diligence reviews of Parametrix's role as a contractor for the Tribe. We concluded that there was no potential for conflict to occur, and further, no biased information could be inserted into the DEIS under our sole supervision. Producing an EIS is the responsibility of the Federal action agency (40 CFR 1506.5(a)(c)). We are responsible for the content and process. We do not consider the relationship between Parametrix and the Tribe to have compromised the integrity of Parametrix's

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		work product, and in any event are confident that in exercising our oversight we have ensured the document is a product of our analysis. In preparing the new DEIS, we relied on a "blanket purchase agreement" between NMFS and Parametrix to fund discrete products, including updates to the background information about several of the resources, contained in the Affected Environment section.
AFA16	Although the DEIS has taken apparently two or three years to compile, the public, conservation groups, scientists and citizens have been granted an extremely short time in which to make substantive comments.	NOAA's regulations regarding NEPA require that the agency provide a 45-day comment period on all EISs (NOAA Administrative Order 216-6). In this case, NMFS provided 98 days to review the draft – an initial 60-day period and a 38-day extension. In response to request for comments on the draft, NMFS received more than 800 pages of comments from over 400 commenters, suggesting that the 98-day comment period allowed commenters sufficient time to read and to respond to the draft. The 98-day comment period is consistent with, or longer than, other comment periods for complex draft EISs prepared by NMFS. For example, for its 1,000 plus page draft EIS on Washington States' forest practices, NMFS provided a 90-day comment period. The nearly 1,200 page draft EIS on the Puget Sound Chinook harvest management plan had a 46-day comment period. Given the amount of review time offered to the public, and the substantial number of comments received during this period, we conclude there was adequate time to review and comment on this 2008 DEIS.
AFA17	Three hearings set down in the US have been organized in a highly undemocratic manner. Written questions only, inadequate responses and far too many rules for what are supposed to be public hearings. International organizations such as AFA Int. who cannot attend hearings in the US are deprived of the opportunity to put important questions to NMFS.	The commenter objects to the format for the public hearings, in which a facilitator took notes on flip charts. In addition to keeping notes, NMFS staff strongly encouraged all attendees to submit written comments, and those comments were carefully considered in developing the 2008 DEIS. We again solicited comments in 2012 and considered those comments in preparing the current DEIS. The public can and has communicated with us and commented via e-mail, phone, and web-based systems such as regulations.gov.
AFA18	Further, questions sent by email to NMFS North West office have not be properly addressed or answered. The failure to respond to these	We believe we answered all e-mailed questions prior to the close of the comment period.

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	questions seriously inhibits the extent of comment as we cannot obtain the relevant information.	
AFA19	For example, AFA Int. requested sources of legal opinions expressed in the DEIS. The list of references do not demonstrate names of law firms or lawyers and as the claims made in Chapter 4 are refuted by non-government lawyers, the source of the opinions expressed in the DEIS is relevant.	The 2008 DEIS and new DEIS were developed by NOAA staff. The purpose of the analysis in Section 4 is not to assert legal opinions or conclusions but to predict likely effects on the human environment of the Makah Tribe's proposed action and the alternatives.
AFA20	Given the controversy and extent of objections to any Makah hunt; ramifications to US domestic whale conservation policy and the flow on effects of US actions in allowing a waiver, NMFS has an obligation to carefully weigh up all sides of the issue. International ramifications as a result of the US setting up two more classes of whaling (cultural, ceremonial) at the IWC and beyond, are not dealt with in any substantive way. Sweeping generalizations which are not supported by any legal advice or research cannot be acceptable in an objective properly researched DEIS.	This comment presents no specific information that is missing from the 2008 DEIS analysis of potential national and international impacts on whales and other marine mammals of authorizing a Makah whale hunt (Subsection 4.17, National and International Regulatory Environment).
AFA21	In the opinion of AFA Int., the extent of omissions and misleading information contained in the DEIS are deserving of a Congressional enquiry	Comment noted.
AFA22	Climate change is wreaking havoc in the Arctic. Documented evidence of increased seawater temperatures, catastrophic disappearance of ice and the extent of oil and gas leases in the Gray Whale feeding grounds have been omitted from the DEIS.	In response to this and other comments, the new DEIS discusses climate change (Subsection 3.4.3.6.11, Climate Change and Ocean Acidification).
AFA23	Threats to Gray whale survival have significantly increased in the last 8 years. At the same time, Gray whale numbers are visibly decreasing, calf counts are down, significant numbers of emaciated whales are being sighted and the primary prey (benthic amphipods) is disappearing because of climate change. The indicators of major problems for the species survival are plain to see and supported by impeccable research by academics, government agencies and specialist groups such as the UNEP.	The points summarized here are included in more detail elsewhere in this comment letter, and we respond in detail to those.

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AFA24	**KEY FACTORS AFFECTING LONG TERM VIABILITY OF THE EASTERN NORTH PACIFIC GRAY WHALE STOCK.** 1. Health and availability of food (prey switching, benthic amphipod production.) 2. whaling. 3. habitat conservation. 4. ocean health (contaminants, drift nets etc.) 5. climate change 6. human activities around whales and habitat. 7. mortality factors (disease, pollutants, viruses) 8. carrying capacity, trophic competition. 9. human induced mortality (incidental capture, habitat modification – competing risks, migratory route.) 10. Long term changes in food resource (food quality). 11. natural toxins (dinoflagellate blooms) 12. food and long term oceanographic changes and influence on food- secondary site feeding behavior. 13. density-dependent behavior (feeding, dispersal) 14. anthropogenic stressors and intrinsic adaptive capacity. 15. loss of genetic diversity. 16. changes in abundance and composition of apex predators (e.g. orcas) 17. direct disturbance of breeding activities. 18. availability and access to breeding grounds. 19. climate change affects on demersal fish stock. 20. adaptability of dispersion and behavior. 21. adaptability of amphipod stock to ocean regime shifts 22. ability to monitor population and the appropriateness of legislation – need for more relevant status criteria. 23. assessments of benthic communities along Russian coast. 24. stock structure assessment (spatially distributed substocks) 25. cetacean inter-specific competition (e.g. humpbacks) 26. coastal distribution in comparison with other cetaceans. 27. impacts on toxicant concentrations in sediments in feeding areas- resuspension of toxicant by feeding activity. 28. intermingling of stocks in under-utilized feeding grounds.	The 2008 DEIS presented information regarding many of these factors. For example, Subsection 3.4.3.6, Known and Potential Anthropogenic Impacts, describes pollutants, harmful algal blooms, oil spills and discharges, and underwater noise, among others. Subsection 3.3, Marine Habitat and Species, describes the marine environment, including potential prey for grey whales, and Subsection 3.4.3.4, Current Status of the Gray Whale Population, describes numerous factors related to gray whale status, such as carrying capacity. In response to this and other comments, the new DEIS discusses the cumulative effect of hunt alternatives and range-wide threats, including climate change (Subsection 5.4, ENP Gray Whales).

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	29. synergistic impacts of all factors identified 30. willing and ability to prevent and reduce human factors that induce mortality 31. benthic community structure shifts. AFA Int. submits that with one of two exceptions, the entire list of key factors has been ignored in the Makah DEIS.	
AFA25	Arguments which support the suggestion that taking five (seven) whales per year will have a negligible impact on the population cannot be substantiated. Without a comprehensive scientific review of all the factors impacting on Gray Whale survival and the guestimates which pass for population estimates, any quota for the Makah tribe is an act of gross irresponsibility. The evidence below of rubbery figures, outdated population estimates and the setting of highly inflated PBR values at a time when one third or more of the population had collapsed is of great concern. In pursuing a waiver at this time, the Makah tribe demonstrates its unwillingness to consider the serious nature of the threats facing the gray whales.	This comment presents general statements, which are expanded on, and responded to, below.
AFA26	The illegal slaughter of a gray whale by five members of the Makah Tribe last year and the subsequent criminal charges do not augur well for any responsible management.	The new DEIS describes the Federal convictions of Makah tribal members involved in the illegal hunt (Subsection 1.4.2, Summary of Recent Makah Whaling — 1998 through 2014).
AFA27	The suggestion that somehow killing whales will assist in resolving problems of teenage pregnancy; drug and alcohol use etc etc is not supported by any research. AFA Int. knows of no studies that have demonstrated that killing whales restores social cohesion in any community.	The 2008 DEIS (Subsection 3.8.3.1, Makah Tribal Members) described the tribal view: "The Tribe believes it must revive these traditions to combat the social disruption resulting from the rapid changes of the last century and a half." In the analysis, the 2008 DEIS concluded only that authorization of a hunt could increase social bonding, based on the expressed views of the tribal government and some tribal members (Subsection 4.8.2.1, Makah Tribal Members). That Subsection also noted that authorizing a hunt could increase tensions between hunt supporters and opponents within the Tribe.

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AFA28	There are a number of public records which indicate that the Makah Tribe has sought to begin commercial whaling and/or scientific whaling. As well, it is entirely unclear from the DEIS interpretation of Treaty language whether in the future more non-listed cetaceans will be targeted. The Makah Tribe also killed Humpbacks and ate the meat, which is, apparently, infinitely preferably to the bottom feeding Gray whale.	We are currently considering the Makah Tribe's request for a waiver to engage in aboriginal subsistence whaling for gray whales. The WCA and MMPA prohibit commercial whaling by U.S. citizens.
AFA29	Any waiver for the Gray whale will create precedents for future waivers if this current attempt is granted on the basis of out-dated science and research that has not been adequately funded at least since 2000. The 9th Circuit is certainly of the opinion that other tribes could seek the same rights. (See Legal section below). Questions remain as to whether adequate funding has been provided since delisting. A delisting which was the result of the Makah Tribe formal request.	The 2008 DEIS analyzed the possibility that authorizing a Makah hunt could have precedential effects (Subsection 4.17, National and International Regulatory Environment). Specific comments and responses below, and Attachment 3 to this memo, discuss gray whale research.
AFA30	Recommendations by the Marine Mammal Commission and the IWC for further important research on Gray Whale population have been resisted or ignored by NMFS. ".. *The Commission wrote to the Service on 7 August, 2001 and again on 15 January, 2002 recommending that the Service develop a second five year research plan, complete a stranding response plan to better coordinate gray whale stranding investigations, assess effects of the 1999-2000 die-off on the population's status, and review planned research to ensure that information is adequate to assess the population's status and conservation needs*." (MMC report 2002).	Attachment 3 to this memo describes most of the research completed and ongoing since 1993.
AFA31	NMFS conducted a review of the status of the EN Pacific stock at a workshop held by the National Marine Mammal Laboratory (NMML) in Seattle, Washington in 1999. It was determined that monitoring should continue for an additional 5-year period (1999-2004) and that research should continue on human impacts to critical habitats. (64 FR 54275 10/6/99). The research recommended was never adequately funded.	Attachment 3 to this memo discusses the research completed and ongoing since 1999.

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AFA32	Let's be clear about this fact. During the time a second 5 year monitoring program had been recommended, a third to almost one half of the population perished and the PBR was set at a highly inflated value. So not only did NMFS ignore the recommendations of the Status Review Workshop but it upped the threats and lack of protection by setting a highly inflated PBR value.	Attachment 3 to this memo discusses the research completed and ongoing since 1999. PBR values are based on the most recent estimates of minimum abundance (though in some cases it may be appropriate to use weighted averages over more than one year or season [GAMMS 2005]). In the stock assessment reports for 2001, 2002, and 2003, we continued to use the minimum abundance estimate based on the 1997/1998 southbound migration for calculating PBR. In the 2005 stock assessment report, we revised the minimum abundance estimate based on southbound counts from 1997/1998, 2000/2001, and 2001/2002. The minimum abundance estimated in the 2005 stock assessment report reflected the decline in population following the 1999/2000 strandings. As a result the PBR for the stock declined from 575 to 417. The purpose of setting a PBR is to alert the agency when human-caused mortality may cause a marine mammal stock to fall below OSP. In the case of ENP gray whales, the human-caused mortality reported for 2001, 2002, and 2003, was 83, 107, and 107, respectively, well below the PBR calculated for those years or for the lower PBR calculated in the 2005 stock assessment report, following the stranding event.
AFA33	S.117 of the Marine Mammal Protection Act requires comprehensive information in any Stock Assessment Review; the requirements of S. 117 as they relate to Gray Whale SAR have not been met for many years. An email from Jeremy Rusin, Deputy Director Protected Resources SWFSC, NOAA to Sue Arnold, Australians for Animals Int. dated 30 July 2008 reveals the serious lack of funding. ' *Regarding the funding question, it is our understanding that the last dedicated NOAA funding for gray whale monitoring was in 2000 ($17.2K). In 1999, $11K in funding was provided for gray whale monitoring. This information came from our national budget contacts.'* These are completely inadequate amounts which would prohibit any realistic monitoring or research. $11K would not cover a portion of a salary, nor would $17.2 K. AFA Int. believes NMFS should provide details of all funding allocated to the Gray whale by NMFS since delisting. But what we have is a situation where there is no financial support for the critically important monitoring and no recognition by the Agency of the even more critical factors facing Gray whale survival. Instead of recognisng the serious nature of the population	It is unclear what the comment or the NMFS employee means by "dedicated" funding. NMFS and others have funded substantial research and monitoring programs for gray whales. These programs are described in Attachment 3 to this memo.

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	collapse, NMFS merely ignored the bad figures and instead, relied on out of date population estimates. Stock Assessments 16 U.S.C. 1386 Sec.117 states (a) … *Each draft stock assessment, based on the best scientific information available, shall ….* Given that there has been no budget funding since 2000, and taking into account that the SARs for 2005 and 2007 relied on outdated information based on previous questionable data, NMFS cannot claim to have based any SARs since 2000 on the " *best scientific information available*".	
AFA34	Evidence from genetic research by Prof Stephen Palumbi et al and Clapham et demonstrate the original population was Eastern North Pacific whales was at least 60,000. This is new evidence that has been virtually ignored by NMFS although at least one of the research papers presented by a NMFS scientist at the Status Review acknowledges one set of modeling shows the original population may have been as high as 70,000.	The 2008 DEIS cited a study by Alter et al. (2007), which suggests the gray whale population may have been as large as 70,000 animals historically. It is unclear what the comment means by the references to papers by Clapham or Palumbi (although the latter is a co-author on the Alter et al. 2007 paper).
AFA35	Information about the status of sea ice; increased seawater temperatures; contamination; emaciation and other issues have not been acknowledged in SARs. Sec, 117 (1) states: _ " *describe the geographic range of the affected stock, including any seasonal or temporal variation in such range;* Massive changes in the Bering and Chukchi Seas and the entire Arctic region have not been acknowledged or described in any Gray Whale SAR. Climate change is having a drastic impact on the Arctic environment as demonstrated by satellite images and a wealth of research. On Gray whales, other marine mammals and invertebrates.	This comment appears to be about the adequacy of our stock assessment reports, not the information and analysis in the 2008 DEIS. The MMPA establishes the requirement that NMFS produce stock assessment reports, and dictates the procedures for reviewing them. They are based on the best available scientific information and undergo review by the statutorily created scientific review group as well as public comment.
AFA36	The extent of the population crash can be seen from the mapping carried out by Dr Sue Moore, NMFS scientist at:- http://www.beringclimate.noaa.gov/essays_moore_maps.html	The 2008 DEIS described shifts in gray whale foraging, likely in response to changes in sea ice (Subsection 3.4.3.3.1, Summer Range Distribution and Habitat Use). In response to this and other comments, the new DEIS discusses the cumulative effect of hunt alternatives and range-wide threats, including climate change (Subsection 5.4, ENP Gray Whales).

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	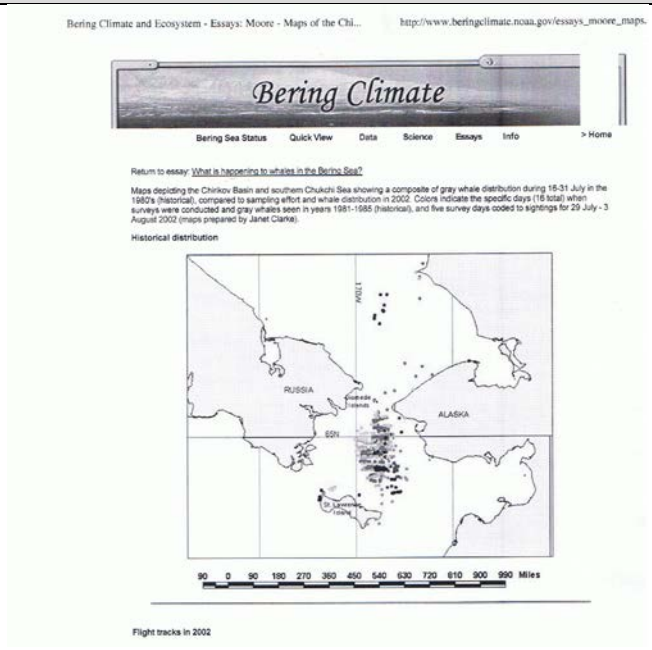 Table 4. Bering Sea Maps. NOAA Composite of gray whale distribution in l980's	

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	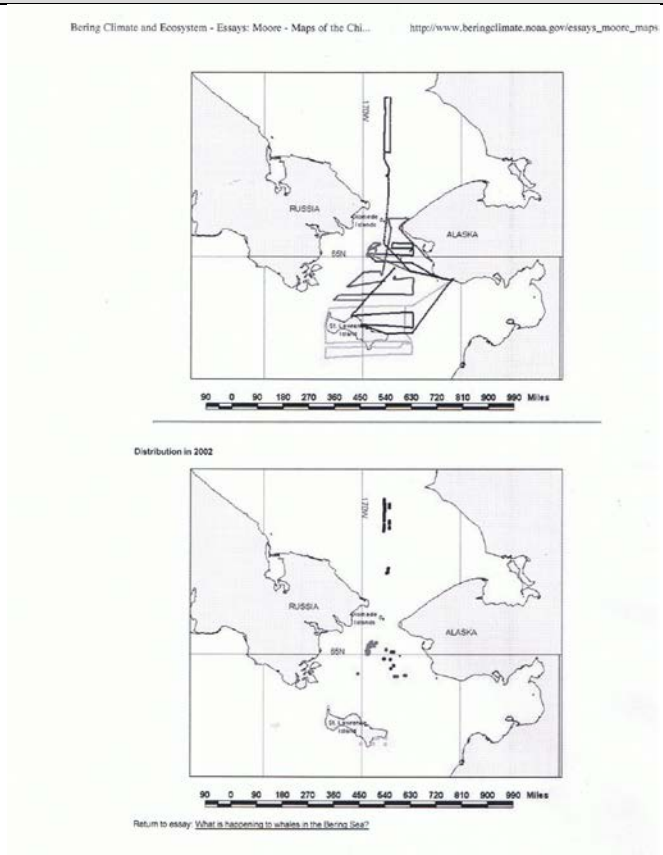 Table 5. Bering Sea Maps. NOAA. Gray whale distribution 2002	
AFA37	Research which demonstrates changes in the gray whale migration route is given little focus, likewise delays in migration and anecdotal evidence that a greater number of whales are giving birth outside the Mexican Lagoons, thus putting calves at increasing risk of orca predation. Nor is there any adequate information relating to the high percentage of emaciated whales and increasing numbers of " stinky whales"; increased seawater temperatures; differences in migration	The 2008 DEIS, Section 3.4, Eastern North Pacific Gray Whale, discussed all information available on ENP gray whale life history. The comment cites no additional sources of data the agency failed to consider. The new DEIS contains new information available since publication of the 2008 DEIS.

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	timing; changes in behavior in Mexican lagoons; seriously low mother and calf counts in San Ignacio.	
AFA38	In a conference call between the Ocean Protection Council, California Assemblyman Pedro Nava, NMFS personnel from SWFC Wayne Perryman, scientist with NMFS SWFC, and AFA representative, Sue Arnold on behalf of the California Gray Whale Coalition, Perryman said: - **Wayne – it is hard to get parameters right – individual pieces of the puzzle – we don't have all the pieces and the picture keeps changing. The rate of change is changing. What is happening to the ice is happening fast and it's scary.** **We need to monitor population condition – it is the highest priority – but no funding.** **Don't know how change in food source is effecting population.** **Counts bounce around a lot – assumptions in their technique don't hold true.** **Absolute numbers could be off.** **1997-98 27K whales not a good estimate.**	The comment presents a unilateral characterization of a phone conversation with NMFS personnel, which we cannot verify. The comment cites no additional sources of data the agency failed to consider.
AFA39	Sec. 117 (2) *provide for such stock the minimum population estimate, current and maximum net productivity rates, and current population trend, including a description of the information upon which these were based;"* Charts and information below will demonstrate that no SAR since 97/98 has complied with (1) or (2). (3) *estimate the annual human-caused mortality and serious injury of the stock by source and, for a strategic stock, other factors that may be causing a decline or impeding recovery of the stock, including effects on marine mammal habitat and prey:"*	This appears to be a comment on the adequacy of the agency's stock assessment report and not on the 2008 DEIS. The MMPA establishes the requirement that NMFS produce stock assessment reports, and dictates the procedures for reviewing them. They are based on the best available scientific information and undergo review by the statutorily created scientific review group as well as public comment. The 2008 DEIS described gray whale life history and recent stock status in detail (Section 3.4, Eastern North Pacific Gray Whale). The comment cites no additional sources of data the agency failed to consider.

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	In the 2007 SAR (which was based on the 2001 population estimate) the following statement highlights the complete lack of scientific rigor which typifies the DEIS. *" In fact, it is expected that a population close to or at carrying capacity of the environment will be more susceptible to fluctuations in the environment. (Moore et al 2001). The recent correlation between gray whale calf production and environmental conditions in the Bering Sea (Perryman et al 2002) may be an example of this. For this reason, it can be predicted that the population will undergo fluctuations in the future that may be similar to the 2 year event that occurred in 1999-2000 (Norman et al, Perez-Coretes et al),*	
AFA40	Gray Whales suffered a major crash with an estimated loss of between one third and almost one half of the population. To describe this major collapse as a " *fluctuation*" is absurd and unscientific. In other scientific literature, the crash is described as an Unusual Mortality Event (UME). An unusual mortality event (UME) is defined under the Marine Mammal Protection Act as: "*a stranding that is unexpected; involves a significant die-off of any marine mammal population; and demands immediate response*." Down playing the language by not indicating in the SARs that the population had sustained a UME, and failing to recognize the seriousness of the UME is a violation of Sec. 117(3). There was no *" immediate response*" . NMFS continued to set PBR values against the l997/98 population estimate as though nothing had changed. According to Wayne Perryman, the l997/98 estimate *" was not a good estimate*." Baleen whales take at least 10 years to recover from a crash of this size. Another " *fluctuation* " of a similar size would take the population out according to the heuristic model developed for Australians for Animals. Further, there is no evidence in the records kept since 1967 of any population crash of this size.	The population losses of 1999 to 2001 were described in the 2008 DEIS (Subsection 3.4.3.4.2, Stranding data). The agency declared an unusual mortality event at the time and thoroughly investigated it (Gulland 2005). The classification of a mortality event as "unusual" under the procedures of the MMPA is not inconsistent with a conclusion that the population losses between 1999 and 2001 may have been a fluctuation in response to gray whales reaching the carrying capacity of their habitat. Even a small number of mortalities can lead to a declaration of an unusual mortality event – the only requirement is that the event be "unusual." Other possible explanations for the population losses in those years are discussed in the 2008 DEIS (Subsection 3.4.3.4.2, Stranding data).

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	NMFS needs to explain why the official recognition of the UME has been ignored in the DEIS. And provide research which would support the contention above that " *it can be predicted that the population will undergo fluctuations in the future that may be similar to the 2 year event that occurred in 1999-2000 (Norman et al, Perez-Coretes et al),* At the same time NMFS scientist should model the impact of another UME on a population which is demonstrably under stress and in decline.	
AFA41	Climate change alone is a sufficient reason to ensure the Gray Whales have all the legal protection available. Clearly, the effects of increased seawater temperature are having a major impact on the benthic community on which the Gray Whales rely. Research by Moore and Grebmeier indicate the Gray Whales are seeking new feeding grounds. There is no research to demonstrate any adequate prey base along the migration route or research to support the NMFS contention that Gray Whales are surviving principally on other sources. What we do know is that in 2007, according to reports, up to 13% of gray whales sighted were emaciated. As sightings appear to indicate adult whales are emaciated, the question arises as to the impact of starvation on reproduction. The DEIS fails to cover this matter which has profound ramifications. If the population is at 20,000 plus, and 13 % of the adult population are emaciated and incapable of reproduction, (and there currently is no evidence which supports the hypothesis that starving whales can have a normal pregnancy and feed a calf) effectively removing a major percentage of the reproduction capability of the population. Another factor which should be taken into account when assessing the PBR but is not because of the deficiencies of this model. Without current figures for stranding; unknown ship strike mortalities and/or injuries; extent of orca predation which appears to have increased; it is not possible to assert that the take will not impact on OSP. Indeed, the impact of the massive number of oil and gas leases in the Bering, Chukchi Seas and Southern California combined with 13 proposed LNG works, wave energy projects,	The 2008 DEIS provided a comprehensive review of the status of the ENP gray whale population (Subsection 3.4, Eastern North Pacific Gray Whale). The new DEIS updates that information and adds a discussion of the status of PCFG and Western North Pacific gray whales (Subsection 3.4, Gray Whale).

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	military training areas, increased industrialization along the migration route is unknown. The sheer extent of industrialization and activity along the migration route are grounds alone to decline the Makah waiver. Climate change provides a compelling injunction to immediately relist the Gray whales under the ESA.	

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AFA42	POPULATION ESTIMATES. 1874 30,000 – 40,0 Scammon 93/94 23,109 (20,80 Lake et al., 1994 – Status Review of the ENP Stock of G August 1999 NMFS (Rugh, Muto, Moore, DeMaster) 24,638 Lake et al 1994 97/98 26,300 (21,90 IWC 26,635 (21,87 Hobbs and Rugh (1999) Status Review of the ENP Stock Whales – August 1999 NMFS (Rugh, Muto, Moore, DeM 29,758 min. est. 24,4 Rugh et al (NMFS Gray Whale Stock Asses. 2/6/05) 25,130 to 30,1 http://www.nmfs.noaa.gov/pr/pdfs/sars/ak2005whgr-en.p Federal register notice April 6,1998 Vol.63, No. 65 " Based on a revised Bayesian analysis of gray whale po dynamics, carrying capacity ranged from **25,130 to 30,1** upon the starting year of the trajectory." 1999 24,640 to 31,8 Status Review of Eastern North Pacific Stock. "Using a Bayesian statistical method to assess the stock to l995/96 data, point estimates of carrying capacity rang **24,640 to 31,840**." 00/01 18,761 NMML Gray Whale Census (Rugh) 19,448 Rugh et al (NMFS Gray Whale Stock Asses. 2/6/05) http://www.nmfs.noaa.gov/pr/pdfs/sars/ak2005whgr-en.p 18,246 Rugh et al 2004 (From Marine Mammal Research: Cons Beyond Crisis (John Elliot Reynolds, Timothy J. Ragen) 01/02 17,500 NOAA 2002 Press Release (5/10/02) and NNML Quarter Report (Rugh) 16,840 IWC Rugh et al 2004 (From Marine Mammal Research: Cons 18,178 Beyond Crisis (John Elliot Reynolds, Timothy J. Ragen) Min. est: 17,7 Rugh et al (NMFS Gray Whale Stock Asses. 2/6/05) http://www.nmfs.noaa.gov/pr/pdfs/sars/ak2005whgr-en.p 02/03 03/04 04/05 18,813 NMFS Gray Whale Stock Assessment 2/6/05 (based on 14 Min. 17,752 the 2000/2001 and 2001/2002 abundance estimates) http://www.nmfs.noaa.gov/pr/pdfs/sars/ak2005whgr-en.p 05/06 19,000 – 23,0 NOAA 2006-R114 Press Release – NOAA Reports Signi Increase in 2006 Whale Calf Numbers http://www.nmfs.noaa.gov/docs/GraywhalesMilbury.pdf 06/07 18,813 NMFS Gray Whale Stock Assessment 3/31/07 (based or Min. 17,752 the 2000/2001 and 2001/2002 abundance estimates) http://www.nmfs.noaa.gov/pr/pdfs/sars/ak2007whgr-en.p 20,110 Rugh et al NMFS Report of the 2006-2007 Census of the Gray Whales (AFSC Processed Report 2008-03) http://www.afsc.noaa.gov/Publications/ProcRpt/PR2008- 07/08 18,178 Federal Register Notice - Vol. 73, No. 82/Monday, April 2 NOAA Incidental Takes of Marine Mammals during Spec Shallow Hazard and Site Clearance Surveys in the Chuk 2008. The population has "increased to a level that equ pre-exploitation numbers". Angliss and Outlaw (2007) re population to be 18,178	The new DEIS describes the abundance estimates developed since the 2008 DEIS was published, including Laake et al. (2009) and Durban et al. (2013) (Subsection 3.4.3.3.3, ENP Abundance and Trends).

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	Table 6. Chart of some of the conflicting population estimates since 1874-2008 various sources	
AFA43	**BAND WIDTHS OF POPULATION ESTIMATES.** Year | Bandwidth | Range | Pop. estimate | Who 93/94 | 20,800-25,700 | 4,900 | 23,109 | Lake et al. 97/98 | 21,900-32,400 | 10,500 | 26,300 | IWC 97/98 | 21,878-32,427 | 10,549 | 26,635 | Hobbs Rug 97/98 | 29,758-24,477 | 5,281 | 29,758 | Rugh et al 97/98 | 24,241-36,531 | 12,290 | 29,758 | Rugh Cet.R 97/98 | 25,130-30,140 | 5,010 | | Fed Reg.98 1999 | 26,640-31,840 | 7,200 | | Status Revi 00/01 | 26,635-24,477 | 2,158 | 26,635 | NMF 00/01 | | | 18,761 | NMML Cen 00/01 | | | 19,448 | SAR 2005 00/01 | 16,096-23,498 | 7,402 | 19,448 | Rugl 00/01 | | | 18,246 | Rugh et al 01/02 | | | 17,500 | NOAA P/R 01/02 | | | 16,848 | Rugh et al 01/02 | 18,178-17,752 | 424 | 18,178 | SAR 01/02 | 15,010-22,015 | 7,005 | 18,178 | Rugl 04/05 | 18,813-17,752 | 1061 | 18,813 | SAR 15 05/06 | 19,000-23,000 | 4000 | | NOAA 200 06/07 | 18,813-17,752 | 426 | 18,813 | SAR 06/07 | 16,936-23,878 | 6942 | 20,110 | Rugl 07/08 | | | 18,178 | Fed Reg. 2	The new DEIS describes the confidence intervals associated with abundance estimates developed since the 2008 DEIS was published, including Laake et al. (2009) and Durban et al. (2013) (Subsection 3.4.3.3.3, ENP Abundance and Trends; Table 3-5).

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	Table 7. Chart of Bandwidths of Population Estimates	
AFA44	**RETROSPECTIVE MANAGEMENT?** In the 2001/2 SAR, NMFS states: - "*The l997/98 abundance estimate is the most recent and is considered the most reliable estimate of abundance for this stock. The most recent survey to determine abundance was carried out during the winter of 2000/01. An abundance estimate based on these data will be available in the 2003 SARs*." **NOTE**: There was no 2003 SAR, the next SAR did not appear until 2005 with an abundance estimate based on the mean of the 2000/01 and 2001/02 abundance estimates. The minimum population estimate is 17,752. * **NOTE**. In the conference call on 25th July, 2008 with Ocean Protection Council, NMFS, Assemblyman Pedro Nava staffers, Wayne Perryman, SWCFS NMFS said: - *1997-98 27K whales not a good estimate.*	We did publish a 2003 stock assessment report in August of 2004 (Angliss and Lodge 2004). We did not publish a stock assessment report in 2005. Table 3-6 in the new DEIS lists the stock assessment reports published for ENP gray whales.
AFA45	**PBR.** **PBR Equations for NMFS Stock Assessment Reports** $PBR = N_{min} \times 0.5R_{max} \times F_R$ N_{min}=min pop. Est. R_{max}=maximum theoretical net productivity rate F_R = recovery factor 1997 PBR = 432 animals (21,597 x 0.02 x 1.0) 2000 PBR = 575 animals (24,477 x 0.0235 x 1.0) 2002 PBR = 575 animals (24,477 × 0.0235 × 1.0) 2005 PBR = 417 animals (17,752 x 0.0235 x 1.0) 2007 PBR = 417 animals (17,752 x 0.0235 x 1.0).	The abundance of marine mammal stocks fluctuates with environmental conditions. Our confidence in our estimates of abundance can also fluctuate as a result of variation in survey conditions, such as weather. The PBR method of calculating safe levels of human-caused mortality is based on the minimum abundance estimates, which takes into account our confidence in the estimates. It is also reasonable for PBR to vary over time as the minimum abundance estimate fluctuates. In response to this and similar comments, we developed a table that shows the stock assessment reports from 1995 through 2013, with the calculated PBR and the reported human-caused mortality (refer to Table 3-6 in Subsection 3.4.3.3.4, ENP Status, Carrying Capacity, and Related Estimates, attached). As the table shows, prior to 2005, reported human-caused mortality did not exceed 20% of the PBR. After 2005 human-caused mortality increased because of increased harvest in the Chukotka hunt, but even in the period 2005 through 2013, human-caused mortality was 35% or less of the PBR.

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	Table 8. PBR 1997-2007 This table illustrates the inconsistency and confusion created by NMFS data. In l997, the PBR was set at 432 animals with the minimum population cited at 21,597. In 2007, the PBR was set at 417 animals, 15 animals less than the l997 figure, with the minimum population estimate cited at 17,752. A difference of 3,845 animals. In l997/98, gray whale numbers were high with NMFS estimating the population between 25,130 and 30,140.	
AFA46	Setting the recovery factor (f) at 1.0 is highly questionable. Professor Stephen Palumbi, Stanford University in a letter dated March 28 to California Assemblyman Pedro Nava in support of Resolution AJR 49 writes: - "*The U.S. Marine Mammal Protection Act puts a limit on the number of human-caused deaths that are allowed for marine mammal populations in order to be confident of their continued population growth. This value, termed the Potential Biological Removal, is based on the current population growth rate and on a management term called the Recovery Factor. For all the large whales, except gray whales, the Recovery Factor is set at a very conservative 0.1. But the National Oceanographic and Atmospheric Agency set the factor at 1.0, allowing a ten-fold higher rate of human caused mortality than for any other whale in U.S. waters. This regulatory decision allows 417 gray whales to be killed by human causes each year without triggering agency concern. A shift in regulatory status for the gray whale could reduce this number to 42 whales.* *These calculations are supposed to be based on the current population growth rate, but without a new population census, the current population growth rate is not known, and the Potential Biological Removal levels now used are based on data from 2002. A new stock assessment would count the current gray whale population, and establish the growth rate of the population, if any, from 2002 to 2008. These new data are critical to our understanding*	The new DEIS reflects the conclusion of our 2013 stock assessment report (Carretta et al. 2014), which relied on the analysis of Punt and Wade (2012), concluding that the ENP gray whale stock is at OSP (Subsection 3.4, Gray Whale). As described in the new DEIS, we rely on current carrying capacity to determine OSP (Subsection 3.4.2.1.2, Calculating Marine Mammal Population Parameters).

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	of the gray whale population because the official population counts dropped by about 1/3 from 1999 to 2002. If this decline has continued, then the gray whale may be entitled to endangered status under International Union for the Conservation of Nature Red List criteria. Periodic review every 5 years of the population status of marine mammals is mandated under the Endangered Species Act, and an assessment of the gray whale would be due now if it were still listed as endangered by the U.S."	
AFA47	Dr Elizabeth Alter, Marine Mammal Fellow, National Resources Defense Council, in a letter of support for Resolution AJR 49, California Assembly, March 31,2008 writes: - " *The assumption of full demographic recovery has been built into the recovery factor used in marine mammal management, a number used to calculate the acceptable level of anthropogenic mortality. Whereas all other baleen whales in the US waters are assigned a recovery factor of 0.1, gray whales are assigned a recovery factor of 1.0 (Read and Wade 2000). This increase in the recovery factor effectively raises the annual acceptable mortality for gray whales and thus can slow population growth."* And further: - *"" Alter et al (2007) show that gray whales have likely not achieved full demographic recovery. Rather, this population may be at most at 28-56% of historical abundance, estimated to be between 76,000 and 118,000 whales. This analysis was based on genetic information gathered from 10 genetic markers from across the genome analyzed and incorporated the effects of migration from other populations (such as the western Pacific and extinct Atlantic population.) These data suggest that the recovery factor used to calculate potential biological removal should be changed from 1.0 to 0.5. This change would reduce allowable take from roughly 417 animals to 208 animals, a more appropriate number from a precautionary standpoint."*	Historical abundance levels may be relevant to determining OSP if they reflect the current carrying capacity of the habitat. Very old abundance estimates, such as those presented in Alter et al. (2007) are less relevant than abundance levels immediately prior to whaling in terms of indicating current carrying capacity. Even if the recovery factor used in calculating PBR for ENP gray whales were 0.5, as apparently suggested by Alter et al. (2007), the PBR would still be in excess of 300, well above the current level of human-caused mortality. The work of Alter et al. (2007) was described and considered in the 2008 DEIS (Subsection 3.4.3.2.1 Estimates of Historic Abundance). The new DEIS provides an updated discussion of relevant scientific literature regarding the historical size of the North Pacific gray whale population (Subsection 3.4, Gray Whales).

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<tr><td>AFA48</td><td>
In a paper published by Science Direct [3] the following cite in relation to the PBR is revealing.

‘2.3 Selecting f

The value selected for f can be used to implement alternative management strategies. For example, a value of 0.1 can be used to provide a minimal increase in recovery time for a depleted population, to maintain a population close to its carrying capacity, or to minimize the extinction risk for a population with a limited range, while a value of 1 could be used to maintain a healthy, growing population at or above its maximum net productivity level (Wade, 1998: Taylor et al, 2000). Wade (1998) suggests a value of 0.5 for most healthy populations, as this provides protection against bias in population estimates, maximum growth rates, and mortality estimates. While this approach was designed to maintain a population at or above MNPL, a value of 1<f<2 could be used to control a population at a lower level, while f>2Nmin/N^ would be expected to reduce the population size no matter where it was in relation to its carrying capacity.’

If the three f values are put in a chart, the outcomes are significantly different.

<table>
<tr><th>Year</th><th>N</th><th>Rmax/2</th><th>f1</th><th>f2</th><th>f3</th><th>PBR1</th><th>PBR2</th><th>PBR3</th></tr>
<tr><td>1997</td><td>21597</td><td>0.02</td><td>1</td><td>0.5</td><td>0.1</td><td>432</td><td>216</td><td>43</td></tr>
<tr><td>2000</td><td>24477</td><td>0.0235</td><td>1</td><td>0.5</td><td>0.1</td><td>575</td><td>288</td><td>58</td></tr>
<tr><td>2002</td><td>24477</td><td>0.0235</td><td>1</td><td>0.5</td><td>0.1</td><td>575</td><td>288</td><td>58</td></tr>
<tr><td>2005</td><td>17752</td><td>0.0235</td><td>1</td><td>0.5</td><td>0.1</td><td>417</td><td>209</td><td>42</td></tr>
<tr><td>2007</td><td>17752</td><td>0.0235</td><td>1</td><td>0.5</td><td>0.1</td><td>417</td><td>209</td><td>42</td></tr>
</table>
Table 9. Comparison of Fr values.

The paper cites Wade 1998 ‘ 0.5 for most healthy populations, as this provides protection against bias in population estimates, maximum growth rates and mortality estimates’.
</td><td>
NMFS’ guidance on preparing stock assessment reports generally recommends using a recovery factor of 0.1 for a depleted population, a recovery factor of 0.5 for a population of unknown status, and a recovery factor of 1 when the population is known to be stable and at OSP (NMFS 2005). Consistent with this guidance, NMFS’ stock assessment reports have used a recovery factor of 1.0 in setting a PBR for ENP gray whales.

In the 2013 stock assessment report (Carretta et al. 2014), the authors concluded that the PCFG may warrant consideration as a stock in the future and used a recovery factor of 0.5 to calculate its PBR, as appropriate for a stock of unknown status.
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[3] Estimating the ability of birds to sustain additional human-caused mortalities using a simple decision rule and allometric relationships P.W.Dillingham,

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	NMFS simply cannot claim the population is ' *healthy* '. No explanation for setting the recovery factor at 1 has been forthcoming from NMFS in spite of requests by AFA Int.	
AFA49	Lance Barrett-Lennard in an email to Sue Arnold, AFA Int. CEO, dated February 27 2007 writes: - ' *You are right that natural mortality (including predation mortality) is not an explicit parameter the PBR formula. In theory, it's encompassed in Rmax (=reproductive-mortality rates). Furthermore whenever there is reason to believe that the population is vulnerable for either extrinsic or intrinsic reasons, the recovery factory should be reduced. I just looked at the last gray whale SAR (2005) and was surprised to see that a recovery factor of 1 (the highest possible) is used…. I do agree with your main point, which is that the high level of killer whale predation that the eastern gray whale population experiences reduces its recovery potential, meaning that the calculated PBR is likely to high.'* And further. " ***we are in agreement that setting rf to 1 is wildly imprudent***."	The passage quoted in this comment relies on a single factor to support a conclusion that the recovery factor for calculating the PBR of ENP gray whales should be less than 1.0. The passage does not contain a complete analysis to support the conclusion. Moreover, all stock assessment reports undergo review by the statutorily created scientific review group, and are noticed for public comment. For the most recent stock assessment report (Carretta et al. 2014), there were no public comments questioning the conclusion that a recovery factor of 1.0 is appropriate for the ENP stock.
AFA50	Dr Milani Chaloupka, a research scientist who developed an heuristic model of the Gray whale for AFA Int. writes in relation to the PBR: - "'*the unfortunate thing about PBR is that Rmax is a constant value and doesn't vary over time. Hence, if orca predation is increasing (due to the whale cascade view) then the Rmax needs to change over time as well (i.e. Decrease as orca predation increases). Unless of course reproductive output increases as the population decreases due to increased predation by orcas.* *So PBR is a static concept and not a time-varying concept that is needed to reflect environmental and or demographic variability. '*[4]	For many stocks the maximum productivity level (Rmax) is a default value (NMFS 2005), but where there is sufficient evidence to measure maximum productivity, the agency uses that value instead. In the case of ENP gray whales, we recently adopted a new Rmax for the ENP stock, based on the work of Laake et al. (2009) and Punt and Wade (2012) (Carretta et al. 2014).
AFA51	The ramifications of setting a ***' wildly imprudent***' rf need to be assessed urgently. The model below illustrates the fine line between	The comment provides no data or sources to support the contention that the ENP gray whale population has declined or is declining as a result of management decisions. To

[4] email from Dr Milani Chaloupka to Sue Arnold, Feb. 27, 2007

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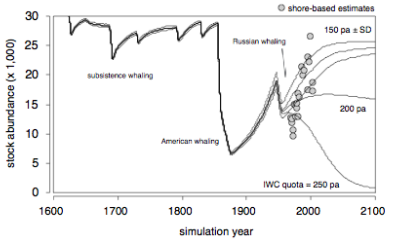
	survival and extinction for the Gray whales. AFA Int. notes that in 2003 when the model was commissioned, the facts that have now emerged in relation to the PBR, and the population estimates were not available. Given the new data, including the research by Professor Stephen Palumbi et al, it is highly likely that the so-called " management" of Gray whales in the last 8 years has led to a significant decline in the population. One can only hope that the decline does not lead to extinction.  **Figure 1** Expected California gray whale stock abundance derived from a stochastic sex- and ageclass structured simulation model that includes both environmental and demographic stochasticity as well as density-dependent compensatory and depensatory processes. Model based on best available scientific information reagrding gray whale ecology and demographic processes. Simulated gray whale stock was subject to a low level of indigenous whaling from 1600–1800 followed by the American whaling period from 1846–1874, the Russian whaling period from 1933-1946 and then by the IWC subsistence quota period from 1947- present. The fluctuations in the expected abundance evident during the subsistence whaling period (prior to the 1800s) result from the stock response to major ENSO events and the affect of such events on the major gray whale food stock (amphipod) abundance in the Bering Sea. ENSO = El Nino-Southern Oscillation, which relates to a major recurrent climate-ocean anomaly in the Pacific that can have a profound effect on marine ecological processes. The model suggests that both the American and Russian takes were grossly under-reported. Filled circles = shore-based stock abundance estimates. Three IWC quota scenarios shown with either a 150, 200 or 250 post-yearling take per annum (predominately larger females). The curves show the expected stock abundance from 1000 Monte Carlo trials. The 150 pa scenario also includes the expected ± 1 standard deviation curves — not shown for the 2 other scenarios to avoid visual clutter. Given model assumptions, it is apparent that the current IWC quota of 150 whales pa would slow recovery. On the other hand, a take of 200 pa (i.,e 50 more than the current quota of 150) would stop the recovery and probably result in a slowly declining stock while a take of 250 pa (or 100 more than the current quota) would most likely result in a stock well on the way to extinction. Prepared January 10, 2003 for Australians for Animals by: Dr Milani Chaloupka Ecologica, PO Box 6150,University of Queensland, St Lucia, Queensland, 4067, Australia Email: m.chaloupka@mailbox.uq.edu.au.	the contrary, the population appears to be stable, based on the most recent abundance estimates (Durban et al. 2013).
AFA52	Email correspondence obtained through a FOIA in 2004 recommends using the PBR to avoid setting estimates of OSP boundaries. Tom Eagle wrote: …'*I'd recommend relying most heavily on the dynamic response to say it looks as if the stocks is within OSP. Then you could use the PBR approach to estimate the maximum number you could remove from the stock without pushing it below OSP. In fact if you calculate a PBR like number and use 0.1 in the place of the recovery factor, you'd*	In response to the Tribe's waiver request, we developed an analysis of the status of the ENP gray whale stock relative to OSP (Punt and Wade 2012).

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	have a number that would be the upper limit of harvest that would allow the stock to equilibrate within 95% of K (which we could say is a "negligible impact").' **It is noteworthy that the PBR recovery factor was set at 1.0.** Further emails demonstrate grounds for an investigation. Roger Eckert wrote: "*All I know is that in order to consider an MMPA waiver, the MMPA requires, among other things, " a statement of the expected impact of the proposed regulations on the optimum sustainable population of such species or population stock". MMPA s.103 (d) (2). We need a way to satisfy that requirement."* And the response from Tom Eagle: " *In that case, I would recommend not using the term PBR in the analysis because some parties could claim that PBR has explicit application only in section 118. (Mike Gosliner from the Marine Mammal Commission has made this point to me more than once and I'd use his statements as a warning that other parties may pick up on it as well.) Unless there is better (more recent) info available, Paul Wade's paper in the 1998 Marine Mammal Science on calculating allowable mortality limits is a good source for a starting point. (see p.18). Using a formula of Nmin * .5 Rmax *0.1 you'd get an upper limit of mortality that would allow the stock to equilibrate (95% of simulations) within 95% of K: and for a stock below OSP, such a mortality limit would delay recovery to OS by less than 10%.* " *The astute reader would quickly catch the similarity to PBR; but avoiding the term … avoid some conflict down the road – unless you want to assert the idea that P1 (unclear) has some application outside section 118 (I think this would be okay but avoiding PBR could be easier."* **AFA notes again that the recommendation for any recovery factor is 0.1 not 1.0.**	

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	Further, the question of whether the PBR has explicit application other than under s. 118 needs to be clarified in the DEIS.	
AFA53	**KEY PBR ISSUES.** * PBR does not acknowledge zero harvesting which is a plausible option. * PBR is no substitute for comprehensive assessments. * MSY is not a target but a limit. * Nm- highly dubious value * No adequate explanation for setting *f* at 1.0 * Harvest data isn't good. No one can fit underlying historical population to data. * PBR why is it constant when NMFS claims population is increasing * No papers that explicitly review methodology. * Methodology has changed at least twice with little explanation. * Changes in location of study. Changes are not well documented in literature or journals. * Calving figures do not show exploding population.	The new DEIS discusses the analyses completed on ENP gray whale abundance since the 2008 DEIS was published (Subsection 3.4, Gray Whale). These new analyses include, among others, Laake et al. (2009), Punt and Wade (2012), and Moore et al. (2013). These analyses address the issues raised in this comment.
AFA54	**In an article published in Misterios, April 2008, Steven Swartz writes:-** **" *The census of the population conducted in 2000 indicated that the population had declined from its 1996 peak size by 35% to 16,000-18,000 whales."*** **Yet in spite of the acknowledgement of the status of the population by a senior NMFS scientist and others with many years of research and expertise on the Gray Whale, NMFS set the Nmin value in 2000**	The comment is correct that our census of ENP gray whale abundance lags behind the actual fluctuations in abundance, with the result that the associated calculation of PBR also lags. This could be of concern if human-caused mortality were close to the PBR level and events occurred like the die-off in 1999/2000. That was not the case, however, for ENP gray whales. The stock assessment reports for 2000 and 2001 reflect human-caused mortality around the time the die-off occurred, which at that time was about 14% of PBR. Even in 2005, when the abundance estimates reflected the die-off and the PBR was reduced by 23% (from 575 to 442), and the Russian harvest had increased from 76 whales to 124 whales (as reported in our stock assessment report),

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	at 24,477. If Swartz is correct, then Nmin should have been set at 16,000. Nmin value of 24,477 remained until 2005. **Nmin 16,000 x 0.0235 x 1.0 PBR =376.** **Nmin l6,000 x 0.0235 x 0.5 (as recommended by Wade)[5], PBR = 188.** **Nmin 16,000 x 0.0235 x 0.1 PBR =37.6** **These figures need to be compared with the values set with a recovery factor of 1.0, 0.5 and 0.1 against a Nmin which had no validity and failed to take into account the major population crash in 199/2000.** year Nmin Rmax Fr-1.0 0.5 0.1 1997 21,597 0.02 432 215 43 2000 24,477 0.0235 575 287 57 2002 24,477 0.0235 575 287 57 2005 17,752 0.0235 417 208 41 2007 17,752 0.0235 417 208 41 **Table 11. Comparison of Fr values** **At a time when the population had collapsed by 35% according to NMFS own estimate, the PBR values were unsustainable, grossly irresponsible and a violation of the agency's mandate.** **The PBR was 575 up until 2005.** **In 2001/2 the minimum population was estimated at 15,010. (Rugh et al)** **Nmin 15,010 shows much the same picture.** 2001/2 15,010 0.0235 352 176 35 **Table 12. Fr Values at 15,010**	human-caused mortality was still only about a third of PBR, as shown in Table 3-6 of the new DEIS (Subsection 3.4.3.3.4, ENP Status, Carrying Capacity, and Related Estimates).

[5] Estimating the ability of birds to sustain additional human-caused mortalities using a simple decision rule and allometric relationships. Dillingham P, Fletcher D. Science Direct in press 208

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	As this minimum population estimate was ignored in the 2001/2 SAR and the next SAR was published in 2005, AFA Int. assumes that the Nmin for the years from 2001-2005-6 were set at 24,477.	
AFA55	In 2006/7, a field study census was undertaken. A Field report of the 2006/7 census was submitted to the IWC (SC/59/BRG1). No population estimate was given. Counts of gray whale pods were compared with pods counted in 2000/01 and 2001/2. The Field Report states : - *after two censuses (2000/1 and 2001/2) in which abundance estimates were well below the expected trajectory. (Rugh et al).* In spite of the obvious similarities of pod counts noted in the 2007 SAR and Field Report, the Gray Whale population has suddenly increased to 20,110 (over 2,000 animals) yet the Nmin remains at 17,752. The Nmin was obtained using the mean of 2000/01 and 200l/2 abundance estimates – in other words, using the Nmin of 24,477. An obvious conclusion is that, in the absence of an abundance estimate in the Field Report, based on the number of pods sighted, the population remains well below the expected trajectory.	The new DEIS describes census data available since the 2008 DEIS, improvements to the method of counting southbound whales, and improvements to the methods of estimating population abundance based on those counts (Subsection 3.4.3.3.3, ENP Abundance and Trends).
AFA56	**DEPLETION MODEL** We estimated the underlying time-specific trend in the NMFS gray whale abundance series over the 40 years (1968-2007) using a generalised smoothing spline regression approach implemented in the gss library for R (Gu 2002). This nonparametric approach uses the data to determine the underlying linear or nonlinear trend without having to assume any specific functional form. It is apparent from Figure 1 that gray whale abundance on the southbound migration at Granite Canyon (California) was generally increasing from the late 1960s until the mid-1990s and then has been decreasing steadily ever since. Gu C (2002) *Smoothing spline ANOVA models*. Springer-Verlag, New York.	We have not attempted to analyze the modeling results presented in this comment, but note that Laake et al. (2009) reviewed and revised the historic abundance estimates and provided updated plots of abundance including error bars. Durban et al. (2013) updated this analysis with new years of abundance surveys. These and other analyses are described in the new DEIS (Subsection 3.4.3.3.3, ENP Abundance and Trends).

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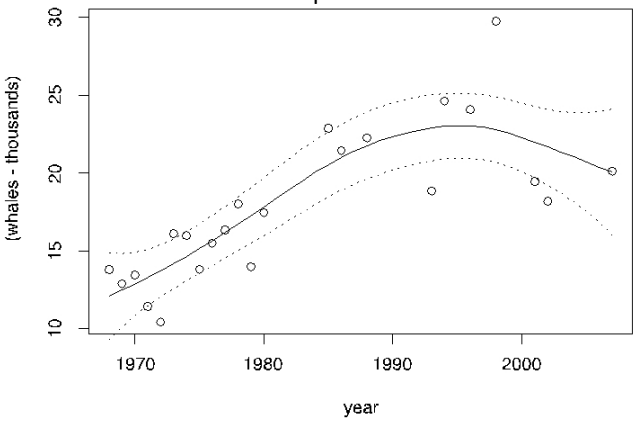
	Table 13. Depletion Model  **Figure 1** Time series plot of the estimated number of gray whales migrating each year since 1968 southward past the NMFS study site at Granite Canyon (California). Open circles show NMFS-estimated gray whale abundance, solid curve shows smoothing spline regression fit to the time-specific abundance series, dashed curves show 95% Bayesian confidence interval for estimated underlying smoothing spline trend. Note that there were no NMFS surveys in the following years: 1981-1984, 1987, 1989-1992, 1995, 1997, 1999, 2000, 2003-2006. © Australians for Animals Int. Model by Ecological Modelling Services Pty Ltd. Brisbane Australia.	
AFA57	**RUBBERY FIGURES .** In correspondence with Dave Rugh, AFA has attempted to clarify the questions relating to the PBR and abundance estimates for the last 10 years. His response via email does nothing to clarify the 2000 + increase in animals. Rugh's claim that the " *difference of 2000 is a function of*	Comment noted.

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	change across five years rather than a change in analytical procedures for any one year" provides zero clarity. Rugh email dated 18/7/08: - '*The abundance estimate of 18,178 was from counts made in 2001/02, as published in the Journal of Cetacean Research and Management. The abundance estimate of 20,110 was from data collected in 2006-2007 as presented in the AFSC Processed Report.* *Therefore the difference of 2000 is a function of change across 5 years rather than a change in analytical procedures for any one year. In fact, there is considerable effort to keep the counts and analysis standardized in order to allow for these inter-year comparisons. Then again the CVs (15,010 to 22,015 in 2001/02 and 16,936 to 23,878 in 2006/07) do mean there is some range around each of the point estimates*." The following graphs show the CVs show more than " *some range around each of the point estimates*.	
AFA58	**BACKGROUND.** An analysis of the status of the population estimates since from 1967/68 until 87/88 when they were consistently undertaken by Buckland et al.[6] follows:- The annual percentage increase over that period was estimated at 3.2% each year except for a 3.3% increase in 77/78. These figures are in line with projected increases for baleen whales.	As previously noted, Laake et al. (2009) reviewed and revised the historic abundance estimates and provided updated plots of abundance including error bars. Durban et al. (2013) updated this analysis with new years of abundance surveys. These and other analyses are described in the new DEIS (Subsection 3.4.3.3.3, ENP Abundance and Trends).

[6] Buckland et al Marine Mammal Science Volume 9. No 3 1993

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	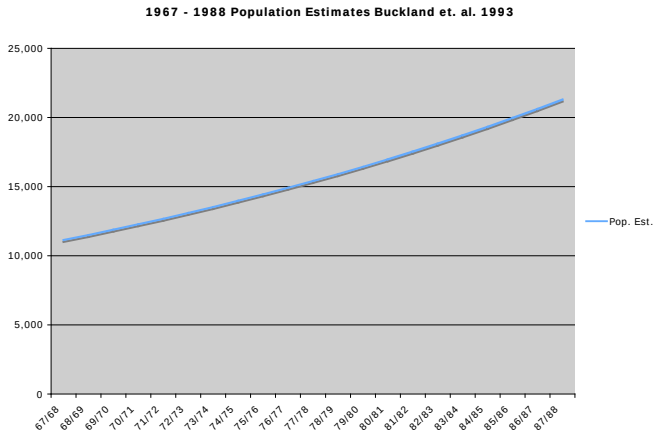 Table 14. Buckland estimates 1967-1988 However, once the delisting took place in 1994, the methodology changed and NMFS reported the following increases and decreases. 92/93 - 93/94 - 30.75% increase 94/95 - 95/96 - 3.66% decrease 95/96 - 97/98 - 18.13% increase 97/98 - 00/01 - 22.68% decrease 00/01- 02 - 6.72% decrease (Illustrated in the chart below)	

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	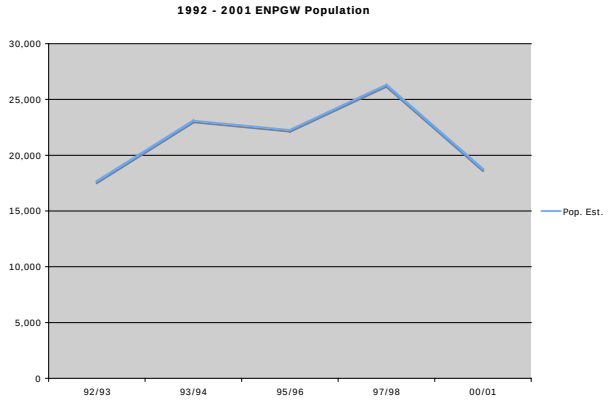 Table 15. 1992-2001 ENPGW Population Estimates. These increases are biologically impossible and highlight the growing concern over the methodologies used by NMFS and the substantial uncertainties in these NMFS estimates. The uncertainties of NMFS calculations can be further illustrated by the following graphs: Co-efficient variation (CV) is a measure of the uncertainty of the estimate. CV change from mid-1990's onward as analytical approach changed	

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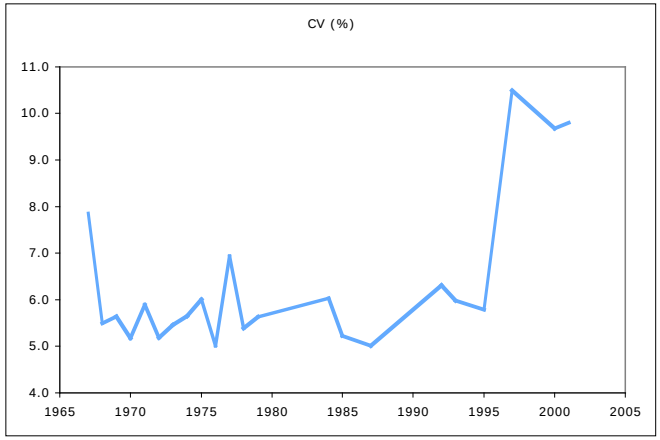
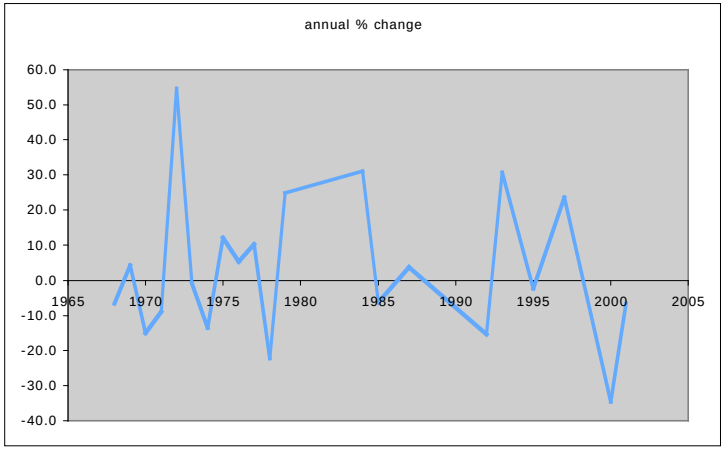
	 Table 16. CV change from mid 1990-s onward. Annual % change from mid-1990's onward as analytical approach changed  Table 17. Annual % of change. As a further example of the confusion created by NMFS changes in methodology, we chart the " corrected abundances" as outlined in	

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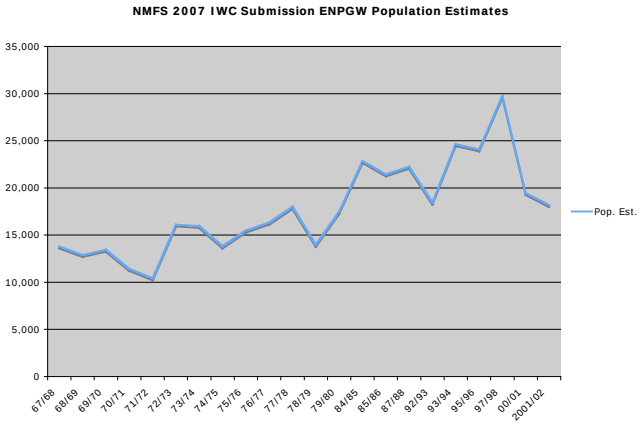
	the 2006/7 field report presented to the IWC Scientific Committee at the Anchorage meeting as compared with the abundances charted by Buckland et al from l967/1988.  Table 18. NMFS 2007 IWC Submission ENPGW Population Estimates. An IWC report states " Abundance and trend estimates from shore based censuses led to an estimated annual increase of 2.5% (S.E.=0.4%) "[7] The true status of the population is unclear. Canadian researchers suggest the population may be as low as 15,000 [8] Another email from Dave Rugh in relation to the increase of 2000+ animals now attributed to the field survey and 2007 AFSC Report further illustrates the confusion. *From Sue Arnold, AFA Int.* *I still cannot get my head around where the increase of 2000 plus whales comes from. There was an estimate done in 2006/7 but*	

[7] IWC Chairman's Report of 46th Annual Meeting, 1994
[8] pers.comm.Dr William Megill

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	where or how does the increase come from in the AFSC report ? There wasn't another count, so have you changed the CV or what ? *I would be very grateful for your patient explanation. I ve also emailed Paul and Jeff, thanks for their emails. With regards Sue* **On 16/7/08 8:51 AM, "Dave Rugh" <Dave.Rugh@noaa.gov> wrote:** **Hi Sue-** ***1) At the time of the publication of the attached file ("Gray Whale Abundance") in 2005, the most recent abundance estimate was 18,178 based on counts made in 2001/02 (CV=9.79%; 95% log-normal confidence interval=15,010 to 22,015). Perhaps the 18,313 that you noted came from an earlier draft of that report. However, since then we have a more recent abundance estimate of 20,110 from data collected in 2006-2007 (CV = 8.78%; 95% log-normal confidence interval=16,936 to 23,878). The latter estimate is from the AFSC Processed Report as you noted. Therefore, the Makah DEIS has the latest estimate correctly indicated (20,110 whales from counts made in 2006-2007), which - as you mentioned is about 2000 more than the estimate (18,178) from counts made 5 years earlier in 2001-2002."*** If the minimum population in 2001/02 was 15,010 to 22,015 as indicated by Rugh in his email and 16,936 to 23,878 in 2006/7, the PBR Nmin for the years 2000l to 2005 was not a reflection of minimum population. (See PBR section). Similarly, the PBR Nmin for 2006/7 is l7,752 although Rugh's minimum estimate is 16,936. Rugh fails to point out is that the US submitted a field report to the IWC at the meeting in Alaska in 2007 which contained no population estimate only the number of pods which the report compared to 2000/2001. It is worth repeating the cite from the Field Report :- The Field Report states : - *and after two censuses (2000/1 and 2001/2) in which abundance estimates were well below the expected trajectory. (Rugh et al).*	

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	There is no explanation as to how these censuses in 2000/1 and 2001/2 in which abundance estimates were well below the expected trajectory are now somehow transformed into an increase of 2000+ animals without a shred of evidence to support this alleged increase. In any event, according to an email from Roger Eckert, NOAA dated l9 April 2004 to Jeff Lake et al, Jeff Lake wrote – *the difference of 1000+ whales is not statistically significant.* Given that the new population estimate of 20, 110 represents and increase of 1297 animals since the 2005 SAR which is based on 2000/1 and 2001/2 SARs, AFA regards the increase as neither statistically significant NOR an indication that the population is recovering. On the contrary, these statistics give a clear indication of a population in decline. Other agencies claim the population in 2007 is 18,178. Federal Register Notice - Vol. 73, No. 82/Monday, April 28, 2008 – NOAA Incidental Takes of Marine Mammals during Specified Activities; Shallow Hazard and Site Clearance Surveys in the Chukchi Sea in 2008. The population has "increased to a level that equals or exceeds pre-exploitation numbers". Angliss and Outlaw (2007) reported the population to be 18,178. In the DEIS, the following statement is made:- " **.. NMFS CAN ONLY BE RELATIVELY CERTAIN THAT THE TRUE ABUNDANCE IN 2006/7 WAS PROBABLY SOMEWHERE BETWEEN 17,000 AND 24,000 WHALES**."	
AFA59	AFA Int. doubts that NMFS can be even vaguely certain of any population data given the lack of funding for any substantive research.	Attachment 3 to this memo describes the many monitoring efforts undertaken by NMFS and others.
AFA60	**CARRYING CAPACITY.** In 1990, the Scientific Committee of the IWC noted that " *either feeding or breeding limitations could determine the carrying capacity for this stock."*	Punt and Wade (2012) concluded that the ENP gray whale stock is at 85% of carrying capacity. These results were reviewed and accepted by the IWC Scientific Committee (IWC 2011) and the statutorily mandated scientific review group (Allen and Angliss 2011). The new DEIS includes a discussion of NMFS' approach to establishing carrying capacity (Subsection 3.4.2.1.2, Calculating Marine Mammal Population Parameters),

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	AFA Int. believes that both factors are at play with the Gray whale population. The feeding limitations caused by climate change in their primary feeding grounds are impacting on breeding as evidenced by the lowest count ever recorded in San Ignacio Laguna and by the SAR's since 2000. As well, the impact of contamination of Gray whales on reproduction has not been researched. With the rapidly diminishing ice in the Arctic feeding grounds and no research to indicate the location and sustainability of alternative prey, the carrying capacity of the Gray whale is unknown. This fact is supported by comments made by Wayne Perryman in a conference call between NMFS SWFC, Ocean Protection Council, Assemblyman Pedro Nava's office and Sue Arnold from AFA Int. on behalf of the California Gray Whale Coalition. Wayne Perryman acknowledged that :- " *the large picture keeps changing, the carrying capacity almost impossible to estimate because doesn't stay in the same place. Rate of change is changing. It is a rapidly changing environment.* " Cites from 1874 below indicate the instability of any measure of the carrying capacity. 1. **1874** Scammon, **30,000 to 40,000.** **2 * October 1993** Gray Whale Monitoring Task Force, NMFS, NOAA, A 5 Year plan for Research and monitoring the eastern north pacific population of gray whales. NMFS estimates population is approximately **21,000 animals** " *close to pre-commercial population size and will soon begin to decline because they are approaching their ecosystem's carrying capacity*." 3**. 1998** " *Based on a revised Bayesian analysis of gray whale population dynamics, carrying capacity ranged from **25,130 to 30,140** depending upon the starting year of the trajectory, with the upper 95th percentile of 43,950 and 59,160* " [9]	and the conclusion that the ENP stock is at OSP (Subsection 3.4.3.3.4, ENP Status, Carrying Capacity and Related Estimates).

[9] Federal register notice April 6,1998 Vol.63, No. 65

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	4. **1999**. " *Using a Bayesian statistical method to assess the stock with 1996/67 to l995/96 data, point estimates of carrying capacity ranged from **24,640 to 31,840**."* [10] 5. **2000/01 19.448** Journal of Cetacean Research . David Rugh et al. (CV=9.67%; 95% log-normal confidence interval=16,096 to 23,498) **6. 2001/02 18,178** Journal of Cetacean research David Rugh et al (CV=9.79%; 95% log-normal confidence interval=15,010 to 22,015). The abundance in 1997/98 was the highest estimate made since this project began in 1967/68. It was followed by two much lower estimates – probably related to the high mortality rates observed in 1999 and 2000. This whale population appears to be approaching the carrying capacity. **7. 12 January, 2004** Declaration of Roger Gentry (head of Acoustics Program in the Office of Protected Resources NMFS) in Australians for Animals et al v. Donald L. Evans. " *The gray whale population is not in decline. Mr Rugh's declaration concludes that the population underwent a brief reduction but is now stable. Professionals in population dynamics agree that the population has reached carrying capacity of its environment and should no longer be expected to grow at pre 1997 rates but it is not declining*. * Note: AFA Int. has serious concerns over this evidence given that the population crash had been identified as a UME and no action had been taken as required under the MMPA. We believe Roger Gentry mislead the Court. 18. *Retrospective analyses of abundance estimates suggest that the ENP gray whale population was approaching carrying capacity by the late 1980's (P.Wade pers.comm..). If so, and if the population remained near carrying capacity through the late 1990s, a sudden decline in marine ecosystem productivity caused by the 1997-1998 El Nino could have contributed to whale mortality. A drop in ENP gray whale abundance estimates from a high of 27,958 (CV=0.1) for 1997-*	

[10] Status Review of Eastern North Pacific Stock.

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	*1998 migration to **18,246** (CV=0.9) for the 2000-2001 season and to **16,848** (CV=0.9) for the 2001-2002 season (Rugh et al 2004) supports this view.*[11]	
AFA61	**CURRENT ABUNDANCE** *" Gray whales have been taken as part of aboriginal hunts since before European arrival and have been exploited commercially on both sides of the North Pacific for the last two centuries. ….. However, the basic density-dependent model and its variants cannot reconcile the current abundance and continued increase of this population with the historical catch records; the population seems to have overshot its historical K by 200-300%. A consistent trajectory can be achieved only be assuming large historical " adjustments", such as under-reporting historical catches by a half to a third or by assuming density dependent selection on life-history parameters resulting in long-period oscillations in abundance.* *As an alternative to backward extrapolation using uncertain historical records, Wade considered only the " known" catch data available since the start of shore-based surveys during 1966-67 (ignoring all catches before this time), and the trend in the 21 years of abundance surveys. Using several modifications of the basic model and incorporating Bayesian statistical estimators, Wade concluded that the variance of the time series of abundance estimates was greater than was estimated previously. As a consequence, previous models have derived estimates for K and other population parameters (e.g. rates of increase) that were overly precise. Taking this additional variance into account, the 95% confidence intervals of predicted current carrying capacity (K) were much wider than calculated in previous models, extending from **19.980 to 66,720**. Consequently, there was a moderately large probability (>0.20) that*	The response to the previous comment addresses the points raised here.

[11] *Marine Mammal Research: Conservation Beyond Crisis. John Elliott Reynolds, John E. Reynolds III, William F. Perrin, Randall R. Reeves 2005*

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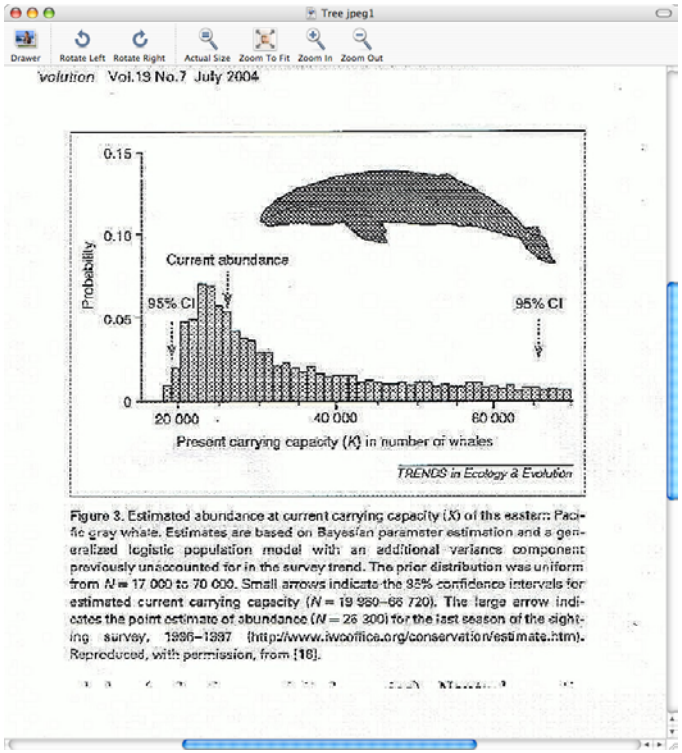
	the current population is still below 50% of K." Trends in Ecology and Evolution Vol.19.No.7 July 2004 [12]  Figure 3. Estimated abundance at current carrying capacity (*K*) of the eastern Pacific gray whale. Estimates are based on Bayesian parameter estimation and a generalized logistic population model with an additional variance component previously unaccounted for in the survey trend. The prior distribution was uniform from *N* = 17 000 to 70 000. Small arrows indicate the 95% confidence intervals for estimated current carrying capacity (*N* = 19 980–66 720). The large arrow indicates the point estimate of abundance (*N* = 26 300) for the last season of the sighting survey, 1996–1997 (http://www.iwcoffice.org/conservation/estimate.htm). Reproduced, with permission, from [16]. Table 19. Modelling the past and future of whales and whaling. Scott Baker, Clapham *" Alter et al (2007) show that gray whales have likely not achieved full demographic recovery. Rather, this population may be at most at 28-56% of historical abundance, estimated to be between 76,000 and 118,000 whales. This analysis was based on genetic information gathered from 10 genetic markers from across the genome analzyed*	

[12] Modelling the past and future of whales and whaling. Scott Baker & Clapham.

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	and incorporated the effects of migration from other populations (such as the western Pacific and extinct Atlantic population.) " [13] At the l999 Status Review, a paper by Wade & DeMaster [14]' *supports the possibility of an historical abundance as high as 70,000.'* " *Point estimates of the equilibrium population size ranged from 24,000 to 32,000 depending upon which model was used, but values as high as 70,000 still had some probability."*	
AFA62	**REPRODUCTION.** " *Given the relatively low estimates of Rmx that exist for cetaceans, it is obvious that cetacean populations can decline much more rapidly than they can increase, and this should be reflected in the kind of environmental variance term that is incorporated into a population dynamic model*." [15] Unquestionably, the rate of reproduction has changed. Female reproduction rate was about 2 years (Lankester & Beddington SC/37/PS21). 'Report of the Special Meeting of the Scientific Committee on the Assessment of Gray Whales, 23-27th April, 1990 – Biological Parameters for Gray Whales' identifies the pregnancy rate as 0.46 per year. Swartz, Urban et al, 2008, Jones (1990) estimated the calving interval for female gray whales at 2.11 + SD 0.403 years during the period l977 to l982. The estimated calving interval of 2.48 + SD 0.607 from this study suggests that fewer females are reproducing every other year which has been typical in the previous decade, and suggests that the reproductive rate of the ENP population may be slowing. Low calf counts could be indicators that some gray whale females are unable to obtain sufficient energy resources to conceive,	Comment noted. The 2008 DEIS discussed gray whale reproduction (Subsection 3.4.3.1.5, Reproductive Physiology and Calf Birth, Growth, and Development). The new DEIS discusses gray whale reproduction in Subsection 3.4.3.1.5, Reproduction and Calf Production.

[13] Letter from Dr E. Alter in support of AJR 49.
[14] A Bayesian Analysis of Eastern Pacific Gray Whale Population Dynamics. (unpubl)
[15] P. Wade. " Estimates of population parameters for the eastern Pacific gray whale, (Eschrichtius Robustus) using a Bayesian method. 1994 SC/46/AS16

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	or if pregnant to bring calves successfully to term. Brown and Weller (2002) suggest that resource limitations may result in a three year rather than the normal two year reproductive cycle in western pacific gray whales. Steve Swartz pers.comm. Sue A. Feb. 2008 Mexico. *Calving cycle has increased to 2.4 years suggesting that some females are reproducing every three to four years on average.* **Calving Interval increasing.** According to the report of the IWC Scientific Committee in Shimonoseki, Japan, the mean length of the calving interval was estimated at 2.50+ 0.29 years. This interval is, according to the report, significantly higher than 2.11 years estimated for the period 1977-l982.[16] In an article in the Seattle Post Intelligencer, 18 May, 2007 Swartz is quoted saying:- "*We know that the primary feeding ground is in the Bering Sea, north of the Gulf of Alaska. We know that has been going through some severe changes associated with climate change, warming of the water and changing of the oceanography. Where the whales used to congregate in large numbers to feed, they don't any more. They may be suffering from not enough food, or they may have become vulnerable to parasites or diseases from having to switch to different food sources. They can survive this for a period of time, but not forever.* *" The biggest concern is if they are nutrition-stressed, the females may not be able to bring their calves to term or give birth to those that are hardy enough to survive."* Wayne Perryman is quoted in an article " *Lactating and fasting at the same time is very challenging* " Perryman said. (As if he would know.) " *If a female is not putting on weight rapidly, she kicks into*	

[16] IWC SC repne doc. Page 37. IWC Japan, 2002)

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	miscarriage." Perryman has noted the pattern for five years. [17] In the DEIS, Urban and Swartz are quoted saying that 11-13% of animals in San Ignacio were emaciated. The Report of the IWC Scientific Committee IWC/54/4 Annxes F-G. 2002 in relation to the Western North Pacific Stock Gray Whales stated:- " *The three year calving interval observed in western gray whales is hypothesised to be due to nutritional stress and compounded by ongoing anthropogenic disturbance while on the feeding ground. If western gray whales have increased their calving interval from two years, as typically reported for eastern gray whales, to three years, the change will decrease overall calf production by at least 20%. This change, if persistent, will have a major impact on the potential of the population to recover from its depleted state*." In 2002, the IWC Scientific Committee reported that calving intervals were estimated to range from 2-4 years.[18]	
AFA63	**STRESS IMPACTS** Dr Albert C. Myrick Jr. in his declaration in the lawsuit Hawaii Green Party versus Donald Evans January, 2003 San Francisco District Court asserts that a steep decline in population size, accompanied by a steep decline in yearly calf production is indicative of a population subjected to unusually strong chronic stressors. Dr Myrick adds that ' *although various natural and human-caused chronic stressors that could potentially affect the gray whale population can easily be identified, none has been studied from a physiological standpoint*.' In his declaration Dr Myrick explained that (5a) ' *stress increases the levels of glucocorticosteroids (cortisols) in the blood. Chronically*	If chronic stress were reducing the fitness of ENP gray whales to the extent of increasing mortality or reducing productivity, that effect would be reflected in the status of the population. The 2008 DEIS described our basis for concluding that the ENP gray whale population is at OSP (Subsection 3.4.3.4.5 Estimates of Carrying Capacity (K), OSP, and PBR. The new DEIS contains an updated discussion of information on ENP status (Subsection 3.4.3.3.4, ENP Status, Carrying Capacity and Related Estimates).

[17] A Whale of a Food Shortage. Usha Lee McFarlane, Kenneth R. Weiss LA Times 25 June, 2002

[18] Report of Scientific Committee, IWC Japan. IWC54/4/Annexes F-G. 5/14/02

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	elevated levels of cortisols, i.e., persistently elevated levels over time, suppress luteinizing hormone. This hormone is essential to female ovulation and maturation of the ovum (unfertilised egg). Elevated blood cortisols result in fewer eggs and in fewer eggs reaching maturity. Thus, low calf production would be resultant from a population under strong chronic stress. *Elevated levels of cortisols in the blood also suppress growth hormone. This would result in slower growth in growing animals and thus would delay sexual maturation. The protaction of time between birth reproductive readiness could mean a lower reproductive rate for the population and a reduction in the annual production of calves.* *Chronically elevated blood cortisols tend to destroy nuclear DNA of lymphocytes, cells that play a major role in the immune response. The result of large scale destruction of lymphocytes would be the increase of susceptibility to disease and infection.* *Each source of stress (stressor) is a potentiator. Multiple stressors may act synergistically to impact an animal's physiology at a level that would be greater than the sum of the individual stressors.* *The introduction of additional stressors in the population, presumably already under (unstudied) multiple chronic stressors, could compound the putatively pathological responses, such that further, more rapid deterioration of the population may occur.* *Considering the very serious decline both in the population size and calf production of the Eastern Pacific gray whale and the likely possibility that the population is under strong chronic stress, the reasonable governing principle should be one of non-interference, ie; we should avoid the introduction of additional (especially human generated) factors that may further promote the further deterioration of the remaining numbers of this once great whale population.* These factors have been completely ignored in the Makah DEIS.	
AFA64	**MALE BIAS IN POPULATION.**	Comment noted.

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	Another factor which could have serious implications for the Gray whale population is the growing evidence of a male bias. No research has been undertaken in spite of considerable evidence including the historical female bias in the Russian kill. Harvest data obtained from the IWC for gray whales for years 1966-1993 shows a much higher ratio of female kills. 1626 males and 2989 females were [19]killed in that period. Research on Western gray whales in 2002 demonstrates an overall male biased sex ratio of 59.1% males and 40.9% females. The sex ratio for calves was 68.0% male and 32.0% female. With the evident collapse of the population in 1999/2000 and evidence of the female bias in the Russian kill, it is critical that NMFS undertake studies to determine the sex ratio of the Eastern Gray Whale. Similar male bias percentages in the Eastern Gray whale population would have serious implications for reproduction.	
AFA65	**MEXICO.** The DEIS has conveniently ignored the data from Mexico and the results of a recent paper by Swartz, Urban et al. [20]*San Ignacio Laguna represents one of the best series of baseline data which cannot be ignored.* " *Overall counts in 2008 were the lowest ever recorded in LSI winter during. The 2008 arrival and occupation of LSI was the latest and shortest ever recorded for gray whales in the lagoon. Comparison of these trends with other breeding lagoons is needed to determine if these decreasing counts, shortening and shift in timing of the winter lagoon occupation by gray whales reflect actual population declines or changes in gray whale distribution to other areas within their winter range*."	Perryman et al. (2011) found that annual calf counts vary considerably, and identified a correlation between artic sea ice and calf counts. While persistent low calf abundance could be a concern, the ultimate indication of adequate calf production is the population abundance trends.

[19] Table 2. SC/46/AS p.12 Wade, 1994
[20] Preliminary comparison of winter counts of gray whale in Laguna San Ignacio, B.C.S, Mexico from 1978 to 2008.

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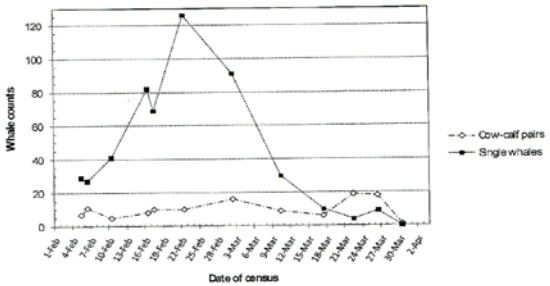
	Mother calf pairs were the lowest recorded during the post die-off period from 2003-2008. The following graph of cow calf pairs and single whales is insightful.  Figure 9. Number of cow-calf pairs (black mark with single line) and single gray whales (white mark with dotted line) counted in census surveys of Laguna San Ignacio in the LOWER ZONE during the 2007 winter season. **Photographic Identification - Residency** A total of 815 usable photographs of gray whales were obtained from 2428 digital exposures. From these, 615 different individual whales were identified from 1156 right-side photographs and 735 left-side photographs. Only 121 whales were photographed from both sides. The analysis of left-side photographs yielded 181 single whales, 58 females with calves, and 11 unknown whales (individuals that for some reason could not be assigned to one of the previous group classes), or 250 individuals (Table III). The analysis of right-side photographs yielded 272 single whales, 79 females with calves, and 14 unknown whales, for 365 individuals. The minimum number of individual whales (single and females with calves) identified from the photographs is equal to the larger number of individuals identified from the left or right side, or 365 whales identified from the right side photos (this includes the 121 individuals identified from both left and right side photographs). If we assume that the whales identified from only their left side photos are distinct from those identified from right-side photos (none are of the same individual), the maximum number *Report of the 2007 Gray Whale Studies at Laguna San Ignacio B.C.S. Mexico* 12 Table 20 – Review of 2007 Gray Whale Studies at Laguna San Ignacio.	
AFA66	*" Low gray whale calf counts in Laguna San Ignacio and during their northward spring migration are especially troublesome as they could indicate a reduction in the reproductive potential of the population. Perryman et al (200) observed that gray whale calf production appears linked to summer ice conditions in the Arctic which may limit pregnant female whales' access to prey resources in some years and subsequently lower calf survivorship. Their observation suggest that short-term annual changes in oceanic sea ice conditions along with longer-term basin scale changes may ultimately affect gray whale productivity. Our observations of " skinny" gray whales in Laguna San*	See response to previous comment.

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	Ignacio also suggest that prey resource limitation is a factor in the health and status of the population. Vulnerability to parasites and disease associated with prey switching and overall stress could affect gray whale productivity and survivorship. (F. Gulland, S.E. Moore and T. Rowles, pers.Comm.) :"	
AFA67	In February, 2008, Australians for Animals CEO, Sue Arnold, had a meeting with Steve Swartz at San Ignacio Laguna. He reported that :- *'the reproduction rate of the whales has extended from one calf every 2.4 years to one every 3- 4 years.'* ** 2007 - 12% skinny whales* ** 2007 - lowest calf count in 30 years* ** water temperature 2 degrees cooler in lagoon* ** experts postulate that the cooler temperature might be keeping whales out of lagoons. Whales are being seen coming up the Sea of Cortes, Acupulco, Loreto, Cabo, and other places where not usually seen* ** big drop in lagoon numbers. Usually 2000 in Guerrero Negro, so far around 600. usually 300 in San Ignacio -so far, around 120.* ** whales spending more time underwater* ** calves smaller* ** not much sexual activity* ** few juveniles* ** fishermen see whales trying to feed on lagoon bottom, may be sucking up some slugs and shrimp.* ** everyone spoke of food shortages causing problems for whales.*	See response to previous comment.
AFA68	In the light of the information presented by Swartz, Urban et al, 2008, NMFS assertions that the population is healthy and recovering can be taken with a grain of salt.	See response to previous comment.

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	The importance of conditions in the San Ignacio Lagoon cannot be ignored. Swartz is quoted in a web article, Journey North Gray Whales saying:- " *The San Ignacio Lagoon, one of four gray whale breeding grounds off the Pacific Coast of Mexico, can be used as a litmus test for the reproductive rate of the species*.." 2007 AFP AFA Int. notes that according to Swartz and Urban [21] 17.50% of cow calf pairs in 2007 were 'skinny.' If San Ignacio Lagoon is an indicator of the status of the population, this figure is a cause of major concern.	
AFA69	In an article written by Swartz in Misterios de Laguna Baja Enero – Abril de 2008, the following insightful comments are made:- " *In the past, large numbers of gray whales gathered in the northern Bering Sea's Chirikov Basin which was known as a primary Arctic feeding ground for gray whales. Spring time and summer plankton blooms resulted in rich colonies of amphipods, a nutricious gray whale food source, on the sea floor. However, dramatic changes in the oceanography of the Arctic associated with global climate change have occurred in recent decades and specifically in the Bering Sea. During the 1990's the Arctic air and water temperature warmed, polar sea ice began to melt faster than any other time in history, and the ocean currents that supported the rich communities of amphipods changed. One result was that the former productivity of the Chirikov Basin declined severely and there is now less food available for gray whales and other species to feed on.* *" Some scientists believed that the gray whale population grew too large and overgrazed the amphipod communities, while other scientists point to climate change effects on the oceanography of the Bering Sea that resulted as the cause of a less productive system or perhaps some combination of factors. With the loss of this important*	See response to previous comment.

[21] Preliminary comparison of winter counts of gray whale in Laguna San Ignacio, B.C.S, Mexico from 1978 to 2008.

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	feeding area, scientists reported in 2003 that aggregations of feeding gray whales were further north in the southern Chukchi Sea and whales are now travelling to new areas and spending more time looking for their primary food sources. Recent sightings of " skinny " gray whales at Laguna San Ignacio suggest that food limitation is a factor in the health and status of individual whales and of the population. Stress resulting from having to find new food resources and to work harder to get them could make the whales more vulnerable to parasites and disease. *Disruption of the gray whales' food chain can also have implications for gray whale calf production and their survival. Counts of newborn clves in Laguna San Ignacio in 2007 were the lowest ever recorded, as were counts of female gray whales with calves passing Punta Pedras Blancas in California Norte during the northward spring migration.* ***Low gray whale calf counts are especially troublesome because they could indicate a reduction in the reproductive capacity of the population.*** *(our emphasis). Gray whale females can birth birth to a calf every two years -12-13 months for gestation, followed by the birth of a calf and then 6-9 months nursing before the calves can feed on their own. Scientist Mary Lou Jones used photographic identification data to estimate the calving interval for female gray whales that were seen during a 5-year period in Laguna San Ignacio. Her estimate based on re-sightings of these female whales was 2.11 years during the period 1977 to 1982. Biologist Sergio Gonzales of the UABCS whale research team developed a new estimate for calving interval of 2.48 years for the period 1996-2000 suggesting that fewer females are reproducing every other year and that the reproductive rate of the gray whale population is slowing down. These lower calf counts could indicate that some gray whale females are unable to obtain sufficient energy resources to conceive, or if pregnant to bring calves successfully to term, or their claves do not survive after birth*.	
AFA70	**CALVING STATISTICS.**	Note: The table supplied by the commenter does not display properly here. However, the 2008 thoroughly dealt with, and the current DEIS thoroughly deals with,

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	Table 21. Calf Abundance	information about population dynamics, including calving data (e.g., 3.4.3.1.5, Reproduction and Calf Production)
AFA71	*The calf count in 2007 was the lowest mid point count in 30 years in the San Ignacio Lagoon according to Mexican and US scientists.* *The annual count of northbound whales by the American Cetacean Society demonstrates the current situation.*[22] *A joint research and education project of UCSB's coal oil point reserve, Goleta + American Cetacean Society – Channel Islands + Cascadia Research Collective, WA + Marine Physical Laboratory, Scripps Institution of Oceanography, UCSD, La Jolla cites:-* *" In 2007 we observed a troubling, estimated drop-off of 46.8% in calves from the previous year, 2006. A similar percentage was reported from other primary, survey stations along the migration route. The confirmation has alerted scientists who are investigating climate changes and access to prey in the primary feeding regions off Alaska. Observed stress on the population points up the importance*	See response to previous comment.

[22] *http://www.learner.org/jnorth/images/graphics/gwhale/ACSLA_020408.gif*

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	of consistent monitoring and close collaboration between survey sites. [23]" AFA Int. does not intend to debate the calf statistics as there is no research done by NMFS on the extent of orca predation and no way of ascertaining the status of calves once they reach Russian waters. The pod sizes have changed and require in depth investigation as estimates appear to have been pushed upwards by fiddling with correction factors and size of pods.	
AFA72	**ORCA PREDATION.** The extent of orca predation has been ignored in the DEIS. Yet scientists from Monterey and Alaska are documenting mortality rates of up to 30% in the Gray Whale population in some years. Orcas are predating on juveniles as well as calves. Russian scientists details attacks on two and three year olds. California whale watching captains have seen fatal attacks on adult whales. Killer whales from Puget Sound have turned up in Monterey Bay for the sixth season in a row. Many observers believe this is an ominous sign that killer whale behaviour is changing. Matkin and Barrett-Lennard have identified three distinct lineages of killer whales. Marine mammal eating transient killer whales predate on gray whales. Heavy predation occurs in Monterey Bay and Unimak Pass. In their paper, [24] they document 18 observed kills observed at False Pass in 2003 and 2004 (May to early June). The paper documents a total of 165 mammal-eating transient killer whales were identified and the majority (70%) were encountered during spring (May and June). The diet of transient killer whales in spring was primarily gray whales.	In response to this and other comments, the new DEIS includes a discussion of predation range-wide (Subsection 5.1.3.8, Natural Mortality).

[23] *http://www.acschannelislands.org/2008ProjectDescrp.pdf*

[24] Fish.Bulletin 105:74-87 (2007) Ecotypic variation and predatory behavior among killer whales (Orcinus orca) off the eastern Aleutian Islands Alaska

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	At the 2005 Puget Sound/Georgia Basin Region Conference, Priority Conservation Areas (PCA) were identified on the border between British Columbia – Washington. The Strait of Juan de Fuca was identified as a key habitat for killer whales. Although no hunting will be permitted if the waiver is granted in the Strait of Juan de Fuca, nevertheless the number of transient orcas likely to be present in the area and their impact on the resident gray whale population has been ignored in the DEIS The DEIS is particularly deficient in any estimation of the extent of orca predation on gray whales. A project entitled:- *Determining the role of killer whales as apex predators is central to understanding the function and dynamics of marine ecosystems of the Aleutian Islands (AI), Bering Sea (BS), and Gulf of Alaska (GOA).* Wade et al. focused on Steller sea lions, not gray whales. Collaborative studies with the North Gulf Oceanic Society (NGOS) have identified a hot spot in distribution and abundance of transients around the western end of the Alaska Peninsula and in the eastern Aleutians, coinciding with the northbound migration of gray whales into the Bering Sea in late spring. Migrating gray whales have increased in abundance over the past three decades, providing a predictable seasonal food source which may have indirectly increased predation pressure on pinnipeds and other marine mammal species later in the summer. " *In the coastal waters of the Chukotski Peninsula, during the ice-free seasons of the years 1990 to 2000, Inuit hunters reported all of their observations of killer whale predation on marine mammals.(Melnikov & Zagrebin, 2005) Of 92 attacks on marine mammals, 66% were on gray whales, of these 23 resulted in successful; kills, 6 were unsuccessful and the outcome was unknown of the other 32.* [25] *" Killer whales may kill multiple gray whales. For example, when a pod of 12 killer whales were hunting in the area off Inchoun village on 5-10 August 1999, hunters noted six carcasses of gray whales killed by killer whales and beached after a storm.*	

[25] Mizroch 2006 MarEcoProgServ.

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	Of the killer whale attacks on gray whales reported by hunters when the result was known, nearly 80% of the gray whales were killed and 20% escaped."[26] *There is a reported loss of about 30% of the calves between the breeding lagoons and central California (Swartz, 1986). This needs to be investigated.*[27]	
AFA73	**STINKY WHALES**. The historic record demonstrates that contamination of gray whales has been recognised as a major problem at least since 1990. At the 1990 meeting – Report of the Special meeting of the Scientific Committee on the Assessment of Gray Whales, the following statement was made:- *" The Committee recommends that all strandings of gray whales throughout their range should if possible be investigated and samples collected to determine contaminant levels, including particularly animals from the Kodiak Island area. Schweder and Fleischer believed that such studies should investigate the effect on reproductive capacity where possible.'* IWC Ulsan, 2005 Plenary Agenda Item 4.3 and 15.2 [28] Table 5 documents the number of sightings, harassments and observed kills of known marine mammal prey species. In May-June 18 there were 18 observed kills of gray whales. Ac **Proposal.** A more comprehensive investigation should be taken for a number of reasons: The following is relevant to the Makah DEIS.	The 2008 DEIS discussed stinky whales with respect to human health (Section 3.16.3.2, Environmental Contaminants in Gray Whales). The new DEIS includes an updated discussion of stinky whales in the same subsection.

[26] Killer Whale Predation in coastal waters of the Chukotka Pensinsula. Marine Mammal Science 21(3) 550-556 July 2005 Melnikov & Zagrebin.

[27] Urban et al Review of Gray Whales in Mexican waters. J. Cetacean Res. 5(3) 281-295, 2003

[28] IWC/57/17

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	There is a compelling need to determine the cause of this phenomenon, as it could threaten both cetacean and human health, and could be an indicator of habitat degradation. Russian veterinarian Gennady Zelensky, head of the Chukotka Science Support Group says the phenol is the toxin which makes the whales stink. Phenol is carbolic acid, a highly toxic industrial solvent that smells distinctly like disinfectant. It is used and dumped in vast quantities throughout Siberia by oil refineries and diamond mines, in natural gas exploration and extraction and a host of other heavy industries that operate in the former Soviet Union's far eastern hinterlands with little oversight and nowhere to safely dispose of toxic industrial waste. *" Last summer, Zelensky participated in a study of phenol contamination in the salmon, sturgeon and whitefish of the great Amur River in eastern Siberia. For several years, the fishermen who ply the Amur have complained that their catches are dwindling and that many of the fish in their nets disgorge a chemical smell when cut opn. Every fall, when the brown water of the Amur begins to freeze, an eye-watering medicinal reeks sets in along the ice. The fishermen describe the smell as like the inside of a drugstore or health clinic.* *" Tests showed the fish of the Amur are heavily contaminated with phenol. That was no surprise, as the Amur is loaded with phenol, same as most major rivers that flow through the Russian Far east.* *" Zelensky says in August he tested for phenol in the blubber and livers of five freshly killed gray whales in Chukotka. Though none of them were stinky whales, all five tested positive for the solvent."*[29]	
AFA74	**RUSSIA –CONTAMINANTS – MEXICO – CONTAMINANTS ?** *" The Chukotka Science Support Group sampling is in the first phase of a study of contaminants in the Eastern North Pacific Stock of gray*	See response to previous comment.

[29] Survival, David Holthouse. New Times Inc. 2005

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	whales. The study was funded by the National Marine Fisheries Service to investigate the causes and potential human health effects of stinky whales. *" The situation is quite severe," says Dr. Vladimir Orlov, the Russian Federation's Minister of Natural Resources. " This is the region (Siberia and the Far East) where our industrial development is the heaviest. Sixty-nine per cent of Russian oil exploration is being conducted in this region, along with 78% of natural gas exploration, and 90 per cent of our natural gas extraction efforts. There is also heavy mining, timber and other chemical waste producing activities. Unfortunately, there are no special sites for hazardous chemical storage in this region that are well equipped."*[30] " *You look at the level of chemicals in most of our rivers in Siberia and it can be seen there are more toxins in the river than water*, " says Mikhail Krykhitin of the Amur Inland Basin Laboratory, an affiliate of the Russian Federation's Pacific Fishery and Oceanography Institute."[31] NMFS has not revealed, published or provided any information on the study funded by the agency. Phenol and other forms of industrial toxic waste, including PCBs, act as endocrine disrupters creating havoc with hormones resulting in greatly decreased rates of reproduction. NMFS has failed to carry out any studies which would identify whether the consistently low calf count is related to toxic contamination of the Russian waters.	
AFA75	**RUSSIAN NEEDS STATEMENT IWC 2007 ABORIGINAL SUBSISTENCE WHALING ANNEX D.**	Note: The graphic provided with the comment did not reproduce in this format but we considered the information provided and the associated comments.

[30] Ibid.
[31] Ibid

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	QuickTime™ and a TIFF (LZW) decompressor are needed to see this picture.	
AFA76	IWC Aboriginal Subsistence Whaling report 2006 indicates '*in relation to the ' stinky whale'* issue, there is a related gray whale study started in Mexico in March 2006 to obtain breath samples for chemical analyses from free swimming whales. Samples will also be obtained from free swimming gray whales in the fall, offshore the State of Washington (feeding grounds). The results of these studies will be made available to the Scientific Committee next year. ' No such information is available in the DEIS. Given that samples were to be obtained in Washington state, this research is particularly relevant and should be included in the DEIS. The same report states:- " *Mexico said that in the 2005 IWC Annual Report on page 102, the Russian Federation indicated that there is information that the winter habitat areas of gray whales in Mexico are chemically polluted."* None of this information has been provided in the DEIS. If, in fact, there is chemical pollution along the entire migration route then not	The 2008 DEIS discussed stinky whales with respect to human health (Section 3.16.3.2, Environmental Contaminants in Gray Whales). The new DEIS includes an updated discussion of stinky whales in the same subsection.

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	only should the cumulative impacts of the toxic load be investigated but any consumption of the Gray whale should be viewed as a potential health risk pending proper published studies.	
AFA77	**CHUKOTKA/MAKAH RELATIONSHIP.** In September 2005, Makah tribe biologist, Nathan Pamplin, visited Chukotka on a *" scientific exchange"* to evaluate the type of data they collected on landed whales and to evaluate the logistics of studying the *" stinky whale*" phenomenon that was raised during both the Aboriginal Whaling sub-committee and the Conservation sub-committee at IWC 57 in Ulsan, Korea. During the visit, a member of the Makah tribe took part in whaling which was claimed to have occurred in Russian territorial waters. Pamplin writes in an email to John Arum, lawyer, dated September 13, 2005 that " *the information that I learned will be shared with other US delegates to the International Whaling Commission. At IWC 58 I plan to discuss ways that the Russian Federation can increase the amount of data collected from landed whales, both in terms of understanding more about gray whales, in general, and to address specific concerns about " stinky whales*." No such data is evident in the DEIS. Although several studies by Pamplin are cited, none of the papers refer to *" stinky whales*" or any data collected by the Russian Federataion. The failure to provide information gained by the Tribe's biologist in the DEIS is a gaping hole in the document. As the Makah propose to consume any slaughtered whale, the concern surrounding Gray whale contamination must be discussed comprehensively in any DEIS. That the Tribe's own biologist, after visiting Chukotka on a " *scientific exchange*" has no research or information to contribute to the " *stinky whale* " issue is of major concern. Samples which were supposed to have come back from Russia to the US are not mentioned. Acivist groups who attempted to find out if NOAA had actually issued a permit to bring back samples have not been able to obtain relevant information.	Comment noted. The 2008 DEIS included all data available regarding stinky whales (Subsection 3.16.3.2, Environmental Contaminants in Gray Whales). The new DEIS includes updated information in the same subsection.

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	These samples are important research which should be documented in the DEIS.	
AFA78	***Pesticides, toxic contamination.*** The gray whale feeds primarily on benthic prey using suction to engulf sediments and prey from the bottom, then filtering out water and sediment through their baleen plates and ingesting the remaining prey. This feeding strategy often results in exposure to sediment associated contaminants. *Tilbury et al (1999) studied contaminants in gray whales. During migrations, prolonged fasting may alter the disposition of toxic chemicals within the whales' bodies. Gray whales feeding in coastal waters may be at risk from exposure to toxic chemicals in some regions. The higher concentrations of PCBs found in stranded animals compared to harvested animals may be due to the retention of organochlorines in blubber during fasting rather than increased exposure to these contaminants.* *The elevated concentrations of certain trace elements (e.g., cadmium) found in some tissues, such as kidneys, of stranded animals and the high levels of aluminium found in the stomach contents and tissues of harvested whales, compared to other marine mammal species is consistent with the ingestion of sediment by gray whales.* [32] Organochlorine (OC) pollutants are among the most widespread and persistent chemical contaminants present in the marine environment. (Tilburny et al/Chemosphere 47) 2002 555-564). These pollutants bioaccumulate in lipid rich tissues of marine mammals. Males cannot eliminate OC's as females do through gestation and lactation. (Wagemanna and Muier, l984. . Tilbury paper) Toxic and essential elements found in gray whales are of concern because of their toxilogical significance and possible accumulation in certain organs (eg. Kidney, brain) of marine mammals. Mercury is	Comment noted. The 2008 DEIS contained available information regarding contaminants in gray whales (3.16.3.2 Environmental Contaminants in Gray Whales). The new DEIS contains updated information in the same subsection.

[32] Status Review 1999

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	pephrotoxic in mammals, it has been suggested that aluminium may alter brain function. (Goyer, l986). (Tilbury paper). In the Tilbury et al study, tissue samples were collected from juvenile gray whales in their Arctic feeding grounds in the western Bering Sea, a relatively pristine area according to the authors. Concentrations of Ocs (PCBs, DDTs, hexachlorobenzene) selected non essential, potentially toxic elements (eg . mercury, cadmium) and essential elements (selenium) along with per cent lip were determined in tissue samples and stomach contents of these animals. Wolman and Wilson (l970) reported the presence of DDT's in 6 of 23 gray whales that stranded off San Francisco, California during both their northern and southern migrations. Schaffer et al (l984) reported concentrations of DDTs in blubber of a gray whale stranded in southern Claifornia in l976. Varanasi et all (l993, l994) reported chemical contaminant data for 22 gray whales that stranded along the west coast of the US from l988 to l991. The Tilbury paper compared OC levels in the juvenile subsistence whales with juvenile whales that stranded from l988 to l991 and found that the juvenile stranded animals had significantly higher mean concentrations of PCBs and DDTs than the juvenile subsistence animals. Researchers conclude that they would expect to find higher concentrations of OCs in gray whales that feed near urban areas than OC levels in animals that feed in more pristine waters. In l985, nine gray whales died within Puget Sound, Washington. Although the cause of death was not determined conclusively, there was speculation that the deaths were due to toxic chemical contamination. (Swartz l986 MMC) Washington Department of Fish & Wildlife in their Status Report for the Killer Whale, March 2004 cites studies which establish the transient and southern resident populations of the northeastern	

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	Pacific as among the most chemically contaminated marine mammals in the world (Ross et al 2000, Ylatalo et al 2001). " *This conclusion is further emphasized by the recent discovery of extremely high levels of SPCBs in a reproductively active adult female transient that stranded and died on Hugeness Spit in January, 2002. While alive, this whale was recorded most frequently off California thus its high contaminant load may largely reflect pollutant levels in prey from that region*. " According to the report, a primary factor in the decline of killer whales in the northeastern Pacific may be exposure to elevated levels of toxic chemical contaminants, especially organochlorine compounds. *'.. many organochlorines are highly fat soluble and have poor water solubility, which allows them to accumulate in the fatty tissues of animals, where the vast majority of storage occurs. (0'Shea 1999, Reijnders and Aguilar 2002). Some are highly persistent in the environment and resistant to metabolic degradation. Vast amounts have been producted and released into the environment since the l920s and l930s. The persistent qualities of organochlorines mean that many are ultimately transported to the oceans, where they enter marine food chains. Bioaccumulation through trophic transfer allows relatively high concentrations of these compounds to build up in top level marine predators such as marine mammals (O'Shea, 1999). … Organochlorines enter the marine environment through several sources, such as atmospheric transport, ocean current transport,. And terrestial runoff (Iwata et al.1993. Grant and Ross 2002)… Much of the organochlorine load in the northern Pacific Ocean originates through atmospheric transport from Asia (Barrie et al. 1992, Iwata et al. 1993, Tanabe et al 1994)."* The report recognizes the vulnerability of marine mammals to biotoxins. *" Killer whales are candidates for accumulating high concentrations of organochlorines because of their position atop the food chain and*	

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	long life expectancy. Their exposure to contaminants occurs only through diet. " Since Resident gray whales feed in Washington state on mysids and benthic organisms, the lack of any tests to establish levels of contaminants in these whales should not be considered grounds for asserting that eating the meat of gray whales is " *safe*" for the Makah tribe. As bottom feeders, gray whales are particularly susceptible and vulnerable to the exponentially growing contamination of the North Pacific, Bering, Chukchi, Beaufort Seas.	
AFA79	**RESIDENT WHALES.** The importance of protecting resident whales and their habitat/prey is highlighted by Earthwatch Institute in an article by Dr William Megill who has studied the gray whales for many years. He says " *the observed shift in the Bering Sea benthos, which may be due to long-term global warming induced effects, may now have begun to push whales further into secondary habitat in the Arctic and possibly into tertiary or even quaternary habitat in Baja California. If this is the case, then it is more important than ever to determine the significance of these new feeding niches if the grey (sic) whale is to remain off the Endangered Species List*." " *The degree to which seasonal resident gray whales should be managed as a unit separate from the overall gray whale population is unclear. The animals that feed in Pacific Northwest waters appear to make the southern migration to Mexico each year and therefore are part of the larger breeding population of gray whales. Depending on the stability of this group and how animals are recruited to this strategy, they may represent a unit that should be managed separately.* *" The management implications of seasonal resident whales has become controversial recently due to the resumption of whaling by the Makah tribe in northern Washington (Quan 2000). The management plan for the Makah hunt calls for targeting migrating*	In response to this and other comments, new research has been completed since 2008 on the PCFG. The results of that research and analysis of data are reported in the new DEIS (Subsection 3.4.3.4, Pacific Coast Feeding Group (PCFG) of Gray Whales).

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	whales but it is unclear how effectively current strategies would be in avoiding takes of seasonal resident whales. (Quan 2000). This study shows that many gray whales identified as early as March during the gray whale migration were animals that had been seen in previous years and stayed through the summer and fall. This would make it more difficult to effectively target whales that were not part of this small season resident group." [33] At the 2005 Puget Sound Georgia Basin Research Conference, biologist John Calambokidis of Cascadia Research said gray whales that ventured inland were more likely more vulnerable to shore-based hunters than those that swam farther offshore. He said the ones that stop in the Northwest tend to not have as many young as the larger population. This comment is important as there is no easy way that Makah hunters can determine whether a whale is a resident or a non-resident. Of primary importance in commenting on the resident whales is the following cite from the 9th Circuit [34] :- '*The crucial question, therefore, is whether the hunting, striking, and taking of whales from this smaller group could significantly affect the environment in the local area. The answer to this question is, we are convinced, both uncertain and controversial within the meaning of NEPA. No one, including the government's retained scientists, has a firm idea what will happen to the local whale population if the Tribe is allowed to hunt and kill whales pursuant to an approved quota and Makah Management Plan. There is at least a substantial question whether killing five whales from this group either annually or every two years, which the quota would allow, could have a significant impact on the environment.'*	

[33] Final report – Range and movements of seasonal resident gray whales from California to Southeast Alaska. Calambokidos et al, December 2000.
[34] Anderson v Evans, 9th Circuit.

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AFA80	**STRANDING DATA.** " Reports from a portion of the stock's range indicate that only 5 and 6 strandings were reported in 2002 and 2003, respectively. (C. Allen, NMFS-National Stranding Database pers.comm) " CITE SAR 2007 Stranding data is not current and therefore comment cannot be made without current data. The PBR value should not be set without this information and is a violation of s. 118 f the MMPA.	The stock assessment reports include stranding data from NMFS' stranding network and other sources as it is collated an analyzed. Similar to abundance data, the process of collating and analyzing data may result in a lag time.
AFA81	**PREY.** Although NMFS is strident in its efforts to persuade the public that the Gray whale is now a " *generalist feeder*" There is no current research to support the contention. 80% of their primary prey comes from the benthic biomass in the Bering and Chukchi Seas. The amphipods on which Gray Whales predate are severely affected by increased seawater temperatures and resulting loss of ice. Carl Safina, president of the Blue Ocean Institute explains the system with exquisite simplicity. Noting research that shows how diminished sea ice may be forcing gray whales to swim hundreds of miles farther north to find food Safina is reported in the Orange County Register saying: - ' *Sea ice in the northern Bering Sea formerly melted in April, releasing nutrients that fed single-cell plankton that bloomed, died and fell to the ocean bottom because it was too cold for animal plankton to graze on it. That created a rich biomass on the ocean bottom, feeding creatures eventually exploited by gray whales, walruses and diving ducks.* *'With sea ice melting sooner there is not enough sunlight to fuel the initial plankton bloom so early in the season. A lesser bloom of single-cell plankton comes later and the water is warm enough for zooplankton to come and graze off that plankton. Those zooplankton are eaten by fish that can thrive in the warmer water- and there's less to eat by the animals eaten by gray whales.*	In response to this and other comments, the new DEIS includes a discussion of the potential effects of climate change, including potential effects on benthic prey in the arctic (Subsection 3.4.3.6.11, Climate Change and Ocean Acidification).

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	" The food chain has shifted from one that created dense bottom fauna foraged by certain marine mammals and diving ducks to one foraged by fish. *" And the warming water also allows other fish to move in like Pollock to eat those smaller fish. So it goes from that top down, bottom-dominated system to a pelagic or ocean-water column, fish-dominated system."*[35] Dr. Liz Alter adds her concerns to the status of benthic prey and the changes in the marine ecosystem. " *Nearly all marine mammal species that depend on Arctic resources for prey will face impacts from climate change in the near future, and gray whales will be no exception. Gray whales feed on benthic amphipods and other small prey along shallow continental shelves in the Arctic by scooping up mouthful of benthic matter. Significant ecosystem-level changes in gray whale feeding grounds in the Bering Sea have already been documented (e.g. Grebmeier et al 2006). The feeding range of gray whales has also changed significantly since the l980's (Moore et al 2003) moving from feeding grounds in the Bering Sea to more northward areas above the Bering Strait. Unfortunately, there is currently no way to predict how the prey base that gray whales depend upon will change as the climate in the Arctic warms due to complex interactions between projected changes such as reduced ice cover, increased freshwater input, and changing ecological dominance. However, this uncertainty serves to emphasize the importance of continued and vigilant monitoring of the gray whale population as well as the Pacific ecosystems upon which they depend*."[36] Although the recent paper by Coyle et al [37] suggests that the decline in amphipod biomass is coincident "*increasing gray whale*	

[35] The Orange County Register September 1, 2007 Dan Joling Associated Press

[36] Dr S. E. Alter, Marine Mammal Fellow, NRDC, letter of support for Resolution AJR 49 to Assemblyman Pedro Nava, California Assembly, March 31, 2008

[37] Amphipod prey of gray whales in the northern Bering Sea: Comparison of biomass and distribution between the 1980s and 2002-2003. Coyle et al. Science Direct, Deep-sea Research Part II, March 7, 2007.

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	populations and were probably the result of top down by gray whales on the amphipod populations", an alternative hypothesis is also possible given that Gray whale population is not increasing but in decline. The study focuses on a comparison of the mid 80's and 2002-2003. 2002-3 was the post die-off period following a major population crash that removed at least 30% of the population. There was no SAR in 2003 or 2004. The 2005 SAR put the 2002-3 population at around l8, 000. So the hypothesis that " *increasing gray whale populations*" had caused the decline is questionable. According to Highsmith Coyle (1992) " *a similar if not greater decrease in amphipod biomass was documented from 1986 to l98*8." Both scientists claim that the amphipod biomass can take five to 100 years to recover. '*Specifically Highsmith and Coyle 1992 showed that the abundance and biomass of the amphipod community decreased during the 3 year period from l986-l988, resulting in a 30% decline in production. They noted that high-latitude amphipod populations are characterized by low fecundity and long generation times, and that large, long-lived individuals are responsible for the majority of amphipod secondary production. Therefore, a substantial reduction in the density of large individuals in the population will result in significant long term decrease in production'*[38] Bottom trawling has also been implicated in major changes in the benthic community. Gray whale population estimates in 1986 –l988 were 21,444 and 22,250 respectively. In 2004, the US Geological survey's Dr Hans Nelson reported that certain environmental stresses in the Chirikov Basin would negatively impact gray whales. " *Knowledge of the feeding habits of gray whales and the geological framework of which the habitat of amphipods depends suggest that any disturbance to the ecosystem could significantly reduce the gray*	

[38] Status Review, 1999

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	whale population within a few years. Calculations suggest that the Chirikov Basin provides a minimum of 6 per cent of the food supply for the California Gray Whale. Gray whales feed here for about 5 months before migrating south as Arctic sea ice advances; loss of the amphipod ecosystem would substantially reduce the whales' food supply. Such a loss of amphipod habitat could occur, for example, if sand is removed to support construction in Alaska or if the sand sheet is contaminated by petroleum spills. ' Ken Weiss, LA Times journalist, writes in an article July 6, 2007: - *' Scientists first thought that the gray whale population, which had been hunted nearly to extinction in the 1930s, had simply grown too large for its primary food source and eaten more than nature could provide. Such overgrazing was thought to have been responsible for the mass die-off in 1999 and 2000 that saw the population drop from 26,600 to about 17,400.* *' Now scientists suspect that the climatic changes in the Bering Sea played a role in the population plunge by reducing the whale's primary food; amphipods that appear to be affected by warming temperatures and vanishing sea ice.* *' These amphipods grow in tubes on sandy or muddy seafloors and cannot move around like many sea creatures. They count on bits of algae to come to them, or at least close enough so they can use their antennae to pull the food into their mouths.* *' One source is a confetti that rains down from shaggy mats of algae that grow on the underside of ice sheets at the ocean's surface. Another is brought by ocean currents, carrying a soupy mix of algae or plankton.* *' Both sources have diminished or been cut off as the northern Bering Sea has undergone a shift from a seasonally ice-dominated region to more of an open ocean dotted with thin ice that is quickly broken up by storms. And the basin's waters have warmed enough to allow new types of fish to migrate north, gobbling up the amphipods or competing with them for food.*	

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	" Whales are not the only animals struggling to adapt to these rapid changes. Researchers have also noticed dramatic declines in other species that feed on the bottom such as walruses and sea ducks.' In their paper detailing genetic research on the Gray whale,[39] Alter, Rynes and Palumbi say the Gray whales play a key ecological role in their Arctic feeding grounds, stirring up sediment that increases nutrient cycling in the ecosystem. ' *At previous levels, gray whales may have seasonally re-suspended 700 million cubic meters of sediment, as much as 12 Yukon Rivers, and provided food to a million seabirds,'* the authors write. ' *Decreased sediment reworking could dramatically change nutrient recycling, and create shifts in benthic species dominance.'* NMFS scientists acknowledge that a reduction in primary food supply was the cause of the population crash in 1999/2000. ' *We agree that the symptoms observed in this population in 1999 and 2000 are likely related to an overall reduction in nutritive condition of individuals within the population. We suspect that the dramatic nature of these events are the result of a synergistic interaction of lower overall food availability and reduced access to this already depleted resource caused by extensive seasonal ice."*[40]	
AFA82	**OIL AND GAS EXPLORATION**	In response to this and other comments, the new DEIS includes an updated discussion of oil and gas exploration throughout the range of ENP gray whales (Subsections 3.4.3.6.4, Oil Spills and Discharges, and 3.4.3.6.5, Offshore Activities and Underwater Noise).

[39] DNA evidence for historic population size and past ecoystem impacts of gray whale. S. Elizabeth Alter, Eric Rynes and Stephen R. Palumbi (2007)

[40] Marine Mammal Science Vol. 18, No. 1 2002 Gray whale calf production 1994-2000; are observed fluctuations related to changes in seasonal ice cover. Perryman et al.

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	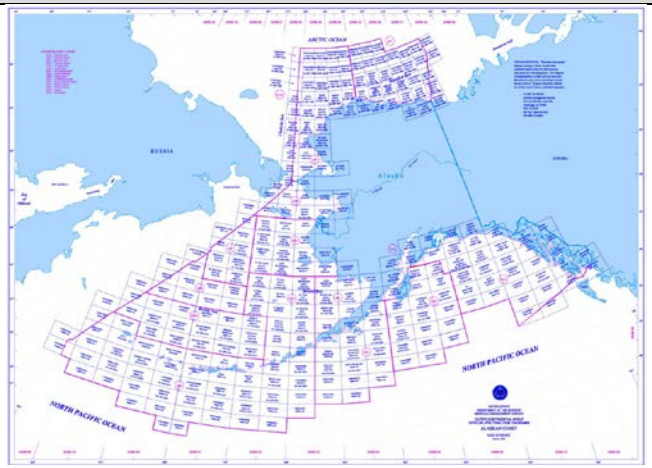 Table 22. Minerals Management Service Map " *Because of the potential for human-related impacts along migratory corridors and calving grounds off the south- eastern coast of Asia, as well as on the feeding grounds, project scientists expressed serious concern for the future survival of the population. They noted that the proximity of whales to seismic surveys, drilling, ship traffic, and other activities associated with offshore development could displace gray whales from essential feeding areas, and that oil spills, dredging, and other forms of pollution and construction could impact gray whale prey resources.* "[41] There is no difference in the risks that threaten the Eastern Pacific Gray Whale with similar consequences. The US Geological Survey estimates the Arctic has as much as 25 per cent of the world's undiscovered oil and gas. Russia reportedly sees the potential of minerals in its slice of the Arctic sector approaching $2 trillion. The US Government has recently sold 29.4 million acres in the Chukchi Sea for oil lease sales.[42] Within this lease sale is critical feeding habitat for the Gray Whale.	

[41] Marin Mammal Commission – Annual Report for 2002.
[42] http://www.mms.gov/ld/Offshore_Cadastre/Alaska/pdf/akindex.pdf

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	According to the US Minerals Management Service Environmental Impact Statement there is a 33 to 50 per cent chance of a 1000-barrel spill in the area. **MMS Alaska OCS Developed Leases** According to MMS are 173 operating leases in the Alaska OCS Region. See attached maps showing the locations of existing leases. **Chukchi Lease Sale 193** The Federal Government has recently sold 29.4 million acres in the Chukchi Sea for oil lease sales. Within this lease sale is critical feeding habitat for the ENPGW. There are two other lease sales scheduled for the Chukchi Sea in the MMS Artic Region 5 year plan for 2007-2012. The Chukchi Sea is the most productive high latitude ocean system in the Arctic. Its shallow and highly productive sea floor (benthic system) allows bottom-dwelling prey (crustacea, mollusks, etc) to flourish, creating a buffet for wildlife specialized to feed off the ocean floor, such as the gray whale. Gray whales are particularly at risk with the proposed development, yet the National Marine Fisheries Service (NMFS) has failed to accurately document those impacts in their DEIS. They fail to acknowledge the critical feeding habitat of the gray whale and the significant impact of seismic, drilling and other operations. Major changes in recent decades from arctic to subarctic conditions in the northern Bering Sea ecosystem has resulted in the loss of tight benthic pelagic coupling that previously supported high benthic standing stocks is resulting in the decline in prey of gray whales and other benthic feeders. Gray whales have responded by relocating their primary feeding area northward. Their calls have been recorded throughout the winter near Barrow, and local hunters report that gray whales are more numerous along the Alaskan North Slope than in the past. Gray whales moving north through the Bering Strait in June, following leads in the pack ice northward. Gray whales have been observed feeding off Barrow until well into October. (Annex K-Report of the Environmental Concerns SWG and Chairman's Report of the SC, 2005).	

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	One of the highly used feeding areas for the gray whale is the Hannah Shoal in the northeast corner of the leasing area, just off of the Barrow Point. (Moore S.E., DeMaster D.P., 1999) This is also the central location to be developed by industry. This critical feeding area was not discussed in the DEIS, or was an analysis done regarding the impact to gray whales of the loss of this primary feeding area. Disastrous impacts to Gray whales are bound to occur, particularly given the extensive pipeline infrastructure planned for the area. Look no further than the WP Gray whale and the consequences of similar infrastructure. Both gray whales and walrus are at great risk from pipeline development in the Hannah Shoal area (COMIDA Meetings, Nov. 2006). Both marine mammals are bottom feeders that rely on benthic species populations. The impact from pipeline infrastructure displacement is greatly minimized by the government. The impact to gray whales from infrastructure disturbance to feeding area may result in movement away from the area. If the whales continue to feed in the area, a greater risk is assumed with the impacts of bioaccumulation. For example, "drilling muds probably would not kill benthic organisms, but any heavy metals in them might be accumulated by benthic organisms, adding to the body burden in vertebrate consumers." 5-year plan DEIS at IV-65. The Hannah Shoal area is known to have annual ice keels (deep gouges into the sea floor). The impact of these on pipelines are not discussed in the DEIS. There is a risk for chronic, undetected oil leaks. Undetected leaks from underwater pipelines could impact gray whales by contaminating the benthic communities they feed on and subsequently accumulating in the whale. Additionally, if the whales continue to choose to feed in this area, then traffic and other impacts would be realistic. **Chukchi Lease Sales 212 and 221** **Beaufort Lease Sales 209 and 217** The MMS is also in the process of preparing an EIS for two Beaufort Sea and two additional Chukchi Sea oil and gas leases. The area to be evaluated for Beaufort Sea Sales 209 and 217, slated for 2009 and 2011 respectively, encompasses approximately 33 million acres, 3 to 205 statute miles off the northern coast of Alaska. The area stretches	

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	east from Barrow to the Canadian border. The area for sales proposed for the Chukchi Sea, Sales 212 and Sale 221 slated for 2010 and 2012 respectively encompasses approximately 40 million acres located 25 to 275 miles off the coast of Alaska. The proposed sale area stretches from north of Point Barrow to northwest of Cape Lisburne **Seismic Testing Chukchi and Beufort Seas** Given concerns about esonification affecting important life history functions for a large portion of a population in areas of special concern[43], the IWC Scientific Committee recommends that further research be undertaken to quantify the exposure and potential impact of noise from seismic surveys within these areas and their effect on important life functions. (Annex K- Report of the Environmental Concerns SWG and Chairman's Report of the SC, 2005). The Working Group recommended that impacts of seismic testing to bowhead, gray and Beluga whales must be determined. The group noted that the eastern North Pacific gray whales have a significant presence in the Beaufort and Chukchi Seas and should be considered when assessing seismic activities. (Annex K- Report of the Environmental Concerns SWG and Chairman's Report of the SC, 2005). MMS-permitted seismic surveys have been conducted in the Federal waters of the Beaufort and Chukchi seas since the 1960's with a peak in the 1980's. The seismic exploration program now under way in the Arctic Ocean originally incorporated standards requiring companies to shut down their seismic shoots when whales are exposed to dangerous sound levels, which can extend 50 miles from the vessel. After first agreeing to this, Conoco Phillips went to court in 2007 and had this requirement suspended – an ominous sign of things to come. They continued their testing without monitoring the 120db exclusion zone for cow/calf pairs that was required to mitigate impacts to the bowhead whale. Conoco argued, in part, that aerial monitoring of the Chukchi was too difficult.	

[43] Include restricted migratory routes, feeding grounds, breeding/nursery areas, resting ares, designated protected areas.

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	Conoco Phillips Alaska will be conducting shallow hazard and site clearance using acoustic equipment and airguns from August to October this year. The Arctic Slope Regional Corporation (ARSC) Energy Services (AES) – will be conducting shallow hazard site surveys between July and November 2008. Shell Offshore Inc. will also be conducting seismic testing from July to November 2008. **MMS OCS Oil and Gas Leasing Proposed Program for 2007-2012** The DEIS does not address the effects of the MMS OCS 2007-2012 five year plan on gray whale habitat. This is a shortsighted plan sacrificing America's Arctic. The 5-year plan proposes 21 sales nationwide, nine of which are off Alaska: two in the Beaufort Sea, three in the Chukchi, two in the North Aleutian Basin (Bristol Bay), and two in Cook Inlet. The Alaska OCS, with its infamous stormy seas, sea ice and remoteness, is one of the most difficult working environments in the world. Clearly, the risks of offshore oil are greater in Alaska than anywhere else in the nation. Marine ecosystems and marine mammals are at risk from oil spills, noise and other disturbance and habitat impacts, which would inevitably occur during exploration and development. Devastating spills that cannot be cleaned up in broken ice risk endangered bowhead, gray and other whales. Because of adverse conditions present in the Chukchi and Beaufort Seas most of the year, there is no oil spill response technology available to remediate an oil spill. Oil pollution causes direct mortality, increases susceptibility to diseases in fishes, inhibits phytoplankton productivity, and interferes with reproduction, development, growth, and behavior of many species. In addition to the dangers of oil pollution, a number of other potential pollutants are common in offshore oil operations, including the dumping of toxic drilling muds and other chemicals involved in drilling. An oil spill, regardless of its cause or the probability of such an accident, could adversely impact ENPGW and ENPGW habitat. While the impacts of such a spill are undoubtedly higher on the	

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	feeding and calving/breeding grounds, migrating whales may also be subject to the adverse effects of an oil spill. Such effects may: 1) Kill or debilitate marine mammals by matting and reducing the insulating quality of fur, by acute or chronic poisoning due to inhalation or ingestion of toxic compounds or ingestion of contaminated food, by irritation of skin, eyes, or mucous membranes, or by fouling of the feeding apparatus of baleen whales; 2) Kill, debilitate, or otherwise reduce the abundance or productivity (Availability) of important marine mammal prey species and/or species lower in the marine food web, and cause acute or chronic nutritional deficiencies including starvation; 3) Stress animals making them more vulnerable to disease, parasitism, and/or predation; 4) Interfere with formation of mother/young bonds and cause mothers to abandon their young; 5) Cause animals to abandon or avoid contaminated breeding areas, feeding areas, etc. and/or to concentrate in unaffected areas; 6) Attract animals to debilitated prey making them more vulnerable to contact with harmful compounds and oil and ingestion of contaminated prey (Swartz and Hofman 1991; Albert 1981; Geraci and St. Aubin 1990). Oil spills result in high mortality in benthic amphipods on which the ENPGW relies for its primary prey. According to the Minerals Management Service Environmental Impact Statement there is a 33 to 50 per cent chance of a 1000-barrel spill in the area. The estimated probability of an oil spill of greater than 10,000 barrels within the range of the ENPGW, for example, is 14% in southern California, 21-27% in the Bering Sea, 18-34% in the Gulf of Alaska, and 96% in the Chukchi Sea assuming commercially productive amounts of hydrocarbon are found in those areas (NMFS 1993). Similarly, the probability of one or more pipeline or platform spills of 1000 bbl and greater, and 10,000 bbl and greater in the Chukchi Sea	

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	as 92 and 57 percent, respectively (NMFS 1993). Furthermore, because Chukchi Sea oil will be transported by tanker, MMS (1992) predicts a 93 and 81 percent probability of one or more tanker spills of 1,000 bbl or greater and one or more tanker spills of 10,000 bbls or greater, respectively occurring outside of the Chukchi Sea. MMS (1992) also predicts additional tanker and oil spills along the western coast of North America.	
AFA83	**GRAY WHALES AND NOISE.** SC/A90/G5 (IWC Scientific Committee document) summarized the potential impact of offshore activities on gray whales. *" Considerable research on the possible effects of noise associated with offshore oil and gas development on gray whales has been conducted since the mid-1980's. Noise from oil and gas sources occurs at frequencies that overlap gray whale calling (and assumed) hearing frequencies, and therefore can probably influence whale behavior.* *In general, gray whales exhibited a 0.5 probability of avoidance to continuous noise levels that exceeded 120dB, and to intermittent noise levels that exceeded 170 dB re 1 u Pa. The distance at which whales responded to noise, and the type of response elicited, varied with the noise source, the locale and ongoing whale behavior.*[44] Gray whales are particularly sensitive to noise. Noise associated with industrial development, including oil and gas exploration, and other activities may adversely impact whales by: • interfering with or disrupting communications, feeding, breeding, or other vital functions; • causing animals to avoid or abandon important feeding area, breeding areas, resting areas, or migratory routes; • causing animals to use marginal habitat or to concentrate in undisturbed areas which in turn may result in crowding, over-	The 2008 DEIS included a section examining the impacts of noise on ENP gray whales (Subsection 3.4.3.6.5, Offshore Activities and Underwater Noise). The new DEIS includes a similar discussion in the same section.

[44] Report of the special meeting of the Scientific Committee on the Assessment of Gray Whales. 1990

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	exploited food resources, increased mortality, and decreased reproduction; • stress animals and make them more vulnerable to parasites, disease, and/or predation; and • attract animals making them more vulnerable to oil spills, hunting, or harassment In 1994, the US Marine Mammal Commission said: - "*noise associated with coastal development and related activities could cause whales to avoid and, if exposure to the noise is prolonged, to abandon areas that may be essential to calving, nursing, and breeding.* *Noise impacts can also interfere with mother/ calf communication and may cause whales to abandon their feeding grounds moving to less productive areas where the prey does not provide sufficient food for their energy needs.* In the California Coastal Commission staff report and recommendation in relation to the BHP BiIlliton proposed LNG Terminal, [45] and the issue of noise cites a NAA Fisheries (2007) Reports that: - ' *Bryant et al (1984:in Polefka 2004) recorded the abandonment by gray whales of a calving lagoon in Baja California, Mexico following the initiation of dredging and increase in small vessel traffic. Following the termination of the noise-producing operations, the cow-calf pairs returned to the lagoon. Underwater noise associated with extensive vessel traffic has been documented to have caused gray whales to abandon some of their habitat in California for several years (Gard 1974; Increasing levels of anthropogenic noise have been identified as a habitat concern for whales and other marine mammals because of its potential effect on their ability to communicate (Carretta et al 2001; Jasney et al 2005).* The IWC Scientific Committee has stated that " *noise producing activities (such as seismic surveys or sonar operations) should not be conducted in critical habitats at certain times of the year, which could*	

[45] CC-079-06 BHP Billiton Staff Report and Recommendation

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	greatly reduce exposing mothers and calves or breeding animals to high sound levels." IWC Scientific Committee meeting in Japan received evidence of behavioral disturbance from seismic surveys on the Piltun Feeding Ground – Western Pacific Gray Whale habitat. This evidence noted that whales appeared to have moved away from the region where seismic surveys were conducted, reoccupying the region from which they had been displaced when the surveys ceased. In 2001, the Scientific Committee strongly recommended that no seismic work be conducted while whales were present on their feeding ground. SC/54/BRGl4 provides strong empirical evidence in support of the Committee's concerns last year that seismic activities can have a major impact on gray whales. (IWC, 2002j, p.l82). The Committee also recommended that acoustic monitoring and behavioral observations be conducted to examine noise-related disturbance of these whales; it reiterated that this recommendation should be implemented. Further, the Committee was concerned to hear that additional seismic work is planned for 2002, 2003 and the future. It again **strongly recommended** (their emphasis) that no seismic work be conducted on or near the Piltun Feeding Ground while whales are present because: - • Gray whales in this area have shown strong avoidance responses to seismic survey activities during which they were displaced from important feeding habitat; • this region is the only known feeding ground for the population and is therefore critical to the continued survival of the population. • ' skinny ' whales including many reproductive females with calves have been observed in the area between l999 and 2001 and require maximum food intake during the summer feeding season;	

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	• the cumulative impacts of seismic operations on the health and survival of these whales, especially ' skinny ' animals, are unknown and of great concern. • All of the above recommendations should apply to the Eastern Pacific Gray Whale which has shown demonstrable avoidance to sonar pollution. The IWC Scientific Committee in Japan also recommended that the following additional research items be pursued in terms of the Western Pacific Gray Whale. • Benthic sampling and prey resource assessment in known foraging locations and in areas outside of the feeding ground. • simultaneous theodolite based behavioral observations and acoustic monitoring of industry related noise to examine possible disturbance. • satellite and radio telemetry work to determine movements on the feeding ground, migration pathway(s) and location of the wintering grounds (tag design and attachment protocols, however should first be assessed on eastern gray whales to evaluate safety and effectiveness *** Note . once again Eastern Pacific Gray Whales to be used for experimental purposes. • obtain DNA and photos to match to existing catalogues of such materials of any stranded or living animals. These same provisions should apply to the Eastern Pacific Gray whale. Swartz l986 MMC. page l3. G. Reetz *'discussed the Minerals Management Service (MMS) concern for the possible cumulative effects of human industrial activities on gray whales during their migration along the California coast. At this time MMS is considering funding a program to estimate the abundance of migrating whales in the Los Angeles area over time and methods to correlate population trends with human activities in the area.'* Swartz l986 MMC. Page l4. G Reetz summarized studies by Bolt, Beranek and Newman Inc. (Malme et al. l984) to investigate the	

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	potential effects of underwater noise from petroleum industry activities on migrating gray whales off central California. The researchers employed underwater playback of biological and non-biological (industrial) noise during the l983 migration to determine the reaction of migrating whales. '*Shore based observers, unaware of the playback schedule, tracked the movements of the whales past the playback site. The results indicate a correlation between the playback of industrial and some biological sounds (e.g. killer whale calls) and changes in the behavior of whales. Additional experiments included the use of a single seismic air-gun as a source of industrial noise. The whales responded to this disturbance as well*.'	
AFA84	**CLIMATE** According to a Survey on Ice Dependent Marine Mammals in Alaska [46] ' *Warming of the earth's climate is forecast to be greatest at the poles and the arctic region. In the Arctic, the challenge for species to accommodate such change is increased because of its large scale, the rapid rate at which the warming is predicted to occur, large inter-annual variation in climate, and the accelerated pace of human development. As a result, Arctic climate change is expected to have large effects. Higher ocean temperatures and lower salinities, contraction of seasonal ice extent, rising sea levels, and a host of other effects are certain to have significant impacts on marine species. For marine mammals adapted to life with sea ice, the effects of reduction in ice are likely to be reflected initially by shifts in range and abundance. Demographic changes associated with shifts in geographic range will likely e observed as decreased recruitment in areas of reduced sea ice.* *' Climate change will have substantial and possibly irreversible consequences on sea ice and ice-dependent marine mammals. The most serious threats to Arctic marine mammals are the loss of sea ice habitat and the unique ecosystem with which it is associated, and the*	In response to this and other comments, the new DEIS includes a discussion of the effects of climate change on ENP gray whales (Section 3.4.3.6.11, Climate Change and Ocean Acidification).

[46] Alaska Oceans Program, November 2004

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	related increasing human activities that result from easier access to the region. *' The ecosystem will likely be profoundly affected by the loss of sea ice because the presence of ice probably boosts the productivity in the Bering, Chukchi and Beaufort seas.* ***' Because ice habitat is so integral to the existence of the marine mammal species discussed in this paper (note not gray whales but the paper is obviously relevant to the population) the rapid loss of sea ice and the cumulative effects of other factors appear to set the stage for drastic reductions in population and ultimate extinction of marine mammal species."*** Gray whales are entirely dependent on climatic factors. Their prey, (amphipod *macrocephela)* needs very cold water to grow and survive. In 1999/2000, a third to almost half the Gray whale population died. Starvation appeared to be the major cause. *'Changes in the extent and concentration of sea ice in the Arctic Ocean over the past 20-30 years, coincident with warming trends, may alter the seasonal distributions, geographic ranges, patterns of migration, nutritional status, reproductive success, and ultimately the abundance and stock structure of some species (Tynan and DeMaster 1997a). Effects of climate warming on Eastern North Pacific Gray Whales are unknown, but studies of benthic-pelagic coupling in the Arctic and sub arctic (e.g. Grebmeier and Barry 1991) suggest depression of production in surface waters that may lead to reduced availability of gray whale prey in primary feeding areas of Alaska.'*[47] Research by Dr Elizabeth Alter et al (2007) identifies climatic shifts in the Bering Sea as a possible cause. Her paper indicates an historical abundance of gray whales between 76,000 and 118,000 whales. According to Dr Alter - " *the results of this study also strongly imply that the population crash observed in 1999-2001 was not a result of the population*	

[47] Status Review 1999

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	reaching a natural demographic plateau, but may have been caused by other forces such as climatic shifts in the Bering Sea."[48] The status of the benthic community on which the Gray whales depend is in decline. According to a recent study [49] a decline of nearly 50% from maximum values in the 1980s was measured. Amphipods feed on algae dropping from sea ice or carried by ocean currents. When the sea ice is diminished, the food web is disrupted. Whales are forced to feed on smaller amphipods which do not provide enough energy to complete the massive migration. Gray whales have one of the longest migrations of any whale. Females need enough food to sustain the 12,000-mile migration; to give birth and to feed their young. In their feeding grounds, the Bering and Chukchi Seas, El Nino events combined with global warming have increased the seawater temperature and ensured that sea ice is disappearing fast.	

[48] letter in support of AJR 49

[49] Amphipod prey of gray whales in the northern Bering Sea: Comparison of biomass and distribution between the 1980s and 2002-2003. Coyle et al Science Direct Deep-Sea Research Part II 7 March, 2007

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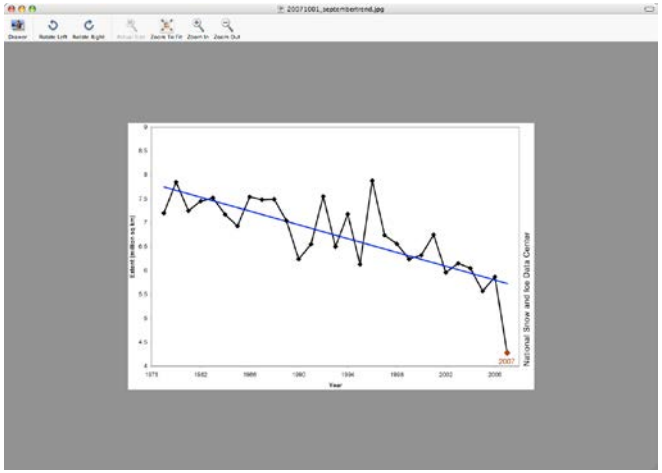
AFA85	QuickTime™ and a TIFF (LZW) decompressor are needed to see this picture. Table 23. Annual Sea Ice Minimum	Note: The graphic provided with the comment did not reproduce in this format but we considered the information provided and the associated comments.
AFA86	 Table 24. National Snow and Ice Data Center Graph.	

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AFA87	The extent of ice melt is so dramatic that the current decline exceeds the past records for the lowest ice periods in the 1930s and 40s. In 2005, scientists estimated the decline in ice amounted to approximately 1.3 million square kilometres – an area roughly twice the size of Texas. In 2007, an additional 180,000 square kilometres, an area roughly the size of Florida, had disappeared. A secondary warming effect is caused by the oceans absorption of a great deal of the sun's energy. As the sun begins to set in autumn, the heat stored in the ocean is released back into the atmosphere which increases air temperatures, thus decreasing sea ice. 2007 is the sixth consecutive year of melting sea ice in the Arctic with scientists predicting a new and steeper rate of decline. Gray whales are specialist feeders. With no adequate substitute prey, their future survival is grim.	
AFA88	**COMPARISONS BETWEEN DEMISE OF WESTERN PACIFIC AND EASTERN PACIFIC WHALES.** Tow NMFS gray whale scientists, Robert Brownell and David Weller (Southwest Fisheries Science Center in La Jolla) submitted a paper to IWC 2002 arguing against the carrying capacity theory. Both men have worked extensively with the Western Pacific Gray Whale. They claim that overgrazing of feeding grounds is not the reason for the drop in numbers as with less than l00 whales, there is unlikely to be any lack of prey. They suggest that more global or ocean wide changes may be influencing the availability of, or access to primary prey for numerous large whale populations. At a meeting of l0 other whale experts of the Society of Marine Mammology in Hawaii in l999, photographs of skinny whales from both Eastern and Western populations were shown. These photos demonstrated protruding shoulder blades, depressions behind the head, and a pronounced ridge or visible bulge along the lateral flank.	The 2008 DEIS examined the mass strandings of ENP gray whales in 1999-2000 and the various theories regarding the causes, including the relationship to prey and sea ice (Section 3.4.3.4.2, Stranding Data).

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	The scientists concluded these whales were starving. The two scientists hypothesized that changing weather patterns may be affecting sea ice, which would mean that feeding grounds are not as accessible to the whales. They suggested that some sort of " large scale ocean basin" climatic event affected both sides of the North Pacific Ocean in the late 90's and changed the availability of food for both Eastern and Western Pacific gray whales in the same way. ++++++++++++++++++++ One of the first casualties of climate change in the Arctic is likely to be the Gray whale. It is vitally important that the habitat of resident whales in Canada, Oregon, Washington and California be protected to ensure survival of the species. On 25th July, a telephone conference call between NMFS scientists from SWFC, members of the Ocean Protection Council, California Assemblyman Pedro Nava and two representatives of the California Gray Whale Coalition, revealed key facts in relation to climate change. Wayne Perryman, a scientist with NMFS made the following comments which are contained in an email from Ben Turner, staffer to Assemblyman Pedro Nava: - Email from Ben Turner, 26/7 *' It was a really interesting discussion and it raised a number of issues. One of the important things that I think came out of it was the emphasis on climate change, changing food sources and associated differences in habitat.* *Aside from the economic impact that you mentioned, I'm not sure if we were all still on the phone or not, but Wayne emphasized that the gray whale is a keystone species in terms of reflecting the health of sub arctic ecosystems especially in regard to the benthos. Additionally, the gray whales feeding on benthic amphipods has important beneficial side effects in terms of bringing smaller invertebrates to the surface for feeding by marine birds, and adding nutrients to the system by defecating at various levels in the water*	

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	column. The gray whale's behaviors and obviously their survival, has serious implications throughout the food web.' Professor Stephen Palumbi, Stanford University, in a letter to California Assemblyman Pedro Nava, in support of Resolution AJR 49 states: - "*A return to endangered status is reasonable for gray whales for another reason - the future of this population is thrown into doubt by the impact of global warming. Gray whales feed almost exclusively on cold-water bottom-dwelling crustaceans in the Bering Sea and northward. In the last 15 years, substantial changes in Arctic ecosystems have changed the feeding grounds of the gray whale, driving them further north than in past decades. These shifts have been correlated with observations of emaciated, starving whales and high calf mortality in some years, and have been linked to the wash of warm water from the Pacific into former gray whale feeding areas. Gray whales have been moving north as a result, having to migrate further from Mexican calving grounds each year. As they seek to feed in more northern waters where sea ice is retreating, gray whales may find themselves intersecting large oil and gas leases proposed in the shallow water Chuckchi and Barents Seas. The combination of climate change and petroleum industrialization may pose strong limits on gray whale feeding in the future. The lack of protection as an endangered marine mammal may limit efforts to ensure access of the gray whale to adequate feeding grounds as the Arctic climate changes*. " Dr Elizabeth Alter, Marine Mammal Fellow, Natural Resources Defense Council in a letter to California Assemblyman Pedro Nava, in support of Resolution AJR 49 writes: - " *In addition to threats along the migratory route, gray whales also face an uncertain future with regard to their prey base or food supply. Nearly all marine mammal species that depend on Arctic resources for prey will face impacts from climate change in the near future and gray whales will be no exception. Gray whales feed on benthic amphipods and other small prey along shallow continental*	

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	shelves in the Arctic by scooping up mouthfuls of benthic matter. Significant ecosystem-level changes in gray whale feeding grounds in the Bering Sea have already been documented (e.g. Grebmeier et al 2006). The feeding range of the gray whales has changed significantly since the l980s (Moore et al. 2003) moving from feeding grounds in the Bering Sea to more northward areas above the Bering Strait. Unfortunately, there is currently no way to predict how the prey base that gray whales depend upon will change as the climate in the Arctic warms due to complex interactions between projected changes such as reduced ice cover, increased freshwater input, and changing ecological dominance. However, this uncertainty serves to emphasize the importance of continued and vigilant monitoring of the gray whale population as well as the Pacific ecosystems upon which they depend."	
AFA89	**LEGAL** AFA Int. is an IWC NGO. Since 1996 when the US delegation first brought the request for a quota on gray whales to the IWC, this organization has lobbied and taken legal action to stop any slaughter by the Makah Tribe. AFA Int. believes that if a waiver is granted under the MMPA, at the domestic level other tribes could seek the same rights (see Judge Franklin Burgess opinion below) and a precedent will be set internationally which will see the opening up of new categories of whaling. Excerpt from judgment of United States District Court Western District of Washington at Tacoma. No: C98-5289FDB Order Granting Defendant's Motion for Summary Judgment. Metcalf et al v. Daley et al. " ***Precedent.*** *The plaintiffs make a good point. The EA concedes that approval of the Makah hunt could encourage other Tribes to seek to exercise aboriginal rights to hunt whales. While the EA notes (and relies heavily upon) the fact that the Makahs are the only tribe in the United States with a treaty expressly guaranteeing the right to*	Consistent with this comment, and the ruling in *Anderson v. Evans*, the 2008 DEIS examined the potential for authorization of a gray whale hunt to have precedential effects on hunts for marine mammals in the United States and whaling world-wide (Section 4.17, National and International Regulatory Environment). The musings of a NMFS employee in a 1996 e-mail regarding the legality of commercial sale of whale products by the Makah Tribe are hardly dispositive. The Whaling Convention Act prohibits commercial whaling by U.S. citizens, as does the MMPA.

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	whale, it glosses over the fact that whale hunting may be deemed protected under less specific treaty language. " Email sent to Chief, General Counsel Fisheries on May 30, l996 Mhayes.hq.noaa.gov. Cc Kevin Chu@hq.noaa.gov, Elizabeth.R. Mitchell@hq.noaa.gov Scott_Keep@-interior-cmm@ios.doi.gov from Sandra Ashton sashton@ios.do.gov headed subject: Makah. Message reads: " Well the real question here is whether we can reassure the opponents of Makah whaling that their treaty prohibits them from ever engaging in international commerce. THIS IS PROBABLY NOT SOMETHING WE CAN SAY (their emphasis). From what you say, members of the tribe could (if the moratorium were lifted and the CITES list revised THESE ARE BIG IFS) export whale meat and products to a foreign country. LIKELY SO. Or the tribe could sell meat to an intermediary in the US for export. IF THEY COULD SELL DIRECTLY, THEY COULD SELL THROUGH AN INTERMEDIARY.	
AFA90	Internationally, It is highly probable that Japan will declare its coastal people " *indigenous*", seeking the same rights as the Makah Tribe to kill whales for cultural and ceremonial purposes under domestic legislation. AFA Int. notes there is no legal advice in the DEIS which indicates any likely scenario internationally as a result of any waiver. Given that the implications of a waiver for the Makah have been a topic at IWC for some years, the omission of any in-depth legal advice in the DEIS which supports the Government's claim there will be no impacts can be taken with a grain of salt.	The 2008 DEIS examined this possibility and found insufficient evidence to support the expectation that the IWC would grant an aboriginal subsistence whaling quota to Japan's coastal people (Subsection 4.17, National and International Regulatory Environment). The new DEIS describes subsequent deliberations in the IWC regarding Japan's request (Subsection 4.17, Regulatory Environment Governing Harvest of Marine Mammals).
AFA91	The DEIS fails to detail the fact that IWC Scientific Committee is constructing an Aboriginal Subsistence RMS which is focused on the Gray whale as the target species. The Scientific Committee relies on the evidence provided by member governments in making assessments and setting quotas.	In response to this comment, the new DEIS describes efforts of the IWC to develop an aboriginal subsistence whaling scheme (Section 3.17.1, Introduction).
AFA92	It is abundantly obvious from the research undertaken in this comment document that the Gray whale cannot sustain any Aboriginal RMS or the current quotas which are unsustainable. The US government has an obligation to inform the IWC Scientific	All of the assertions and concerns raised in this comment are raised and addressed elsewhere in this comment letter.

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	Committee that the NMFS agency has received no funding for Gray whale research since 2000 and that the PBR is highly inflated and population estimates are not worth the paper they're written on. It is of grave concern to AFA Int. that the IWC Scientific Committee has not been informed of the true state of the population. The lack of any serious attempt to address the impact internationally is a major flaw in the DEIS. AFA Int. notes the judgment in the Ninth Circuit[50] in relation to the precedent which a waiver may create. *" The 1997 IWC gray whale quota, as implemented domestically by the United States, could be used as a precedent for other countries to declare the subsistence need of their own aboriginal groups, thereby making it easier for such groups to gain approval for whaling. If such an increase in whaling occurs, there will obviously be a significant impact on the environment.* *" The EA does not specifically address the impact of the quota on any IWC country besides the United States.* *" … we cannot agree with the agencies' assessment that because the Makah Tribe is the only tribe that has an explicit treaty-based whaling right, the approval of their whaling is unlikely to lead to an increase in whaling by other domestic groups. And the agencies' failure to consider the precedential impact of our government's support for the Makah Tribe's whaling in future IWC deliberations remains a troubling vacuum. "* The '*troubling vacuum* ' continues with the current Makah DEIS. Page 5 of the Tribe's Feb. 11, 2005 application notes the Makah hunted grays "*as well as other species*." Several other sources mention the tribe's traditional interest in humpbacks and one notes its preference (see PBS interview available at http://www.pbs.org/newshour/bb/environment/july-dec98/whaling_10-21.html).	

[50] No. 02-35761 D.C. No. CV-02-00081-FDB Anderson v. Evans

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	It is discomfiting that the DEIS reviews the status of ESA listed animals, including humpbacks, in section 3.5.3.2.1. There are no clear undertakings in the DEIS that any Makah waiver or the precedent created will not lead to waivers for other whale species. The same judgment states: - *' An EIS weighs any significant negative impacts of the proposed action against the positive objectives of the project. '* AFA int. contends there has been minimal attempt in the DEIS to portray the significant negative impacts of any waiver. Circuit Judge Gould with whom Judge Hill and Berzon concurred writes in his judgment: - *' The Defendants (government) argue that, because the IWC was given the power to adopt quotas in 1946, the Tribe's quota approved in 1997 should be considered a right under the 1946 Convention that pre-dates the MMPA.* *' We disagree. The 1997 Schedule was adopted more than twenty-four years after the MMPA became effective. Section 137(a) (2) exempts only international treaties that pre-date the MMPA, without also exempting amendments to those treaties. If Congress wanted to exempt subsequent amendments, then Congress could have done so explicitly. But Congress did not do so. That Congress did not intend to exempt subsequent amendments is clear when s.1372 (a) (2) is considered alongside the mandates of s. 1378 (a) (4). Section 1378 (a) (4) requires " the amendment of any existing international treaty for the protection and conservation of any species of marine mammal to which the United States is a party in order to make such treaty consistent with the purposes and policies of this (Act)." 16 U.S.C. s.1378 (a) (4). Far from intending amendments of international treaties to escape the restrictions of the MMPA moratorium by relating back to the treaties' pre-MMPA inception, Congress mandated that existing treaties be amended to incorporate the conservation principles of the MMPA. It would be incongruous to interpret s. 1372 (a) (2) to exempt the amendments that were mandated by s. 1378 (a) (4). And, if we accepted the defendants' view, then we would read the MMPA to disregard its conservation*	

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	principles whenever in the future the IWC made unknown decisions for unknown reasons about the killing of unknown numbers of whales. We do not believe that Congress subordinated its goal of conservation in United States waters to the decisions of unknown future foreign delegates to an international commission. ' ***And on the critical question: - ' If the MMPA's conservation purpose were forced to yield to the Makah Tribe's treaty rights, other tribes could also claim the right to hunt marine mammals without complying with the MMPA. While defendants argue that the Makah Tribe is the only tribe in the United States with a treaty right expressly guaranteeing the right to whale, that argument ignores the fact that whale hunting could be protected under less specific treaty language. The EA prepared by the federal defendants notes that other Pacific Coast tribes that once hunted whales have reserved traditional " hunting and fishing" rights in their treaties. These less specific " hunting and fishing " rights might be urged to cover a hunt for marine mammals Although such mammals might not be the subject of " fishing", there is little doubt they are " hunted."*** AFA Int. emphasis. And further in the judgment: - *'.. the Tribe asserts a treaty right that would give the Tribe the exclusive ability to hunt whales free from the regulatory scheme of the MMPA. Just as treaty fisherman are not permitted to " totally frustrate… the rights of the non-Indian citizens of Washington " to fish, Puyallup Tribe v Dept. of Game of Wash., 433 U.S. 165, 175 (1977) (Puyallup III) the Makah cannot, consistent with the plain terms of the treaty, hunt whales without regard to processes in place and designed to advance conservation values by preserving marine mammals or to engage in whalewatching, scientific study and other non-consumptive uses. See Wash.v.Wash. Commercial Passenger Fishing Vessel Ass'n, 433 U.S. at 658. The Supreme Court has recognized that regulation for the purpose of conservation is permissible despite the existence of treaty rights.* *" The MMPA will properly allow the taking of marine mammals only when it will not diminish the sustainability and optimum level of the resource for all citizens. The procedural safeguards and conservation principles of the MMPA ensure that marine mammals like the gray*	

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	whale can be sustained as a resource for the benefit of the Tribe and others.'	
AFA93	A recent Resolution in the California Assembly and Senate (AJR 49) underlines the value of the gray whale to all Americans, not just the Makah Tribe. According to the 9th Circuit judgment, it is a NEPA requirement that the wishes of the people of California and all Americans must be taken into account by NMFS in this DEIS.	The purpose of a DEIS is to examine the effect on the human environment of a proposed action and alternatives. The 2008 DEIS examined impacts of the authorization or denial of the Tribe's request on social relations (Section 4.8, Social Environment)
AFA94	**CALIFORNIA ASSEMBLY AND SENATE PASS RESOLUTION** **From:** Mann, John **Sent:** Tuesday, July 15, 2008 3:21 PM **To:** Mann, John **Subject:** California Legislature Sends Strong Message to President Bush & Congress Calling for Increased Protection for California Gray Whale-Resolution by California State Assemblymember Pedro Nava  **For Immediate Release Contact**: John Mann July 15, 2008 (805) 483-9808 **California Resolution Calling for Increased Protection for California Gray Whale** **Submitted to President Bush and the United States Congress** **SACRAMENTO** – Assemblymember Pedro Nava, Chair of the Joint Committee on Emergency Services and Homeland Security and the	We recently considered a petition to list ENP gray whales under the Endangered Species Act and concluded that a full status review was not warranted (75 FR 81225, Dec. 27, 2010). Notwithstanding the state assembly resolution cited here, we have not received a subsequent petition to list ENP gray whales under the ESA. In any event, we have continued to intensively research and monitor the status of the ENP gray whale population (see Attachment 3 to this memo for a detailed list of research and monitoring activities) and contribute to and participate in evaluations of ENP gray whale status through annual IWC Scientific Committee deliberations.

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	legislature's representative on the California Ocean Protection Council announced today that his Assembly Joint Resolution 49 calling on the United States Congress, the President, and the National Marine Fisheries Service to take action to protect the California Gray Whale cleared its final hurdle by passing the California State Assembly yesterday on a bi-partisan 56 to19 vote. The resolution has been sent to President Bush, the Congress of the United States and the National Marine Fisheries Service. "I am pleased that my colleagues in the Assembly and Senate have joined me in asking Congress, President Bush, and the National Marine Fisheries Service to take immediate action to protect the California Gray Whale," said Nava. "This magnificent marine mammal is again facing a number of threats to its existence and it is imperative that we act to provide it with as much protection as possible so that it will be here for future generations." AJR 49 requests the United States Congress and the President of the United States to call upon the National Marine Fisheries Service to undertake an immediate and comprehensive assessment of the California Gray Whale, and requests that they change its status to endangered. This revised listing will provide comprehensive protections for the Gray Whale as it travels from its breeding grounds in Mexico to its feeding grounds in the Arctic. The California Gray Whale was placed on the endangered species list in 1970, but was removed in 1994 after it was believed that the population had recovered. However new scientific evidence indicates that historic populations were up to five times their current numbers. The Gray Whale experienced a population collapse in 2000 in which up to 1/3 of the population died off and recent observations indicated that they may be in the midst of another die off. Current threats to the Gray Whale's survival include climate change, oil and gas exploration and leases in the Bering and Chukchi Sea feeding grounds, noise from seismic operations, military and non-military sonar, liquefied natural gas terminals planned along the whale's	

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	migration route, bottom trawling, pollution, and other changes in ocean conditions that have drastically reduced their food supply. "California's coastline and the marine environment are precious and need to be protected for our children and grandchildren. This resolution will send a strong message to Congress and the President that we need to take action now to save the Gray Whale," said Nava. #### **RESOLUTION TEXT.** WHEREAS, Each year, the California gray whale (Eschrichtius robustus of the Eastern North Pacific stock) migrates along the California coast to feeding grounds in the Arctic, a journey of 8,500 to 11,000 miles; and WHEREAS, The California gray whale is important for public education, recreational value, aesthetic appeal, economic significance, and scientific interest to the people of California; and WHEREAS, Whale watching contributes to local economies in direct revenues and in the overall economic well-being of coastal communities, including the creation of jobs; and WHEREAS, Whale watching generates tens of millions of dollars in California annually; and WHEREAS, The California gray whale migrates past one of the most heavily industrialized coastlines in the world, exposing the California gray whale to marine pollution, marine vessel traffic, industrial noise, activities associated with the development of the outer continental shelf resources, fishing entanglements, bottom trawling, industrial development, and military and nonmilitary sonar activity; and WHEREAS, Marine mammals, including the California gray whale, are vulnerable to underwater sound, including high-intensity mid-frequency sonar systems used off the California coast; and WHEREAS, These sonar systems blast across large areas with levels of underwater noise loud enough to have resulted in deaths of marine mammals in incidents around the world; and	

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	WHEREAS, The significant threats posed by global warming, melting sea ice, and the impact of increased sea water temperature in the Arctic feeding grounds of the California gray whale have very serious implications for the species; and WHEREAS, The federal government placed the gray whale on the endangered and threatened species list in 1970 when its estimated population was approximately 12,000 and removed it in 1994 when the population rose to 23,000; and *WHEREAS, Prewhaling population estimates used as a factor in determining species recovered status of the gray whale are now known to be erroneous and account only for a fraction of actual historical populations; and* WHEREAS, A major collapse in 1999 and 2000 is estimated to have wiped out one-third to almost one-half of the population; and WHEREAS, There has been no proper population estimate published by the National Marine Fisheries Service since 2001; and WHEREAS, There is no habitat protection for the Pacific Coast Feeding Aggregation in California, Oregon, or Washington State; and WHEREAS, There are inconsistencies in the protection states give to gray whales; and WHEREAS, Oregon lists the gray whale as endangered; and WHEREAS, Washington lists the gray whale as sensitive; and WHEREAS, California *, by law, defers to the federal government and* lists the gray whale as recovered; now, therefore, be it Resolved by the Assembly and the Senate of the State of California, jointly, That the Legislature respectfully requests the United States Congress and the President of the United States to call upon the National Marine Fisheries Service to undertake an immediate and comprehensive assessment of the California gray whale. This assessment should include all current research covering the migration routes, population dynamics, and mortality of the California gray whale, and the impacts of threats to the California gray whale, including the	

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	impact of global warming on critical feeding grounds; and be it further Resolved, That the National Marine Fisheries Service publish, and make available to the public, the results of the comprehensive assessment of the California gray whale; and be it further Resolved, That, if the results of the comprehensive assessment or the body of scientific evidence warrants it, the *National Marine Fisheries Service* is requested to change the status of the gray whale to endangered; and be it further Resolved, That the Chief Clerk of the Assembly transmit copies of this resolution to the *National Marine Fisheries Service* , the President and Vice President of the United States, the Speaker of the House of Representatives, the Majority Leader of the Senate, and to each Senator and Representative from California in the Congress of the United States.	
AFA95	********** Anderson v Evans notes the NEPA standards for determining the "intensity" of the action under review (pages 487-488). The 6th enumerated criteria are "*The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration*." Clearly, the 6th criteria of NEPA is highly relevant in this matter and has not been adequately dealt with in the DEIS.	The 2008 DEIS examined the potential precedential effect of authorizing a Makah gray whale hunt (Subsection 4.17, National and International Regulatory Environment).
AFA96	NEPA "Intensity" criteria number 9 which is "*The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the ESA'* must be taken into account. Although Gray whales are no longer listed under the ESA, the northern portion of the Gray whales' migratory route is under constant and increasing serious threat due to climate change. These factors introduce enough uncertainty to invoke the precautionary principle in a US court.	As the comment acknowledges, ENP gray whales are not listed under the ESA. The new DEIS examines the potential for a Makah hunt to affect endangered WNP gray whales (occurs throughout Section 4).

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AFA97	In relation to the Treaty of Neah Bay, Article 4 raises questions which NMFS has not answered in spite of written questions from AFA Int. *ARTICLE 4* *The right of taking fish and of whaling or sealing at usual and accustomed grounds and stations is further secured to said Indians in common with all citizens of the United States.* Article 4 does not specify gray whales and therefore, the question arises. Will a waiver for gray whales set a precedent for other whale species, as the Treaty language is not specific? These questions were asked by AFA Int. of NMFS and we received a response which did not attempt to address the question.	The request currently being considered by NMFS is a hunt only by the Makah Tribe and only of ENP gray whales (Subsection 2.3.2.2, Gray Whale Hunt Details). Hunting by anyone other than Makah tribal members or of any marine mammal species other than gray whales would require a separate rulemaking process.
AFA98	**SEADUCKS AND GRAY WHALES.** When commercial whalers in the 19th century radically reduced the number of gray whales migrating up and down the California coast, other species suffered from their loss, sometimes in surprising ways. One such species was the California condor, which historically fed upon the occasional dead beached whale. It was a feast no less welcome than whale falls are to abyssal sea life. With most grays falling to harpoons rather than nature, the birds lost a key source of food. It was just one more factor that helped push the condor to the brink of extinction. *' Feeding by gray whales provides nutrient subsidies from benthic marine communities to terrestrial ones, including food subsidies for at least four species of seabirds that feed on benthic crustaceans brought to the surface by gray whale feeding'; say Alter, Rynes and Palumbi. ' We calculate that a population of 96,000 whales could provide food subsidies to 1.03 million birds. In addition, gray whales*	The purpose of an EIS is to develop information for the decision-maker and the public, in particular information about the difference in impacts on the human environment between the proposed action and the alternatives, including no action. There are no alternatives considered in the 2008 DEIS, nor has anyone suggested there could be an alternative, that would increase the gray whale population to 96,000 individuals. The 2008 DEIS explored the potential direct effect of a Makah whale hunt on seabirds (Subsection 4.5, Other Wildlife). It did not explore the potential for indirect effects through a reduction in prey (whale carcasses) or changes in benthic disturbance (from feeding gray whales). This is because the 2008 DEIS concluded there would be a negligible change in the numbers of whales (and hence whale carcasses) under any of the alternatives (e.g., Subsection 4.4.2.1, Change in Abundance and Viability of the ENP Gray Whale Stock), and there would be a negligible change in the benthic environment under any of the alternatives (e.g., Subsection 4.3.3.2.2, Benthic Environment).

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	may have provided an important food source for predators and scavengers such as orcas and California condors. '[51] AFA Int. believes the ecological link between Gray whales and diving sea birds must be explored. With catastrophic declines in benthos feeding sea birds documented, it is highly probable that there is a relationship between the declining population of Gray whales and major declines in the bottom feeding bird populations.	
AFA99	In their paper,[52] Anderson and Lovvorn suggest that gray whale feeding may have increasing influence on the foraging patterns and trophic relations of a range of bottom-feeding vertebrates. The paper is the first report of a feeding association between a cetacean and bottom-feeding birds, namely a migrating gray whale and diving sea ducks. Gray whales have been observed returning annually in Washington State to feed mainly on ghost shrimp. " *Suction sieving by gray whales creates elliptical pits in bottom sediments that are typically 10cm deep and up to 5 m2 in area. Such excavations likely enhance short-term foraging profitability for avian benthivores by exposing or dislodging infauna, and by attracting invertebrate scavengers that are also eaten by birds. …. Although gray whales remove much of the prey biomass within feeding its, the fraction of infauna that is dislodged and not consumed by gray whales is typically valuable to marine birds. (Obst & Hunt 1990).* *"Foraging profitability for avian benthivores may be altered for prolonged periods after feeding by gray whales. In the Bering Sea and coastal British Columbia, invertebrate colonists settled in organic debris trapped in whale feeding pits and remained at elevated densities for weeks to months. (Liver & Slattery 1985). Populations of some infaunal invertebrates may also increase over longer periods because sediment suspension by gray whales exports finder particles*	The 2008 DEIS compared the effect of the Tribe's proposal and five other alternatives on potentially affected marine habitat in the project area. Because none of the alternatives would have more than a negligible effect on overall abundance of ENP gray whales, there would be no effect on the marine environment outside the project area (Subsection 4. 4.3.2.2.2, Changes in Disturbance-dependent Benthic Communities).

[51] DNA evidence for historic population size and past ecosystem impacts of gray whales. S. Elizabeth Alter, Eric Rynes, Stephen R. Palumbi (2007)

[52] Gray whales may increase feeding opportunites for avian benthivores. Anderson, Lovvorn, MEPS pre press abstract. 2008

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	and releases nutrients (Johnson & Nelson l984). Longer-term changes in benthic communities may explain why, after the typical arrival in March of gray whales in Puget Sound, we observed scoter numbers increase in a habitual feeding area for whales. The period for which feeding pits are valuable to avian benthivores will depend on various factors affecting foraging profitability, such as colonization rates and thus localized biomass of prey (Oliver & Slattery 1985) use pits as visual cues, and feeding rates of other predators. *" Recent episodes of high mortality for gray whales during migration and winter may have resulted from observed declines of their main prey in the Bering Sea (Le Boeuf et all 2000)… Gray whales that feed throughout the summer south of the Bering Sea are known as the Pacific Coast Feeding Aggregation, and likely account for just 1 or 2% of the -18,000 gray whales in the eastern Pacific Ocean (Calambokidis et al 2002a, Anglliss & Outlaw 2007). However, foraging during migration occurs along the entire Pacific coast……. At the scale of decades, gray whales may feed along all suitable sections of coast, shifting foraging locations as profitability changes among diverse foods. (Darling et al. 1998). These impacts can alter prey availability for several months and thus we suggest that longer term effects on many bottom feeding animals may be important, even if direct feeding associations with gray whales are rare.* *" Moreover, feeding by gray whales during their northward migration coincides with increasing energy needs of marine birds as they prepare for migration and reproduction, at the same time that typical winter foods may have declined. (Lewis et al.2007)."*[53] The impact of a hunt of gray whales on bottom feeding birds has not been assessed in the DEIS. The impact caused by the loss of whales on birds has not been assessed. Given that sea ducks and bottom feeding birds have experienced major declines in the last decade; the synergistic and cumulative effects of any whale slaughter have not been adequately examined. If resident gray whales desert their	

[53] Anderson & Lovvorn: Gray Whales and bottom feeding birds. MEPS prepress abstract.

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	Northwest feeding grounds, sea diving birds will have diminished prey.	
AFA100	Professor James Lovvorn says that the contamination levels in seabirds are " *through the roof*" (pers.comm) but that the birds seem to be able to deal with these levels. Unquestionably gray whales do not. The evidence of toxic contaminants in sea ducks and diving birds which share the same habitat as gray whales is an injunction to urgently investigate the contamination levels in whales.	Comments regarding contaminants are raised and responded to elsewhere in this comment letter.
AFA101	**TOURISM** The DEIS contains some extraordinary statements in relation to the Makah hunt and its impact on whale watching. ***'Current revenues of whale-watch operators are unknown,*** *and there is no information available or that could be obtained that would allow an estimation of how much revenues might decrease if ENP gray whale behavior were altered by a Makah hunt. DEIS 4-109'* Professor Linwood Pendleton, UCLA, in his paper " Understanding the Potential Economic Impact of Marine Wildlife Viewing and Whale Watching in California provides details of the value of whale watching and wildlife viewing along the California coast. He estimates the value in the order of tens to hundreds of millions of dollars annually. " *Clearly, the economic value of protecting and enhancing near shore marine wildlife populations in California is non-trivial."* It is extremely doubtful that Washington State would be any different from California. Professor Pendleton cites in 1999 and 2000, more than 43% of all Americans participated in some form of marine recreation. ' *Americans flock to beaches and shores to swim, fish, boat, and view the natural scenery. Overall, the total number of people participating*	The comment cites information about the value of whale watching but no data on the current revenues of whale-watch operators. The 2008 DEIS concluded there could be an effect on whale-watching revenues, but that such an effect was unlikely, citing several factors. The comment does not cite any relevant information we failed to consider in the 2008 DEIS.

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	in all forms of marine recreation is expected to increase. (Leeworthy et al 2005). *' Wildlife viewing represents an important part of marine recreation. Bird watching and other wildlife viewing constitute the fifth and seventh most popular marine recreation activities in the United States, with more than 15 million people spending nearly 650 million person days watching birds at the shore alone. (Leeworthy, Wiley, 2001). Leeworthy et al (2005) predict that by 2005, the number of people participating in coastal bird watching activities was expected to have grown by 6% to more than 16 million participants; by 2010 the figure is predicted to be just under 17 million. Other forms of wildlife viewing, including whale watching, are also expected to grow in overall numbers of participants. Using the same models, Leeworthy et al predict that by 2005, almost 14.5 million people can be expected to participate in some other form of wildlife viewing nationally with this number growing to 15 million by 2010.* *' Whale watching has grown to become an industry with gross receipts of over $%150 million (in US$1999) in the United States alone. By the early twenty first century, whale watching business operated in 87 countries and served more than 9 million whale watchers. (Hoyt, 2001). At the end of the twentieth century, nearly 270 whale watch tour companies were in operation in the United States generation over <u>$158 million (the writer's emphasis) in direct revenues.</u>* *' Within the United States, whale watching is concentrated most heavily in New England, Alaska, California and the Pacific Northwest. '* NMFS has no excuse for not including this information in the DEIS. Millions of Americans and tourists who go to the Pacific Northwest to watch birds, whales and recreate in the marine environment will take their recreation somewhere else. No one in his or her right mind wants to watch a whale being hunted, harpooned and butchered in the midst of the Olympic Sanctuary. Professor Pendleton's paper continues: -	

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	' wildlife viewing, including whale watching, contributes to local, regional and national economies in two important ways. First, wildlife viewing and whale watching generate gross revenues that create jobs, support salaries, and generate tax revenues for local and state governments. While these gross revenues do not reflect economic value, they do indicate a measure of the economic impact of these activities, economic impact includes the support of jobs, wages, and multiplier effects. Further gross revenues form the base of taxes that are generated by whale and wildlife viewing. Second wildlife viewing and whale watching generate values beyond what people spend in the market. These non market values represent a larger part of the total value that people place on the opportunity to see marine and coastal life." There has been NO attempt in the DEIS to assess the value of whale and wildlife watching in Washington state; to assess the impact of a Makah slaughter of five to seven whales on the tourist industry; to assess the economic impact of Washington becoming a whale killing state; to assess the loss of gross revenues which rely on whale and wildlife watching. No attempt to assess the multiplier effect. Instead, the DEIS seeks to mislead again by failing to investigate the true cost of a Makah slaughter. Questions of discrimination arise given that taxpayers would have to bear the cost of the " cultural and ceremonial" slaughters of Gray whales and the resulting impact on tourism to Washington State. Yet another violation of NEPA. NMFS is unable to demonstrate any support by tourists, tourist operators, wildlife or whale watching companies who believe that allowing the Makah to kill Gray whales will encourage tourism to the Pacific Northwest.	
AFA102	**WAVE ENERGY PROJECTS** AFA Int. has identified at least 26 wave energy projects along the West Coast. The cumulative effects of this new source of energy are unknown. AFA cites some of a summary of a Scientific Workshop on Ecological Effects of Wave Energy Development in the Pacific Northwest.	The 2008 DEIS examined the potential effect of wave energy projects on ENP gray whales (3.4.3.6.10, Marine Energy Projects). The new DEIS contains updated information in the same subsection.

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	A steering committee at the Hatfield Marine Science Center in Newport, Oregon, organized the workshop. According to the report, the proceedings were to be published in a NOAA Technical Memorandum available early 2008. There is no reference to any such Memorandum in the DEIS. Some of the key issues are worth dealing with in these comments. " Marine Mammals. Significant concern about mooring cables (slack v taut; horizontal v vertical; diameter) and entanglement issues. Very basic baseline data is needed (mammal biology, presence/absence/species diversity; information on prey species) to understand the projects' impacts It is critical to monitor cetaceans (e.g. videography, beachings, tagging, vessel surveys) to understand how they interact with wave energy facilities. Benthic Habitat. Wave energy development can have a large effect on water circulation and currents. Current changes would effect larval distribution and sediment transport (both on benthos and on beaches). Fouling community growth on buoys, anchors and lines may adversely affect benthic environment if deposited and accumulate on seafloor. " Acoustics. Understanding noise coming from buoys/cables and how fish and marine Mammals will/could react is critical. It is possible to model noise from buoy/cables and use that information to Assess impacts from various scales of wave energy facility build out.	

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	The synchrony of noise from buoys could exacerbate/create noise not previously considered (this could be modeled.) Wave energy facilities, depending on their size and layout, could create a sound barrier that mammals would avoid. " System View/Cumulative Effects. It is important to understand/evaluate what we don't know. As projects scale up, risks become a function of the extent, density and duration of the project operation. In order to understand effects, impact thresholds need to be established. As projects scale up in location or implementation, new risk end points Come into play that were not initially part of the assessment. Therefore, Adaptive management is critical to address long-term impacts. **As projects scale up, other activities can be displaced (e.g. fishing ….May force whales to alter migration paths etc.)** **It is important to think broadly about cumulative effects when** **Assessing impacts. (Our emphasis)**	
AFA103	**LIQUIFIED NATURAL GAS TERMINALS (LNG)**	The potential effect of liquefied natural gas terminals on gray whales are from construction, ship strikes, or contaminants. The 2008 DEIS examined all of these threats (Section 3.4.3.6, Known and Potential Anthropogenic Impacts).

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	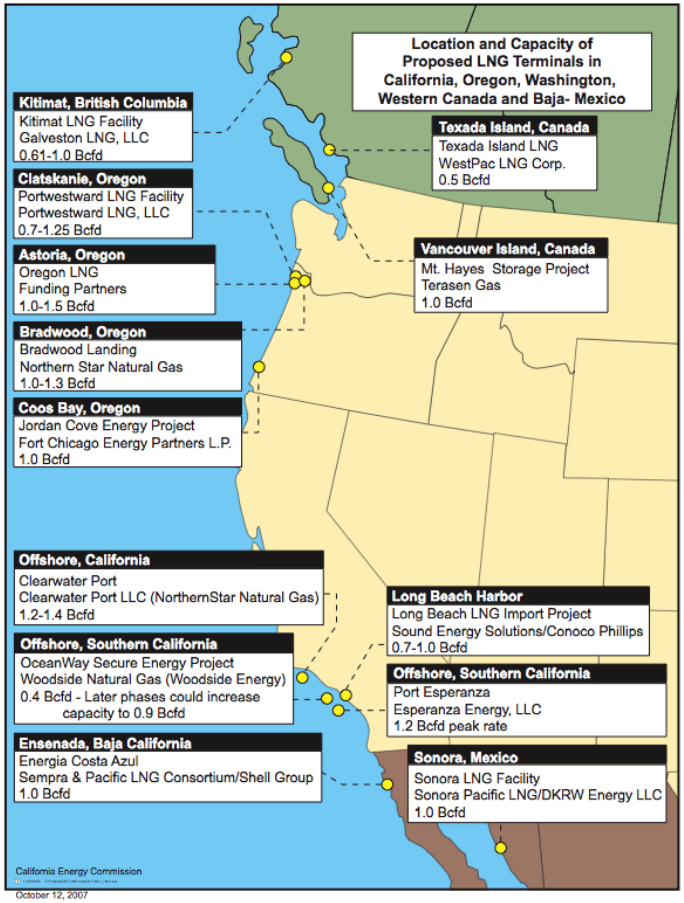 Table 25. LNG Terminals. FERC With at least 13 proposed LNG Terminals along the migration route, the DEIS is deficient in taking into account the impact on the population.	

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	According to a Staff Report, California Coastal Commission [54] potential marine resource impacts of LNG Terminals include the following: - • Entrainment of planktonic and larval organisms due to the use of seawater. • impingement of marine life on intake screens on LNG carrier vessels; • disturbance to nocturnal seabirds due to safety, operational and construction lighting requirements • disturbance and injury of marine mammals due to underwater noise associated with construction and operational activities • disturbance and loss of benthic organisms and habitat due to placement and installation of mooring systems, the excavation of exit pits in the seafloor and installation of pipelines and protective devices • risk of tankers and support vessels colliding with marine mammals • disturbance and entanglement of migratory whales during pipeline installation • destruction of marine habitat and mortality to marine life associated with accidental interactions with unexploded ordnance during pipeline construction and installation. WATER POLLUTION AND MARINE WILDLIFE Discharges will degrade ocean water quality. LNG Terminals intake millions of gallons of seawater per day to cool their generators and discharge water more than 28. Degrees Fahrenheit hotter than ambient ocean temperatures. Billions of gallons per year of intake and thermal waste would cause serious harm to the surrounding ecosystems, killing zooplankton and small fish critical to the survival of marine mammals and fisheries. LNG terminals will discharge sewage and ballast water, and heated wastewater from LNG regasification operations.	

[54] CC-079-06 BHP Billiton Staff Report and Recommendation

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	Construction of gas pipelines could cause harmful spills of drilling fluids and even contaminated sediments into near shore marine environments. Increased vessel traffic resulting from LNG Terminals also increases the likelihood of hazardous diesel, oil or sewage spills. According to marine mammal experts, endangered blue and humpback whales and federally protected gray whales migrating north from the calving lagoons of Baja, commonly feed and travel along the route where the proposed LNG Terminals will be sited. Consequently, these endangered marine mammals will be threatened with asphyxiation and burns from surface fires in the event of significant LNG releases, increased chance of injury or death from collisions with ship traffic, and habitat degradation from water pollution. Noise from the tankers, the terminals and pipeline construction will be audible above and underwater for miles around these activities. The underwater noise could harm these marine mammal species and many others, reduce their ability to communicate and find food, or cause them to abandon these traditional habitats and migration routes. The cumulative impacts of the proposed LNG Terminals along the gray whale migration route have not been assessed in the DEIS. **MEXICAN DEVELOPMENT IMPACTING ON GRAY WHALES.** Five different energy consortiums have announced plans to build Liquified Natural Gas (LNG) Terminals at different locations along the northern Baja coast. [55]	
AFA104	**SHIP STRIKES**	The 2008 DEIS considered the impact that ship strikes may be having on ENP gray whales (Subsection 3.4.3.6.6, Vessel Interactions). It also examined "the cumulative effect of each alternative on each resource, in the context of the effects of past actions,

[55] Urban et al Review of Gray Whales in Mexican waters. J. Cetacean Res. 5(3) 281-295, 2003

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	The cumulative impact of increasing numbers of cruise ships and industrial shipping traffic have not been taken into account by the DEIS.	current conditions, and reasonably foreseeable future actions and conditions" (Subsection 5.1, Context for Analysis). Ship strikes are not currently a concern for ENP gray whales and the comment points to no information suggesting they would have cumulative effects on the whales.
AFA105	**GLARING DEFICIENCIES IN THE MAKAH DEIS.** The term **UNCERTAIN** has been used over and over again in describing the potential impact of a Makah slaughter. AFA Int. provides a list of some of the items which are **UNCERTAIN** or **UNKNOWN**. Without **CERTAINTY**, the Precautionary Principle should be applied. AFA Int. draws the attention of NMFS to NEPA in relation to the above. " *(5) the degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks*." **Uncertain -**Long term effects of number of visitors – Alternative 2 and 3 * 'It is ***uncertain***, *but possible, that a decision not to authorize a Makah whale hunt could discourage future requests for a waiver of the MMPA.* * *The Coast Guard specifically found that "the* ***uncertain*** *reactions of a pursued or wounded whale and the inherent dangers in firing a [.50 caliber] hunting rifle from a pitching and rolling small boat are likely to be present in all future hunts, and present a significant danger to life and property if persons or vessels are not excluded from the immediate vicinity of a hunt" (64 FR 61212, November 10, 1999). 3-10 DEIS* * *Sound exposure may also induce physical trauma to non-auditory structures (Jepson et al. 2004; Fernandez et al. 2005), although much remains* ***uncertain*** *regarding the exact mechanisms. Because marine mammals in the project area rely on underwater*	The purpose of an EIS is to provide information to the decision-maker and the public, including identifying areas where potentially relevant information is unknown or uncertain. This comment does not cite information that we failed to consider in the 2008 DEIS. It also does not appear to be a comment about the adequacy of the analysis in the DEIS but rather about the ultimate decision of whether to grant or deny the Tribe's request.

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	sounds for various purposes, any strong anthropogenic sounds at relevant frequencies might have an effect. 3-174 DEIS ** It is **uncertain** whether penthrite grenades would be readily available for a Makah Tribe gray whale hunt. 3-296 DEIS* ** The future of the moratorium on commercial whaling remains **uncertain.** 3-327 DEIS* ** While slight majorities within the IWC have thus succeeded in adopting contradictory resolutions regarding the commercial whaling moratorium, (resolutions are nonbinding) definitive action on the commercial moratorium (or the revised management scheme) is **uncertain** because neither the pro-commercial-whaling or anti-commercial-whaling sides of the debate have the three-fourths majority necessary for action (Henderson 2005; Hogarth 2006). DEIS 3-327* ** It is possible that fewer rifle shots or grenade explosions would be necessary to kill whales under Alternative 3 because of the opportunity to hunt during the summer, when better weather and sea conditions might improve hunter accuracy. Due to **the uncertainty** associated with such a prediction, however, the analysis makes the conservative assumption that there would be the same number of weapons discharges regardless of the hunting season. DEIS 4-10* ** It is reasonable to expect that whales approached by Makah whale-hunting vessels would react in a similar, temporary manner. It is **uncertain** what the longer-term effects would be on whales exposed to repeated approaches. DEIS 4-39* ** It is **uncertain** how whales would react to unsuccessful harpoon* *attempts, but the reaction may be similar to that observed in whales that are tagged or biopsied. Such reactions are likely to be dramatic but temporary changes in behavior (Section 3.4.3.6.6, Vessel Interactions). Whales may be less likely to habituate to unsuccessful harpoon attempts than to approaches of vessels. It is unknown whether whales in the vicinity of successful harpoon attempts will*	

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	develop an association between vessel approaches and harpoon strikes and over time begin to avoid vessels. DEIS 4-39 * *During migration, it is **uncertain** what factors affect gray whale distribution and habitat use. While there is evidence that gray whales will alter course or swimming speed in response to disturbances, there is no evidence that the disturbance is more than temporary (Section 3.4.3.6, Known and Potential Anthropogenic Impacts). Clarke and Moore (2002) found there was little evidence that gray whales disturbed by human activities travel far in response or remain disturbed for long. DEIS 4-39* (* Note – this is yet another example of selective quotes from NMFS scientists without also citing the research which clearly indicates whales ARE disturbed by human activities and change their migration route in response to disturbance. As well, the whales have abandoned lagoons in Mexico because of disturbance by human activity.) * *It is **uncertain** whether the use of an explosive projectile could reduce time to death. DEIS 4-42* (Outrageous stuff) * *It is **uncertain** what the average time to death would be for gray whales killed in a Makah gray whale hunt using explosive projectiles as the striking and killing weapon, though it is possible that average time to death would be lower than with the alternative method (toggle-point harpoon and rifle), because the striking weapon has the potential to quickly kill the whale or render it insensible. DEIS 4-43* * *It is **uncertain** whether other whales would take the place of killed Makah U&A whales or ORSVI whales during the year in which they were killed. DEIS 4-46* * *It is **uncertain** whether the intensity of unsuccessful harpoon attempts* *would result in more than a temporary disturbance of Makah U&A whales and cause them to avoid portions of the Makah U&A either for a short period (days to weeks), or a longer period (for example, over a period of years). Makah DEIS 4-49*	

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	* *If seven whales were killed under Alternative 3, it is **uncertain** whether other whales would take their place during the year in which they were killed. Seven whales are more than the observed annual recruitment to the Makah U&A. So it is possible that there would be a decrease in abundance under this alternative compared to the No-action Alternative. DEIS 4-52* ** Note: This issue was raised in the 9th Circuit, Anderson v. Evans. The Court found that this question could not be answered adequately and ruled against the Government.* * *It is also **uncertain** how quickly whales removed under Alternative 3 would be replaced in subsequent years. As described in Section 3.4.3.3.1, Summer Range Distribution and Habitat Use, Calambokidis et al. (2004a) propose that whales likely recruit to the Makah U&A or other parts of the PCFA survey area from the migratory population randomly, as feeding habitat becomes available along the migration route. Thus it appears likely that at least some of the removed whales could be replaced in subsequent years. DEIS 4-52* * Although the precise number of Makah U&A and ORSVI whales removed cannot *be predicted, as many as seven could be killed each year. Given the numbers of whales available to replace them, it is unlikely all seven would be replaced during the year in which they were removed. It is **uncertain** whether seven would be replaced in the subsequent year. Compared to Alternative 2, Alternative 3 represents a potential seven-fold increase in the risk to abundance of whales in the Makah U&A and ORSVI survey areas, because of the potential for seven of these whales to be killed per year compared to about one whale per year under Alternative 2. DEIS 4-52* * *It is **uncertain** whether the intensity of unsuccessful harpoon attempts would result in more than a temporary disturbance of Makah U&A whales and cause them to avoid portions of the Makah U&A either for a short period (days to weeks), or a longer period (for example, over a period of years). It is also uncertain whether such disturbance in the Makah U&A would cause PCFA whales to change*	

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	their distribution or habitat use in the larger PCFA survey area. As described in Section 4.4.2.3, Change in Distribution or Habitat Use, availability of prey may be the factor most strongly affecting gray whale distribution during feeding. If prey is available in the Makah U&A or PCFA, hunting by the Makah Tribe might not result in either a short- or long-term response from summer-feeding whales. Many new whales are seen in the Makah U&A every year (Section 3.4.3.3.1, Summer Range Distribution and Habitat Use). Thus even if some whales do abandon the area as a result of hunting disturbance, new whales that had not previously been exposed to hunting might come into the area, suggesting that gray whale distribution and habitat use will not change compared to the No-action Alternative. DEIS 4 – 54 * *If three Makah U&A and ORSVI whales were killed under Alternative 5, it is **uncertain** whether other whales would take their place during the year in which they were killed. Whales identified in the PCFA survey area could take the place of whales removed from the ORSVI, and whales identified in the ORSVI survey area could take the place of whales removed from the Makah U&A. DEIS 4-57* * *It is also **uncertain** how quickly Makah U&A and ORSVI whales removed under Alternative 5 would be replaced in subsequent years. All three whales killed under this scenario could be Makah U&A whales, which is higher than the average annual recruitment of 4.66 whales described under Alternative 2. DEIS 4-57* * *It is **uncertain** whether the intensity of unsuccessful harpoon attempts would result in more than a temporary disturbance of Makah U&A whales and cause them to avoid portions of the Makah U&A either for a short period (days to weeks), or a longer period (for example, over a period of years). It is also **uncertain** whether such disturbance in the Makah U&A would cause PCFA whales to change their distribution or habitat use in the larger PCFA survey area. As described in Section 4.4.2.3, Change in Distribution or Habitat Use, availability of prey may be the factor most strongly affecting gray whale distribution during feeding. If prey is available in the Makah U&A or PCFA, hunting by the Makah Tribe might not result in either a short- or long-term response from summer-feeding whales. Many*	

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	new whales are seen in the Makah U&A every year (Section 3.4.3.3.1, Summer Range Distribution and Habitat Use). Thus even if some whales do abandon the area as a result of hunting disturbance, new whales that had not previously been exposed to hunting might come into the area, indicating that gray whale distribution and habitat use will not change compared to the No-action Alternative. DEIS 4-59 * *Under current conditions, NMFS' annual budget for marine mammal management in the Northwest Region ranges from zero to $500,000 per year. The overall budget for monitoring the ENP gray whale population is approximately $65,000. Within the ENP gray whale budget, funding has been provided for photo-identification studies of gray whales in local survey areas with one purpose, among others, being management of a potential Makah gray whale hunt. It is **uncertain** whether NMFS would continue to fund the photo-identification program if a hunt was not authorized. Because no gray whale hunting currently occurs, there are no NMFS observers associated with a hunt. DEIS 4-105* * It is ***uncertain*** whether a hunt would result in a long-term increase in tourism. Publicity about the whale hunt could generate interest in the Makah Reservation as a cultural tourism destination, while some individuals might not visit the project area due to negative publicity about the whale hunt. DEIS 4 – 108 * It is ***un*certain** whether four whales annually would meet contemporary Makah needs. DEIS 4-145 * *Based on the information available for this analysis, all of the alternatives would have a reasonably foreseeable potential to affect human health both positively and negatively. **There are too many uncertainties**, however, to quantify either type of effect or to predict whether any of the alternatives would result in a net positive or negative effect on human health. DEIS 4-193* * *The outcomes of any future processes would depend on facts not presently known, but it is possible that implementation of Alternatives 2 through 6 could lead to increased federally authorized take by other Indian tribes. With respect to the No-action Alternative, **it is uncertain** whether a decision by NMFS to deny the Makah Tribe's*	

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	request would result in less harvest of marine mammals by Indian tribes in the future. DEIS 4-198 * *NMFS considers it unlikely that publishing a WCA gray whale quota for the Makah's use under Alternatives 2 through 6 would influence other Indian tribes to seek WCA quotas, eventually leading to the harvest of other whale species in other aboriginal subsistence whaling operations. In any event, any WCA quota issued would be subject to the IWC catch limit. And before NMFS could publish a WCA quota, it would also be required to present a needs statement to the IWC. The outcome of that process would depend on facts not currently known and **the outcome is therefore uncertain.** DEIS 4-199* * ***It is uncertain** whether NMFS' action to authorize a gray whale hunt would increase whaling worldwide by emboldening pro-whaling countries. While such an outcome is possible, it is speculative given the variety of issues and dynamics that drive the decisions of the IWC or of countries party to the IWC. DEIS 4 – 206* * *In addition to future actions in the project area, future actions along the entire coast have the potential to affect gray whales because of their migration patterns. Projections for the future of shipping coast wide are **uncertain** due to concerns about fuel prices and the capacity of west coast ports to accommodate increased volumes (White 2008). There are several proposals by various entities to develop ocean energy projects all along the Pacific coast (Section 3.4.3.6.10, Marine 14 Energy Projects). At this time these projects are in the preliminary stages of study and design, and it is difficult to predict how many will ultimately be deployed and in what configuration. Consequently, an analysis of the impact of the action alternatives on gray whales or other wildlife, when added to the effects of future ocean energy projects, would be speculative, or not possible without project details available to analyze. DEIS 5-2* * *At this time it is **uncertain** how overall gray whale abundance and viability will be affected by global climate change (Weiss 2007). As described above, the Scientific Committee of the IWC annually monitors the status of the ENP gray whale stock, and the IWC has a process to adjust catch limits. DEIS 5-6*	

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	Unknown * The cause of such large-scale starvation remains ***unknown*** (Gulland et al. 2005). Some scientists think that the starvation was related to a climatically based decline in prey availability, especially related to the 1997 and 1998 El Nino events in the winter range and the Pacific Decadal Oscillation and Arctic Oscillation in the summer range (LeBouef et al. 2000; Moore et al. 2001; Moore et al. 2003). DEIS 3-103 **(Note: Nevertheless, the UME was not acted upon as required under the MMPA and no hypothesis which makes any sense other than starvation as a result of El Nino and regime shift makes sense)** * Most of the 2002 to 2005 dead whales that biologists examined died of ***unknown causes***. In a few cases, biologists found evidence of ship strikes (propeller cuts) or entanglement in fishing gear (Gulland et al. 2005). DEIS 3-104 * During the unauthorized hunt in 2007, at least 16 shots struck the whale, but it is **unknown** what caliber rifle was used. DEIS 3-116 * The long-term effects of repeated ingestion of sub-lethal quantities of petroleum hydrocarbons on marine mammals are also ***unknown***. DEIS 3-128 * Generally, the concept for most of these proposed projects is to take wind turbines and place them under water to use the energy from tidal currents to generate electricity (WDFW 2006b). The actual impacts of these types of projects **are unknown** because very few exist in the world, but WDFW (2006b) has identified preliminary potential impacts to birds, fish, and marine mammals. They include, but are not limited to, direct mortality or injury from turbine blade strikes, interference with migratory patterns, measures to protect equipment from marine growth, direct habitat loss from equipment and infrastructure placement, impacts on currents, changes in water surface elevations, effects on commercial and recreational fishing areas and equipment, changes in sediment transport, and other issues not yet identified. The WDFW will design studies to assess effects on fish, birds, marine mammals, and their habitats (WDFW	

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	2006b). DEIS 3-135 * Number of PFCA, ORSVI and Makah U & A Whales that may be killed under each alternative: * Likely number ORSVI – Alternatives 3, 5 and 6 - –**Unknown** * Likely number Makah U & A – Alternatives 3, 5 and 6 – **Unknown** DEIS 4-35 * It **is unknown** whether whales in the vicinity of successful harpoon attempts will develop an association between vessel approaches and harpoon strikes and over time begin to avoid vessels. DEIS 4-39 (Note: the Russian data documents Gray whales fleeing the catcher vessels.) * With the potential for 140 approaches and 28 unsuccessful harpoon attempts over 40 days, it is mathematically possible that every Makah U&A whale could be approached by tribal hunting vessels on multiple occasions, and that every Makah U&A whale could be subject to harpoon attempts. For PCFA whales, the number of whales present in any year is also likely larger than the number observed, although the actual number **is unknown**. DEIS 4-53, 54 * It is **unknown** how far away a hunt could occur without interfering with pelicans' foraging activities. DEIS 4-71 * It is **unknown** how murrelets react to gunfire, helicopters, and other loud disturbances to which these birds are unaccustomed, although helicopters and gunfire would probably cause them to either dive or fly away from the area completely (Nelson 1997). DEIS 4-71 * Some marine mammals, specifically those in the coastal environment (e.g., harbor seals, California sea lions, Steller sea lions, and sea otter), and most birds and turtles would continue to encounter noise and vessel traffic from sport and commercial fisheries vessels, sight-seeing boats, and other sources such as military vessels. ***Effects on these species at current levels are***	

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	unknown. DEIS 4-80 * If a Makah gray whale hunt were to alter gray whale behavior, it is not possible to estimate the amount of decrease that might occur in revenues of whale-watch operators. **Current revenues of whale-watch operators are unknown,** and there is no information available or that could reasonably be obtained that would allow an estimation of how much whale-watching revenues might decrease if gray whale behavior were altered by a Makah hunt. The extent to which a Makah hunt had an effect on gray whale behavior, and a subsequent indirect effect on whale- watching revenues, would depend primarily on factors that could cause whales to avoid boats, including the number of whales that could be struck and the estimated number of whales with harpoon attempts and approaches. DEIS 4-103 * **Current revenues of whale-watch operators are unknown,** and there is no information available or that could be obtained that would allow an estimation of how much revenues might decrease if ENP gray whale behavior were altered by a Makah hunt. DEIS 4-109 (**Note: Professor Linwood Pendleton has done a published study which estimates the whale watching industry is worth hundreds of millions of dollars.)** * Some level of hunting currently exists but **the number of injuries associated with weapons accidents in hunting is unknown**. Under any of the action alternatives, hunters and other participants would be at the greatest risk of injury from weapons because they would be handling weapons; protesters and bystanders would experience a lesser risk. DEIS 4-186	
AFA106	DEFICIENCES OF PARAMETRIX CONTRACT **#30. No consultations will be required with other countries, including Canada or Russia.** **(This instruction is extraordinary, given that the Gray whale is a migratory species and the information, which Canada, Mexico and Russia can provide, is critical to the management of the Gray Whales. AFA Int. doubts that the Mexican government or Mexican**	This is a comment about the contract with the consultant hired to assist in preparation of the 2008 DEIS and not a comment about the DEIS itself. Relevant investigations and analysis not conducted by the contractor and subcontractors were conducted by NMFS staff.

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	and Canadian tourist operators would be supportive of any Makah kill). Resource Scope of Work **Items NOT to Include:** Water Quality Quantitative analyses on oceanic water quality, either generally or locally General water quality and quantity conditions in the upland area surrounding the immediate hunt, such as watershed or stream conditions Lengthy background information on shellfish beds in general Construction impacts to water quality and quantity Identification and listing of valid water rights Water conservation Reclamation and reuse facilities Potable water supplies Field surveys Fish Species and Habitat Lengthy background information on ocean habitats Aspects of fish life histories unless they are pertinent to the effects analysis (e.g., time spent at sea feeding). Summarize relevant information in table format. No population modeling No field surveys Lengthy information on salmonid consumption, including dietary benefits Wildlife – ESA species	

COMMENT CODE	COMMENT	DRAFT STAFF RESPONSE
	No field surveys Do not describe aspects of life histories unless they are pertinent to the effects analysis. For example, do not include information on feeding or other behavior in portions of the range other than off the Washington coast. No population modeling Non-Listed Birds No field surveys Do not describe aspects of life history unless they are pertinent to the effects analysis. Summarize relevant information in a table format. No population modeling. Marine Mammals Do not describe aspects of life histories unless they are pertinent to the effects analysis. Information on population stocks of marine mammals not likely to be in the hunt area during the hunting period. No population modeling No field studies. General Vegetation Economic values of kelp beds Quantification of kelp bed destruction or impairment Land based vegetation ESA or State listed vegetation in the vicinity **Socioeconomics/Tourism** **State-wide economic or tourism data, and state-wide impacts** **Commercial shipping**	

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	Background data or impacts on other natural resources such as the timber industry. **The instruction to refrain from identifying any statewide impacts to tourism or the economy is a significant omission.** **Cultural Resources** **Information on structures or artifacts not related to whaling** **Historic information on tribes, Euro-settlements, or Northwest history prior to 1920** **Importance of whales to other populations besides the U.S. population (e.g. Russians, Canadians, Japanese, etc.)** **Detail regarding the International Whaling Convention Act beyond information necessary to characterize tribal whaling history.** **The instruction to refrain from recognizing the importance of whales to other populations besides the US population is outrageous. The whales are a migratory species and have major economic and spiritual value to Mexico, to the Mexican economy. As well, the thousands of tourists who have gone to Mexico to see gray whales have a major interest in their survival.** Noise Noise modeling Quantification of helicopter or gunfire noise levels Aesthetics Land-based aesthetic information **Graphics of any kind depicting the carcass or kill** **Why should graphics of dead whales be censored?** Transportation County-wide traffic data Public Services	

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	County-wide traffic and incident response data (unless localized information is unavailable or cannot be estimated via personal communications with reliable sources) Regional Coast Guard incident response data (unless localized information is unavailable and cannot be estimated via personal communications with reliable sources) State-wide data or effects Human Health/Safety Exposure to health risks from activities other than those directly involved in the hunt or butchering the carcass or from consuming the resulting whale products. County-wide data on arrests and traffic incidents County-wide or localized data on firearm injuries	
AFA107	**CONCLUSION.** The Makah DEIS is an appalling document. It is lacking in any objectivity, fails to encompass the vast array of threats facing the Gray whale and the cumulative impact of those threats. The ramifications of a waiver will impact internationally. It is difficult to believe that any Native American Indian Tribe would attempt to assert Treaty rights to kill vulnerable whales at a time when the population urgently needs the full protection of the law. On ecological grounds alone the Eastern North Pacific Gray Whale population merits relisting. The Eastern North Pacific Gray Whale is the last viable population of the species. It is time the US government took its responsibility towards this whale seriously. 14th August, 2008 Author : Sue Arnold, CEO AFA Int.	

Animal Welfare Institute – Comments submitted August 20, 2008 by D. Schubert.

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AWI1	On behalf of the Animal Welfare Institute (AWI), Cetacean Society International (CSI), and the Earth Island Institute's International Marine Mammal Project (EII) the following comments are submitted in response to the Draft Environmental Impact Statement for Proposed Authorization of the Makah Whale Hunt (Draft EIS). Though its girth is impressive, the content of the Draft EIS is woefully inadequate. While the National Marine Fisheries Service (NMFS) may be attempting to insulate itself from a successful lawsuit by crafting a 900+ page document, even an expedited review of the analysis contained therein reveals stark weaknesses and deficiencies that render the Draft EIS in violation of federal law. Based on its careful review of the Draft EIS, AWI supports Alternative 1 (the no-action alternative) and asserts that, given the deficiencies in the NMFS analysis of environmental impacts, Alternative 1 is the only option available to NMFS that will not trigger litigation by animal protection/conservation interests.[56]	Comment noted.
AWI2	Footnote 1. Appended to this comment letter and hereby incorporated by reference are all of the previous comments/report authored or coauthored by D.J. Schubert relevant to this issue. AWI/CSI expects that NMFS will review the attached documents in their entirely and provide responses to all substantive comments contained therein.	Attached to this comment letter was a letter dated February 16, 2001, providing comments on our 2001 EA. Many of the comments in that letter pertain to alleged inadequacies in the 2001 EA, which are not relevant here. Our review of the 2001 comment letter concluded that all of the comments that might be relevant to the 2008 DEIS have been raised in the present comment letter and are addressed in this response.
AWI3	For over ten years, NMFS has been attempting to force a square peg into a round hole through its ongoing efforts to both secure an aboriginal subsistence whaling (ASW) quota of gray whales from the International Whaling Commission (IWC)	Comment noted.

[56] [This footnote is placed above in the table to facilitate response.

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	and in its attempts to comply with its domestic legal obligations in order to allow the Makah to whale. In addition to an inordinate amount of personnel time and energy spent on this single project, NMFS has expended considerable tax-payer funds in its efforts. For its part, the Makah has consistently held that its "treaty rights" are not subject to IWC approval but has, nevertheless, worked with the U.S. government to secure the necessary international and national approvals.	
AWI4	This cooperative spirit, however, was shattered in September 2007 when 5 members of the Makah tribe, including four who were members of the 1999 Makah whaling crew and one who had been a whaling captain during that hunt, engaged in the illegal and brutal slaughter of a gray whale largely because they had lost patience with the process. In that case, the reported spiritual and cultural importance of whaling to the Makah was tossed aside as these individuals tried to make a statement. The Makah tribe was quick to condemn the killing as an act of "rogue" whalers, to proclaim its intent to prosecute the individuals to the fullest extent under tribal law, and rapidly dispatched a cadre of representatives to Washington D.C. to perform damage control with apparent allies in Congress and within NMFS. Instead of using this incident to permanently end its more than a decade long effort to facilitate the Makah's resumption of whaling given the tribe's clear inability to control its own members, NMFS, apparently satisfied with the excuses given by tribal leadership for the actions of its whalers, has proceeded with its efforts to facilitate Makah whaling as evidenced by the publication of the Draft EIS.	Comment noted.

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AWI5	Shortly after the September 2007 incident, local whale protection advocates began to hear rumors and gather evidence that there was more to the incident than disclosed by either the defendants or by the Makah Tribal Council. This evidence suggested that the Tribal Council and/or individual council members were not only aware of the pending illegal hunt but that they may have sanctioned or authorized the hunt. Then Makah Tribal Council Chairman Ben Johnson conceded in a September 10 article published in the Peninsula Daily News that those involved talked about killing a whale days before the incident (see Makah Leaders Promise to Punish Whale Hunters, Peninsula Daily News, September 10, 2007). While Mr. Johnson may claim that this was just talk, there is no evidence that he intervened to warn those making such statements that such a hunt would be illegal, would not be endorsed or supported by the tribal council, and must not be conducted until and unless the Makah have been given the green light by the U.S. government. In addition, Makah Whaling Commission Chairman Keith Johnson admitted to authorizing one of the perpetrators of this crime access to the large caliber weapon used during the incident (see Seattle Post-Intelligencer, September 11, 2007, "Makah on 'damage control' mission.). NMFS reportedly heard similar rumors and allegedly investigated whether the Tribal Council did countenance the illegal hunt but did not find enough evidence to prove such collusion (pers. comm. with Bill Giles, NMFS law enforcement, Seattle WA). The NMFS investigatory report on the September 2007 hunt, however, remains secret and protected from public release preventing AWI or any other interested parties (except the Makah itself, NMFS, the U.S. Department of Justice, and defense counsel in *Gonzales v. United States*) from reviewing	NOAA's office of law enforcement investigated the illegal 2007 hunt, and found no evidence that the Makah Tribal Council had authorized the hunt or Council members had participated in the planning of the hunt. To receive a copy of the enforcement report, the commenter may submit a request to NOAA Office of Law Enforcement under the Freedom of Information Act.

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	the evidence and evaluating its conclusions. Efforts to obtain a copy of the report from the U.S. Attorney's office in Seattle, WA have only recently been answered in the negative suggesting that the report may remain protected given the ongoing appeal of the convictions by two of the defendants in *Gonzales v. United States*. Despite the fact that NMFS has turned over the report to the U.S. Attorney's office which has subsequently given it to the defense counsel, a representative of NMFS has indicated that a Freedom of Information Act (FOIA) request would be required to access the report assuming it is even available for public release. Even then, NMFS, like the U.S. Attorney's office, has suggested that since two of the defendants have appealed the court's decision, it may be barred from releasing the report pending completion of the legal proceedings.[57]	
AWI6	Such logistical or procedural obstacles serve only to prevent interested stakeholders from understanding the nature and extent of the investigation and from assessing whether the investigation was objective or, as is feared, entirely subjective given the clear conflict of interest that exists between NMFS and the Makah tribe. Indeed, considering the long-term efforts of NMFS to facilitate the Makah's resumption of whaling, its role as both an advocate for the Makah's interests on the international and national stage as well as being tasked to investigate the Makah in response to the illegal hunt demonstrates the absurdity of its involvement in this case. Thus, the fact that NMFS reportedly found no evidence of Makah Tribal Council collusion or complicity in the illegal hunt may be nothing more than a political determination designed to ensure that its past 12 years of effort have not been entirely wasted.	The comment raises procedural issues regarding NMFS' actions and not substantive matters analyzed in the 2008 DEIS or the new DEIS. In response to this and similar subsequent comments, we note that we describe costs associated with monitoring and enforcement in the event a tribal hunt occurs in the 2008 DEIS (Subsection 4.6.2.5, Management and Law Enforcement) and the new DEIS (Subsection 4.6.2.5, Management and Law Enforcement).

[57] Since the government has released the investigatory report to the attorneys representing the defendants in *Gonzales v. United States*, it can't withhold release of the document from the public.

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AWI7	The evidence of Tribal Council complicity and collusion in the September 2007 hunt was ultimately disclosed to the public in the sentencing memoranda filed by two of the five defendants who either pled guilty or were found guilty of violating federal law for their role in the illegal whale hunt. The evidence presented did not simply consistent of claims by the defendants that they were given permission and even encouraged to kill the whale by the Tribal Council and/or by one or more council members, though such claims were made. Rather, the sentencing memoranda included several eyewitness statements attesting to various facts or statements that provide compelling evidence of Tribal Council involvement in the illegal hunt. The mere fact that NMFS reportedly couldn't prove such complicity or that the court was not moved by such claims when sentencing the five Makah whalers is not proof that the claims are not true. If, as AWI suspects, the claims of Tribal Council complicity in the hunt are true it would undermine the entire basis for the U.S. government to continue to process the tribe's waiver application and/or to continue with the present National Environmental Policy Act (NEPA) process.	The comment raises procedural issues regarding NMFS' decision to continue consideration of the Tribe's waiver request and not substantive matters analyzed in the 2008 DEIS or the new DEIS. We decline to accept the suggestion that a claim should be considered true unless it can be disproved.
AWI8	NMFS published the Draft EIS weeks before the defendants in *United States v. Gonzales* disclosed their evidence demonstrating Tribal Council complicity in the illegal hunt. Whether the timing of the release of the Draft EIS was intentional to avoid having to address the claims of council collusion is unknown. Nevertheless, the evidence has now been made public, requiring NMFS to address such claims by conceding that they are true, demonstrating that they are false, or engaging in or, preferably, requesting a new investigation of the illegal hunt by an objective third party. At a minimum, NMFS must suspend the current NEPA process pending: 1) the immediate release of its investigatory report of	The new DEIS describes the NMFS investigation of the illegal hunt, including allegations of tribal council endorsement (Section 1.4.2, Summary of Recent Makah Whaling – 1998 through 2014).

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	the September 2007 incident; and 2) the completion of an independent and objective investigation of Tribal Council collusion or complicity in the illegal hunt.	
AWI9	While the conviction of two of the five defendants is currently on appeal, all five defendants were sentenced for their crimes. Two received jail terms, yet three went virtually unpunished for their crime receiving sentences of probation and community service with a recommendation that they participate in marine mammal counts (i.e., whale watching) near Neah Bay to fulfill their community service obligations. In tribal court, despite the council's early rhetoric about fully prosecuting the defendants under tribal law, no tribal penalty was imposed. Instead, the judge deferred prosecution of the five defendants if they can successfully complete the sentences imposed by the federal court.[58] The judge blamed the lack of tribal prosecution on the inability to empanel a fair and impartial jury given strong opinions among Makah tribal members as to the defendants' actions. Regardless of the reason for the lack of tribal prosecution, the outcome conclusively demonstrates that the Makah are not able to control the actions of its people and, in this case, its whalers and that its tribal justice system is not sufficient to ensure the full and fair prosecution of individuals who violate multiple tribal laws.	The new DEIS describes the current tribal enforcement and judicial system (Subsection 3.1.2, Makah Management of Reservation and U&A Areas). Regardless of the efficacy of that system, the convictions of Makah tribal members involved in the unauthorized hunt demonstrate that the United States has mechanisms in place that are effective in enforcing the MMPA.
AWI10	The Draft EIS only briefly mentions the September 2007 illegal whale hunt largely in the context of the weapons used to wound the whale and the whale's considerable time to death. At the time of publication, however, NMFS was well aware of the allegations that the Tribal Council may have played a role in authorizing the hunt (pers. comm. with Bill Giles, NMFS law	The new DEIS describes this incident in more detail, including allegations regarding tribal council involvement (Subsection 1.4.2, Summary of Recent Makah Whaling – 1998 through 2014).

[58] At least one of the three defendants' who were sentenced only to probation and community service, recently violated his probation by committing a crime on tribal lands. The U.S. Attorney is reportedly aware of this incident and a hearing date has been set for the court to determine if this particular defendant will be further penalized for violating the terms of his probation.

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	enforcement, Seattle, WA) and, though such information had not been disclosed to the public yet, NMFS should have provided more substantive discussion of such allegations in the Draft EIS. Such a deficiency, however, was certainly not the only oversight in the Draft EIS.	
AWI11	Indeed, as the remainder of this letter will demonstrate, NMFS has failed to disclose or adequately analyze many critical issues inherent to the proposed action, the alternatives, the environmental impacts associated with granting of the Marine Mammal Protection Act (MMPA) waiver requested by the Makah tribe, and the tribe's resumption of whaling.	We respond below to the comments summarized in this paragraph.
AWI12	Beyond failing to even satisfy the basic NEPA requirements of including a valid purpose and need statement, considering a reasonable range of alternatives, and disclosing all relevant information about the affected environment, NMFS has failed to adequately evaluate the impact of the proposed action on resident whales, has (at the request of the Makah) concocted a series of whale quotas and subquotas that do not make sense or that won't work, has relied on information (much of which is inaccurate or biased) provided by parties (e.g., Parametrix Inc., Ann Renker, Jennifer Sepez) with a clear conflict of interest, and has grossly failed to disclose or evaluate the cumulative impacts of granting the waiver or allowing the Makah to resume whaling. It is particularly disconcerting that despite preparing an EIS as ordered by the court in *Anderson v. Evans*, NMFS failed to disclose critical information about threats to gray whales and their habitat throughout the species migratory range (i.e., oil and gas development in Alaska and along the coastline of the Pacific mainland, extensive wave energy projects proposed for the mainland coast, existence and expansion military activities in Northwest Washington and along the entire mainland coast,	We respond below to the comments summarized in this paragraph.

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	global warming, and anthropogenic noise impacts on gray whales).	
AWI13	Had it objectively and fully evaluated the impacts of this proposal as required under NEPA, NMFS would have concluded, among other things, that: 1) the Treaty of Neah Bay has been abrogated and/or cannot be relied on to allow the resumption of Makah whaling; 2) the IWC has never recognized the alleged "subsistence" need of the Makah tribe and that, therefore, past and present quotas cannot be allocated under U.S. law; 3) that the current gray whale population estimate is inaccurate and a considerable overestimate of actual numbers; 4) that the current gray whale population estimate is not at or near the historic "carrying capacity" of gray whale habitat and that, in fact, gray whales should be designated as a depleted species; 5) that the species and its habitat are under considerable threat as a result of the combined effects of global warming, ocean noise, coastal development and pollution, and ship strikes, prey depletion, and entanglements in fishing gear and that such threats, particularly the impact of warming oceans on gray whale food supplies in its arctic feedings areas, will result in a substantial decline in the species; 6) that the proposed mechanism for regulating the killing of "resident" whales is not workable and could lead to the slaughter of up to 20 "resident" whales in five years; 7) that the Makah's health, language, ceremonies, or culture have not been adversely affected by the termination of whaling over the past eighty years; 8) that the Makah were not forced to give up whaling by actions of the U.S. government but rather, voluntarily ceased whaling in order to partake in the more lucrative sealing industry; and 9) that the Makah cannot meet the IWC's definition of "aboriginal subsistence whaling" and, therefore, cannot be allowed to whale under U.S. law.	We respond below to the comments summarized in this paragraph.

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	Such deficiencies merely scratch the surface of the legal inadequacies inherent in the Draft EIS. Consequently, as will be demonstrated in this comment letter, NMFS must, preferably, select the no-action alternative permanently ending its efforts to placate the desires of those members of the Makah tribe who have an interest in whaling.	
AWI14	These efforts should be replaced by a concerted undertaking to enhance the conservation of gray whales in light of the existing and increasing anthropogenic threats to the species and its habitat, including the disastrous consequences of global warming. While the causes of global warming may not be under the immediate control of NMFS, in the marine realm NMFS has the ultimate responsibility to understand and predict such impacts and to adjust their management measures (e.g., for fisheries and/or marine mammals) accordingly to minimize, mitigate, or compensate for such impacts. Such mitigation, in this case, would be to prevent the intentional killing or harassment of gray whales by selecting the no-action alternative and prohibiting the Makah from whaling. While NMFS may attempt to downplay such impacts by claiming that the Makah would be permitted to slaughter only 20 whales over the course of five years, considering the dramatic ecosystem-wide changes being documented in the Bering Sea, the potential precedential impacts of granting the Makah's waiver request on other tribal and non-tribal interests, and the potential for "resident" whales to become increasingly important for the survival of the species, such an excuse simply has no merit.	Comment noted.
AWI15	While the critical content and analysis contained in the Draft EIS is deficient, its length complicates the process of preparing substantive comments. In an attempt to provide some order to this comment letter, AWI splits its comments into two	We respond below to the comments summarized in these paragraphs.

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	sections. The first section deals with overarching deficiencies in the Draft EIS providing a substantive analysis of each in the order in which the issue appears in the Draft EIS. The second section address more specific errors, omissions, or questions about the information contained (or not contained as the case may be) in the Draft EIS. The issues addressed in the second section are presented in no particular order. AWI provides references to individual pages when referring to certain claims or facts contained in the Draft EIS. While efforts have been made to avoid duplication between the two sections, some is inevitable. As a preface to its substantive and specific comments on the Draft EIS, comments on the process used to complete the Draft EIS, particularly the lack of sufficient opportunity for the public to participate in this decision-making process, are in order.	
AWI16	**<u>Inadequacy of Existing Comment Deadline:</u>** As an initial matter, NMFS has failed to provide the public, including interested non-governmental organizations, tribes, and scientists sufficient opportunity to review and prepare substantive comments on the Draft EIS. While the existing 90+ day comment period may be considered sufficient for most environmental documents prepared pursuant to NEPA, said documents are not normally over 900 pages in length and they don't routinely contain reference to over 700 documents. To further complicate matters, the Draft EIS references numerous legal opinions, addresses the ICRW and changes in the treaty over time, and covers (albeit inadequately) a wide range of issues from gray whale population estimates to a wave energy project in Makah Bay and from the impacts of whaling on tourism in Clallam County to the precedential impacts of	NOAA's regulations regarding NEPA require that the agency provide a 45-day comment period on all EISs (NOAA Administrative Order 216-6). In this case, we provided 98 days to review the draft – an initial 60-day period and a 38-day extension. In response to request for comments on the draft, NMFS received more than 800 pages of comments from over 400 commenters, suggesting that the 98-day comment period allowed commenters sufficient time to read and to respond to the draft. This comment period is consistent with, or longer than, other comment periods for complex draft EISs prepared by NMFS. For example, for its 1,000 plus page draft EIS on Washington States' forest practices, we provided a 90-day comment period. The nearly 1,200 page draft EIS on the Puget Sound Chinook harvest management plan had a 46-day comment period.

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	granting a waiver to the Makah Tribe. While AWI is critical of the content and quality of analysis in the Draft EIS, the amount of information disclosed and discussed along with the amount of information that was left out of the analysis warrants an extended comment period far in excess of the given 90+ days. The original comment deadline was July 8, 2008. The original 60-day comment period encompassed the nearly month long meeting of the IWC held in Santiago, Chile. For some organizations such as AWI and the Humane Society of the United States (HSUS) their representatives to the IWC Scientific Committee meeting and to the subcommittee/ plenary meetings are the same individuals responsible for crafting comments on the Draft EIS. In addition to the time spent at the meeting itself, IWC meetings require considerable preparation meaning that the AWI and HSUS representatives were unable to use at least three to five weeks of the original comment period due to their attendance at the IWC meeting. Whether the scheduling of the original comment period was intentionally planned to overlap with the IWC meeting is not known (though it is difficult to imagine that NMFS staff in Seattle/Portland could have been unaware of the dates of the IWC meeting). To address the inadequacy of the original comment deadline, requests were made to NMFS to extend the deadline by 90-days until October 8, 2008. To its credit, NMFS agreed to extend the deadline until August 15, 2008 though its reasons for providing only a 5-week extension when 90-days was requested is not known. A second request for an additional 30-day extension in the comment deadline was submitted by AWI and other organizations on July 22, 2008. This request was in addition to similar requests submitted by other organizations.	

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	On August 5, NMFS officially denied the second request for an extension claiming that the 98-day comment period was sufficient. AWI believes NMFS was in error for failing to grant an additional 30-days for the public to comment on the Draft EIS for reasons articulated in its two request letters. AWI along with several other organizations subsequently submitted yet another request for an extension in the comment deadline on the Draft EIS to Secretary of Commerce Gutierrez and NOAA Administrator Lautenbacher on August 8, 2008. To date, no response to that request has been provided. As explained in the various letters seeking an extension in the comment deadline, there were a number of credible reasons why NMFS should have granted the original request of an additional 90-days or, at a minimum, agreed to the second deadline extension until September 15, 2008. In addition to the length of the Draft EIS, the large number of references included in the Draft EIS required additional time for the public to both obtain, review, and rely on that information in their substantive comments. While NMFS has made efforts to provide copies of the requested references to a number of organizations, including organizations signed on to this comment letter, providing the documents and ensuring that there is sufficient time to review said documents prior to the comment deadline are two very different propositions. Similarly, additional time is necessary so that the public can obtain and review the many legal citations included in the Draft EIS and/or conduct independent legal research to determine the accuracy of the legal analysis contained in the document. There are a number of legal issues relevant to	

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	Makah whaling including the legal interpretation of the Treaty of Neah Bay and, in particular, the "in common with" language contained in Article IV, the legal boundaries of the Makah Usual and Accustomed grounds and stations; whether the Treaty of Neah Bay was abrogated by Congress upon its promulgation of the MMPA which includes specific exemptions for Alaskan natives, and the interpretation of the MMPA and WCA as they relate to Makah whaling. Had NMFS provided an additional 30-days for public comment, such analyses could have been completed and presented for consideration by NMFS. The decision by NMFS to deny the request for an additional 30-day extension in the comment deadline was also particularly surprising since there is no compelling reason to complete this NEPA process within a specified time period and because NMFS would benefit from providing the extra time. The Makah have killed a single whale (in a 1999 hunt the basis of which was subsequently found to be in violation of the law as held in *Anderson v. Evans*) in over eighty years. Thus, allowing an extra 30-days for the public to comment on the Draft EIS would cause absolutely no harm to the Makah or to the NMFS staff who have been assigned to work on this project. Unlike NEPA review of a proposed change in a federal fisheries quota, for example, where a decision may be necessary before a fishery season is set to begin, there was/is no specific urgency in completing this NEPA review. Indeed, as specified in the Draft EIS, the present NEPA review is only one step in a multi-step process required by the court in *Anderson v. Evans* which includes a decision on the issuance of the Makah's requested MMPA waiver. While NMFS is acting as if it is	

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	attempting to complete this entire process before the tenure of the Bush administration is over, given the complexity of the MMPA waiver process, it is highly likely that a final decision about Makah whaling will be made by the next administration. As a consequence, providing an additional 30-days to ensure that the public had an adequate opportunity to review and comment on the Draft EIS should not have been denied. Ultimately, had NMFS granted the second extension, all interested stakeholders and NMFS would have benefited. AWI and the other organizations were not seeking an extension in the comment deadline solely for their own benefit but rather, for the benefit of all interested stakeholders, including the Makah, its allies, and those who choose to support the Makah whaling. The benefit to NMFS would be from the more complete record to be reviewed by its decision-makers and which would help inform their decision. This is not to say that the ultimate decision would have been supported by AWI or its allied organizations but, at least, NMFS would have had a more complete record on which to base its decision. Finally, as addressed in each of the request letters, the role of the public in the NEPA process is crucial to the process. The Council on Environmental Quality's NEPA implementing regulations make clear that public scrutiny of NEPA documents is "essential to implementing NEPA," 40 CFR §1500.1(b), and that federal agencies are to "encourage and facilitate public involvement in decisions which affect the quality of the human environment." Id. at §1500.2(d). Unlike NMFS which has access to experts on various issues on its own staff and/or can afford to hire various consultants to address a wide range of issues under consideration in an EIS,	

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	few if any organizations have access to such specialists on staff or externally particularly when dealing with a limited comment opportunity. Certainly, AWI does not have ready access to experts in gray whale population biology, gray whale ecology, oceanographers, benthic invertebrate ecologists, global climate change specialists, and/or alternative energy specialists requiring existing staff to do their best to study and become familiar with a vast amount of information in order to provide substantive comments on NEPA documents like the Draft EIS. Had NMFS provided an additional 30-days to facilitate public review and comment on the Draft EIS, a larger amount of material could have been reviewed and integrated into the comment letter thereby improving the quality and value of the comments to the benefit of the NMFS decision-makers. For the foregoing reasons, AWI requests that NMFS immediately publish a notice reopening the comment period on the Draft EIS for, at a minimum, 30-days to provide interested stakeholders with additional time to analyze the Draft EIS, research issues of concern, and submit informed and substantive supplemental comments. While AWI hopes NMFS will reopen the comment period for the benefit of all interested stakeholders, AWI intends, regardless of the NMFS response to this request, to submit a supplement to this comment letter to provide more detailed analysis of certain claims/conclusions included in the Draft EIS.	
AWI17	**<u>Substantive and Specific Comments on the Draft EIS:</u>** The remainder of the comment letter identifies substantive and specific comments on the Draft EIS. The substantive comments are no more or less important than the specific comments but the latter reflect detailed criticisms of the	This is an introductory paragraph. Responses to specific comments appear below.

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	content or analyses in the Draft EIS while the former address broader deficiencies in the document. The order in which substantive or specific issues/criticisms are discussed does not reflect the importance or relevance of the issue. Some overlap is inevitable between these two categories of comments though efforts have been made to reduce repetition. **<u>Substantive Comments:</u>**	
AWI18	**1. The Makah cannot meet the IWC's definition of aboriginal subsistence whaling and, therefore, under both the provisions of the ICRW and pursuant to national law, the Makah cannot be allowed to whale:** The IWC regulates two types of whaling; commercial and aboriginal. The ICRW (the treaty that established the IWC) contains no explicit reference to aboriginal whaling. Similarly, the IWC's Schedule contains no specific definition of aboriginal subsistence whaling nor does it define the criteria that must be met to qualify as an aboriginal subsistence whaling group. Rather, the Schedule sets forth the aboriginal subsistence whaling quotas ostensibly accepted by the IWC. Over time the IWC has agreed on both criteria to determine who can qualify to conduct aboriginal subsistence whaling and to a definition of subsistence use. The basic criteria that any group desiring to engage in aboriginal subsistence whaling must meet are to demonstrate a continuing traditional dependence on whaling and on the use of whales. The Makah cannot meet this standard. The Draft EIS claims that a combination of factors led to the suspension of Makah whaling in the 1920s. Draft EIS at 3-233.	The position of the United States is that the Tribe's proposal "constitutes 'aboriginal subsistence whaling' within the meaning of the 1946 International Convention for the Regulation of Whaling" (IWC/48/28, 1996). Regarding the description in the draft EIS of the Tribe's reasons for ceasing whale hunts, the comment offers no evidence to support the assertion that one cause alone led to the suspension of Makah whaling.

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	These factors allegedly included the dramatic reduction in the number of whales available to the Makah due to the impacts of commercial whaling on the stocks, the decimation of the Makah themselves as a result of smallpox and other infectious diseases, a reduction in the demand for whale oil, the increased profitability of sealing, and the U.S. government's failure to provide promised assistance to help the Makah retain its whaling practices during the government's efforts to assimilate the Makah into western society. Draft EIS at 1-5. While all of these issues may have occurred, only one, the increased profitability of sealing, led to the Makah's abandonment of whaling so that the tribe could benefit from the lucrative trade in seal products. Draft EIS at 3-235. Thus, contrary to the claims made by the Makah and NMFS, the tribe was not compelled or forced to give up whaling but voluntarily elected to forego whaling in order to take advantage of the more profitable sealing industry. NMFS has attempted to use this combination of factors argument to claim that it was, in effect, the fault of the U.S. government that the Makah gave up whaling for over seventy years before killing a whale in1999. By presenting the argument this way, the U.S. government was taking the blame for the Makah's extended hiatus from whaling while allowing the Makah to gain sympathy for its alleged mistreatment. In reality, neither the devastation of gray whale stocks by commercial whaling or U.S. government policies involving the Makah had anything to do with the Makah's decision to forego whaling. Instead, the potential for profits from the sealing industry led to the Makah's decision to abandon its whaling tradition. Since the decision was voluntary and not forced, the Makah must solely shoulder both the burden and blame for failing to continually engage in whaling and, therefore, for not	

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	meeting the IWC criteria to qualify for aboriginal subsistence whaling. The fact that the Makah may continue to sing songs about whaling, conduct whaling ceremonies, and engage in cultural events relevant to whaling does not satisfy the IWC's criteria of a "continuing traditional dependence on whaling and on the use of whales." See 1981 Ad Hoc Technical Working Group's definition of "aboriginal subsistence whaling." The key here is the word "continuing" and the phrases "on whaling and on the use of whales." The term "continuing" clearly means that the use of whales or practice of whaling has occurred on a regular basis over time. While it is inevitable that there could be years when an aboriginal group would not or could not engage in whaling due to a sufficiency of stored food supplies, a focus on collecting other food stuffs, due to injury to the whaling captain or crew members, or because of weather, an eighty-year hiatus in whaling does not meet the standard of "continuing." Moreover, the phrase "on whaling and on the use of whales" means that the group must demonstrate a continuing traditional dependence on both whales and whaling. The fact that an aboriginal group may have a traditional dependence on whales based on various songs, ceremonies, or dances about whales performed over decades is not sufficient to meet this definition as the group also has to demonstrate a dependence on whaling and on the use of whales. The Makah cannot demonstrate such a dependence. It is clear that the primary intent of this standard is to ensure that aboriginal groups who have a legitimate subsistence need for the products of whales obtained through whaling can meet those needs. NMFS concedes this intent when it indicates that the Ad Hoc Technical Working Group's definition of "aboriginal	

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	subsistence whaling" "refers to a 'continuing traditional dependence' on whale products for subsistence." Draft EIS at 3-330. Thus while songs and ceremonies about whales may have persisted within Makah culture even after whaling was discarded as a routine practice, neither can satisfy a subsistence need for whale products. Moreover, if whaling was as culturally important to the Makah as the tribe suggests then its songs, ceremonies, and other practices relevant to whaling would have been passed down from generation to generation even though whaling itself was no longer practiced. If that is the case, as the Makah suggest it is, this demonstrates that the Makah are more than capable of preserving its cultural connections to whales without slaughtering and eating them. The Makah can't use the gray whale's listing under the Endangered Species Act (ESA) as a defense for it hiatus of whaling. First, the Makah's decision to voluntarily stop whaling occur some forty-years before the precursor to today's ESA was passed by Congress. Second, even if such a gap did not exist, the Makah can't use the ESA as an excuse for not resuming whaling if, in fact, whaling is of such significant cultural importance to the tribe. Alaskan natives, for example, consistently (with limited exceptions) killed bowhead whales even after the bowhead was listed as an endangered species (which remains the bowheads' designation). Similarly, the international protections afforded the gray whale in the 1930s and in 1946 under the ICRW and its Schedule cannot be relied on to justify the Makah's whaling hiatus since both laws permitted some level of aboriginal subsistence whaling. NMFS may attempt to claim that the reasons for the Makah's decision to forego whaling are irrelevant since the IWC has	

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	issued an ASW quota for gray whales which is shared between the U.S. and Russia. This too would be in error. Indeed, an examination of the history of the Makah whaling issue within the IWC demonstrates that the IWC has actually never approved the Makah's statement of need. In 1996, the first year that the U.S. sought a quota for the Makah, the U.S. withdrew the proposal when it became clear that it did not have the required votes. The following year, the U.S. and Russia submitted a joint request for a quota as both countries claimed to have aboriginal groups who had a legitimate subsistence need to slaughter gray whales.[59] The verbatim record from the discussion of the joint quota during the meeting in which a minimum of 17 countries questioned the Makah's alleged subsistence need provides compelling evidence that the tribe's need was never accepted or recognized. Instead, the IWC debated the addition of language to amend the introductory portion of the aboriginal subsistence whaling portion of the IWC Schedule (paragraph 13(b)(2)) to add the language "whose traditional subsistence and cultural needs have been recognized by the International Whaling Commission." Draft EIS at 1-34. The U.S. rejected the "by the International Whaling Commission" clause claiming that the "IWC had not established a mechanism for recognizing such needs, other than adoption of a catch limit … ." Id. Subsequently, the IWC supported the U.S. approach and accepted the joint request for a gray whale catch limit. While the U.S. touted this vote as IWC approval of the Makah gray whale hunt, the Australian delegation countered that the	

[59] Though the U.S. and the Russian Federation were proposing to allow aboriginal subsistence whaling on the same gray whale stock, a joint request was not required by IWC rules. The U.S. and the Russian Federation should have filed individual requests so that each request could have been judged on its own merit.

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	IWC did not recognize the traditional subsistence and cultural needs of the Makah as required by the amended Schedule language. Clearly, the U.S. efforts to remove any reference to the IWC having a role in determining subsistence need was based on its long-term efforts to unilaterally decide whether its aboriginal groups have a legitimate need. In the end, the IWC only approved the joint request by consensus because the majority, while rejecting claims of the Makah's subsistence needs, did not want to penalize Russia's Chukotkan natives for their government's decision to submit a joint request with the U.S. In 2004, after the Russian delegation complained that its Chukotkan natives were being treated differently than other aboriginal groups, it was eventually decided to entirely eliminate the "whose traditional subsistence and cultural needs have been recognized" from the Schedule. This decision, which of course the U.S. supported, furthered the U.S. effort to create an environment whereby it and other countries that allow aboriginal subsistence whaling could unilaterally decide if their aboriginal groups had a legitimate subsistence need. The U.S. now claims that it, not the IWC, has the unilateral authority to recognize the needs of the Alaskan Inupiats and the Makah. For example, even before the "have been recognized" language was removed from the Schedule in 2004, the U.S. interpretation of that language was that "each IWC party was free to recognize the subsistence and cultural needs of its aborigines." Draft EIS at 4-202 citing IWC 1998. Yet, there remains confusion over the role of the IWC versus the role of individual IWC-member governments in assessing the need of aboriginal groups. For instance, NMFS asserts that	

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	in order to seek IWC approval for an aboriginal subsistence whaling catch limit, a contracting government must "submit a proposal to the IWC based on cultural and nutritional needs documented in a needs statement." Draft EIS at 1-21. If individual government's can recognize the aboriginal needs of their subsistence groups then the submission of so-called need statements to the IWC would seemingly be unnecessary. Instead, countries should just submit to the IWC's Scientific Committee a document delineating the number of whales it would like to allow its aboriginal groups to kill so that the Scientific Committee can determine if such a quota would be sustainable or not. While this may or may not reflect the U.S. interpretation of the current requirements for the IWC to review and accept or reject a needs statement, it is clear that, largely due to U.S. supported alterations to the relevant language in the Schedule, there is no clear understanding of what is or is not required to obtain IWC approval for aboriginal subsistence whaling. NMFS must clarify precisely how the U.S. interprets the IWC's Schedule provision pertaining to aboriginal subsistence whaling.	
AWI19	**2. NMFS has failed to demonstrate that the Makah's whaling "rights" contained in the Treaty of Neah Bay have not been abrogated by Congress:** NMFS briefly discusses the case law relevant to treaty abrogation in the Draft EIS. It concludes that the Supreme Court has required "clear evidence that Congress actually considered the conflict between the intended action on the one hand and Indian treaty rights on the other, and chose to resolve the conflict by abrogating the treaty" citing *United*	The legal issues raised in this comment have been raised in court briefings and proceedings and were most recently addressed by the court in *Anderson v. Evans*. They are beyond the scope of the 2008 or the new DEIS. The purpose of an EIS is to analyze impacts of a proposed action and alternatives on the human environment, not resolve legal issues in response to the Tribes' 2005 waiver request, filed with the agency in compliance with the 9th Circuit *Anderson v. Evans* decision.

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	States v. Dion 1986, Draft EIS at 1-11. NMFS failed, however, to discuss whether the whaling provisions contained in the Treaty of Neah Bay were abrogated when Congress promulgated the MMPA despite the fact that this issue has been raised by many stakeholders groups over the years and has been referenced in past lawsuits. The court in Anderson v. Evans addressed the treaty abrogation issue ruling that "[w]e need not and do not decide whether the Tribe's whaling rights have been abrogated by the MMPA." Draft EIS. Thus, though it remains an open legal question as to whether Congress has or has not abrogated the treaty rights of the Makah in regard to whaling; the evidence suggests that Congress has, indeed, done so. Despite whatever federal trust responsibility the U.S. government may have to the Makah tribe, it also has an obligation to ensure that any tribal treaty remains in full force and effect before engaging in efforts to enforce or authorize specific treaty articles. In other words, NMFS is obligated to determine if a treaty or a provision within a treaty has been abrogated as a first step before expending time and resources attempting to enforce or authorize the treaty or a particular provision contained therein. The MMPA, promulgated in 1972 by Congress, includes a specific exemption for Alaskan natives to permit them to continue to kill marine mammals despite the prohibitions against such killing contained in the Act. See MMPA Section 101(a)(3). No such exemption was created for the Makah tribe or any other native group inhabiting the U.S. mainland. Considering the alleged importance of marine mammals, including whales and seals, to the cultural, spiritual, and economic history of the Makah tribe it is inconceivable that tribal members or tribal leaders were not aware of efforts	

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	underway within Congress in 1972 to pass a law to protect marine mammals. Not only were such efforts likely reported in local newspapers, on the radio, or on television but surely the Makah's elected Representative or Senators at least informed the Makah of said deliberations and/or actively sought the tribe's input into such legislation. Perhaps the Makah were even advised of the exemption being crafted for the Alaskan natives and asked if they too would desire such a special condition to be contained in the legislation to protect its interests. The fact that Congress did not carve out a specific exemption for the Makah or for any Native American tribe in the lower 48 states as it did for Alaskan natives demonstrates that Congress, which had to be aware of the Treaty of Neah Bay, explicitly elected to abrogate the whaling and sealing provisions of that treaty either with or without concurrence of the Makah tribe. AWI has initiated an extensive search of all relevant documents and legislative history associated with the promulgation of the MMPA in order to locate any document or reference to the Makah tribe if such a reference exists. Even if this analysis finds nothing of relevance, this does not obviate the fact that <u>Congress only exempted Alaskan natives from the MMPA</u>. If the whaling and sealing "rights" of the Makah have been abrogated as the evidence suggests, then there is no compelling treaty "right" to whaling and NMFS has no unique responsibility to attempt to secure a treaty "right" that does not exist. If this is the case, it offers compelling evidence for NMFS to terminate this entire process. Presumably, the Makah Tribe could still apply for an MMPA waiver and permit and the U.S. government could still seek an ASW quota for the Makah	

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	at the IWC. The Makah could no longer use its "treaty" as a justification for the waiver nor would the treaty be relevant within the IWC. It should not be the responsibility of AWI or any other interest group to prove that the Makah's whaling (and sealing) "rights" embedded in the Treaty of Neah Bay have been abrogated by Congress. Rather, NMFS should have engaged in such an analysis and/or required the Makah to provide compelling evidence that its treaty "right" had not been abrogated in its MMPA waiver and permit application. Until and unless this is done, the current process must be terminated since the treaty's abrogation is of such critical importance to the fundamental issue at the heart of this controversy.	
AWI20	**3. The Treaty of Neah Bay does not provide the Makah with the exclusive right to hunt whales and specific treaty articles cannot be implemented independently of the entire treaty:** For nearly fifteen years, some within the Makah Tribe have relied on the language contained in its 1855 Treaty of Neah Bay as the primary justification for their desire to resume whaling. NMFS has also used that language to defend its ongoing efforts to secure the opportunity for the Makah to engage in whaling by claiming that the Makah is the only tribe to have explicitly preserved their right to whale in their treaty with the U.S. government. The treaty language pertaining to whaling is contained in Article IV which states that "[T]he right of taking fish and of whaling or sealing at usual and accustomed grounds and stations is further secured to said Indians in common with all	The comment seems to take issue with what the commenter believes is an inaccurate interpretation of treaty language by the Ninth Circuit Court of Appeals in its *Anderson v. Evans* decision. The legal issues raised in this comment are beyond the scope of the 2008 or the new DEIS. The purpose of an EIS is to analyze impacts of a proposed action and alternatives on the human environment, not to debate the meaning and intent of legal decisions.

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	citizens of the United States." In referencing this language, the Makah and NMFS all too frequently neglect to include the "in common with" language either because they believe it is irrelevant to the question of whether the Makah have a treaty right to whale or because it creates a potential problem with using the treaty language to permit the Makah to whale. The court in *Anderson v. Evans* addressed the "in common with" language. It said: We have recognized that the "in common with" language creates a relationship between Indians and non-Indians similar to a cotenancy, in which neither party may "permit the subject matter of [the treaty] to be destroyed." *United States v. Washington,* 520 F.2d 676, 685 (9th Cir. 1975). *See also United States v. Washington*, 761 F.2d 1404, 1408 (9th Cir. 1985) (recognizing that "in common with" has been interpreted to give rise to cotenancy type relationship). While this "in common with" clause does not strip Indians of the substance of their treaty rights, see *Washington v. Washington Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658, 677 n. 22 (1979), it does prevent Indians from relying on treaty rights to deprive other citizens of a fair apportionment of a resource. *See id*. at 683-84. The court went on to explain that the "in common with" language in the treaty ensures that both sides (Indians and non-Indians) have "right, secured by the treaty, to take a fair share of the available fish." Recognizing that the case law on interpreting the "in common with" language dealt largely with the apportionment of salmon and other fish stocks between Indians and non-Indians, the court explained that in the context of gray whales, "the Makah cannot, consistent with	

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	the plain terms of the treaty, hunt whales without regard to processes in place and designed to advance conservation values by preserving marine mammals or to engage in whalewatching, scientific study, and other nonconsumptive uses." Citation omitted. While we don't dispute the court's finding, we do believe that the court has misinterpreted the intention of the "in common with" language contained in Article IV of the Treaty of Neah Bay by failing to consider the historical context at the time the treaty was signed. In 1855, both the Makah and non-Indians were engaged in whaling, fishing, and sealing. Thus, when the Treaty of Neah Bay was signed both groups had a desire to continue to have access to whales without one group being given preference over the other. The "in common with" language provided that balance to ensure that both groups had equal opportunity to slaughter whales for use or trade in whale products. At the time, whale conservation was not an issue of concern. The fact that the court interprets the "in common with" language as involving disputes over salmon and other fish species is not surprising. The "in common with" language in the Treaty of Neah Bay also pertained to fishing which, like whaling, was practiced by both Indians and non-Indians in 1855. Thus, the "fair share" rulings ensuring balanced apportionment of the fish, seal, and whale stocks between Indians and non-Indians made sense given the historical context in which the Treaty of Neah Bay was signed. Unlike whaling, however, fishing for salmon and other species persisted without any significant disruption from well before 1855 to the present day. Whaling, on the other hand, was not	

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	consistently practiced by either the Makah or non-Indians since 1855. As the vast stocks of whales, including gray whales, were devastated by commercial whaling operations such operations began to shut down. For the Makah, as evidenced in the Draft EIS, they abandoned whaling in order to take advantage of more the more lucrative sealing industry. The last gray whale killed by the Makah was allegedly killed in 1928. Given the historical context during the time when the Treaty of Neah Bay was signed, it is clear that the intent of the "in common with" language was to ensure that both Indians and non-Indians would continue to have access to the whales for slaughter. Whale conservation was not an issue at that time and didn't become relevant or of concern for several more decades. The court in *Anderson v. Evans* introduced a modern interpretation of this "fair share" standard by suggesting that the Makah's interest in slaughtering whales must be balanced against the interests of non-Indians in gray whale conservation, scientific study, and other non-consumptive uses. What the court did not consider, however, is that the "in common with" language guarantees a non-Indian the same opportunities to use gray whales as that granted a Makah. Thus, if the Makah were allowed to whale then NMFS could not simply reject out of hand any request made by a non-Indian who may desire a similar opportunity. While the non-Indian would have to comply with the same standards as the Makah, including the submission of a waiver of the MMPA's marine mammal killing prohibition and/or request for a permit to kill a whale, NMFS would be obligated based on the "in common with" language in the treaty to give equal	

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	consideration to such a request as that it has given to the Makah's application.[60] Thus, the potential precedential impact of a decision by NMFS to grant a waiver to the Makah permitting the tribe to whale extends beyond other Native American tribes or to how other countries may respond to their own indigenous groups but must include the possibility that any citizen could request permission to kill a gray whale. While NMFS could claim that it would never countenance such a waiver application or permit request from a non-Indian, this would be a rather simplistic response to a far more complex issue. Indeed, considering that the treaty language was signed well before any protective legislation was promulgated to protect the gray whale, that an ancestor of a non-Indian whaling captain may have as much of a cultural connection to whales as a modern day Makah tribal member who hasn't killed a whale for some eighty years, and since NMFS repeatedly claims that there are more than enough gray whales for over 400 to be killed without harming the stock, applicants could make plenty of arguments to support such a request. Consequently, NMFS must provide a more detailed explanation as to the legal interpretation of the "in common with" language in the Treaty of Neah Bay and expand its analysis of the precedential impacts of its decision, if made, to grant the Makah a waiver from the MMPA.	

[60] Admittedly, the terms of the Whaling Convention Act and, in particular, its requirement that any whaling be conducted in compliance with the International Convention for the Regulation of Whaling may provide grounds for NMFS to reject such an application. However, this does not mean that one or more individuals could submit an application seeking the authority to kill a gray whale using the potential U.S. decision to permit the Makah to whale and the "in common with" language in the Treaty of Neah Bay as support for his/her/their request.

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	Furthermore, if NMFS and the Makah are going to rely so heavily on the Treaty of Neah Bay to justify the whaling by the tribe, then all provisions of the treaty must be equally enforced. The U.S. government should not and cannot pick and choose what provisions of the treaty it deems acceptable and worth pursuing and which provisions it can ignore. For example, Article 10 of the Treaty specifies that the Makah are "desirous to exclude from its reservation the use of ardent spirits, and to prevent its people from drinking the same, and therefore it is provided that any Indian … who shall be guilty of bringing liquor into said reservation, or who drinks liquor, may have his or her proportion of the annuities withheld from him or her … ." Sadly, it is well known and reported that some member of the Makah tribe have difficulties associated with the consumption of alcohol and other illicit drugs. These issues are no different than those that afflict far too many American households. The difference is that the Makah have a treaty provision that forbids the presence of ardent spirits on its reservation. While NMFS does not have the legal authority to enforce this provision, other federal agencies may have such authority and/or may be able to work with the Makah to enforce this provision of its treaty. For either NMFS or the Makah to ignore this important treaty provision while so heavily relying on Article 4 in their attempt to justify whaling by the Makah is inappropriate.	
AWI21	**4. NMFS has failed to disclose all relevant information about threats to the gray whale throughout its range, has focused its analysis too narrowly on the project area, and has failed to adequately evaluate the cumulative impacts of the proposed project:**	In response to this and similar comments, the new DEIS contains an expanded evaluation of the cumulative effect of threats to gray whales throughout their range (Subsection 5.4, Gray Whales). The new DEIS continues to consider the Makah Tribe's U&A as the project area, because that is where the effects of the action would occur. Activities that take

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	The Draft EIS defines the project area or proposed action area as the Makah's Usual and Accustomed grounds (U&A) excluding the Strait of Juna de Fuca. Draft EIS at 1-3. This area was delineated by the Makah in its waiver application. The tribe elected to exclude the waters within its U&A within the Strait of Juan de Fuca based on "concerns about public safety and the effects of hunts on gray whales in the local area." Draft EIS at 1-3. NMFS makes a significant yet fundamental error in the Draft EIS by focusing its analysis nearly completely on the so-called project area. As a result, nearly the entirety of Chapter 3 in the Draft EIS describes the affected environment within the project area. While this description (as discussed throughout this comment letter) is neither complete nor sufficiently detailed as required by NEPA, NMFS largely fails to describe the affected environment outside of the project area. NMFS fails to provide any explanation as to why it elected to limit the primary scope of its analysis to the project area and/or why it believes this is consistent with NEPA. The reality is that it's not. Regardless of the focus of the opinion in *Anderson v. Evans* on resident whales, the court ordered the preparation of an EIS. The court did not specify that the EIS should only focus on a small portion of the gray whales' entire range nor did it limit the scope of the analysis to only resident whales. Rather, NMFS must have made this determination and, by doing so, has failed to comply with NEPA and has failed to provide any substantive disclosure or discussion of the affected environment and threats to the gray whale outside of the project area.	place outside the project area are considered in Chapter 5, Cumulative Effects, to the extent they may have effects on the resources examined in the EIS.

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	Thus, while NMFS briefly mentions, among other things, the existence of the California Current, El-Nino and La-Nina weather patterns, the Pacific Decadal Oscillation[61] and the potential impact of these physical and climatic phenomena on currents, habitats, fauna, and flora within the project area, it entirely fails to disclose or only briefly mentions a whole host of issues and threats that impact the gray whale and its habitat throughout the species range from the arctic to Mexico. The same focus is found in the discussion of biological resources (i.e., phytoplankton, zooplankton, fish and invertebrates, and other species) and their presence, productivity, and ecological role within the Pacific Northwest despite the significance of these resources to gray whales throughout the species range. Similarly, in the discussion relevant to the benthic environment in the Draft EIS, the information is limited to the benthic characteristics and processes within the project area. See Draft EIS at 3-45 and 3-46. Indeed, this entire section of the Draft EIS is focused on the project area with only a general reference to, for example, the gray whale benthic feeding in the northern portion of the summer range in Section 3.4.3.3.1 of the Draft EIS. Draft EIS at 3-48. For reasons articulated below, this largely myopic concentration on the project area avoids the disclosure and discussion of a whole range of issues that directly, indirectly, and cumulatively impact the gray whale and the species habitat.	

[61] The focus of NMFS on the project area is evident in its description of these phenomena. In discussing upwelling and down-welling, NMFS highlights how strong winter storms and southerly winds from late-November to mid-March creates large waves in the Pacific Northwest which result in intense vertical mixing. Draft EIS at 3-35. In its discussion of eddies and fronts, NMFS focuses on the Juan de Fuca Eddy (or Tully Eddy) which develops offshore of northern Washington. Id. Similarly, when discussing El Nino and La Nina events, NMFS focuses on how these events affect the climate in the Pacific Northwest. Draft EIS at 3-37.

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	This is not to suggest that there is no discussion of the ecology or biology of gray whales beyond the project area. The Draft EIS includes sections, for example, summarizing the feeding ecology of gray whales (see Draft EIS at 3-61) including information on their unique attribute of suction feeding, the type of prey consumed, the fact that they don't solely feed during the summer on their arctic feeding grounds but may feed opportunistically along the migratory route, that resident whales consume a variety of prey including pelagic species, and that their feeding behaviors provide benefits to other species, including seabirds. Similarly, general information about the gray whales summer distribution and ecology north of the Alaska peninsula including very brief descriptions of prey types and density, impact of oceanographic changes on both prey species and gray whales, impact of gray whales on benthic invertebrates, and changes in gray whale distribution over time is included in the Draft EIS (see page 3-74) though the analysis is far from comprehensive or complete. NMFS cites certain investigators who propose that the allegedly increasing number of gray whales has led to the overexploitation of amphipods in the Bering Seas potentially leading to a permanent localized loss of amphipod or other prey communities forcing the whales to expand their summer range to locate alternative forage (citing Highsmith and Coyle 1992, Weitkamp et al. 1992). While there is compelling evidence that gray whales have expanded their summer range, the explanation for this shift provided by NMFS is only one possible cause. NMFS fails to disclose the other potential factors (discussed below) forcing such a shift preferring to articulate only those reasons that best support the NMFS claim that gray whales have reached or exceeded the carrying capacity of the habitat and now are causing impacts that not	

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	only adversely impact the species itself but disrupt the ecology of the arctic food web. The Draft EIS also includes information (see Draft EIS at 3-63) about the seasonal migrations of the species identifying the timing of southbound and northbound migrations, explaining the phased pattern of migrations among different groups of whales (i.e., near-term pregnant whales, non-pregnant females, mature males, and immature whales of both sexes (southbound migration); adult and juvenile whales, whales with calves (northbound migration)), and migratory routes in relation to shore (northbound whales generally migrate closer to shore than southbound whales). What is missing from the Draft EIS is of the greatest concern and demonstrates that NMFS has failed to meet the legal requirements imposed by NEPA in regard to the content and analysis mandated in an EIS. Again, inexplicably, the vast majority of the information and analysis contained in the Draft EIS is focused on the so-called project area as NMFS has failed to disclose critical information about the gray whale, the species habitat, and threats to both that exist outside the project area. Such full disclosure is required under NEPA. In addition, since NMFS evaluates the impacts of its proposed action on the ENP gray whale stock as a whole, one gray whales using the Makah U&A or ORSVI areas, and in terms of distribution changes within the Makah U&A and the PCFA, it is obligated to disclose all information about the gray whale throughout the species migratory range. Draft EIS at 4-31. Without such information its analysis of the impacts of the proposed action on the entire ENP gray whale population is incomplete.	

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	Gray whales, including gray whales that may be killed by the Makah (if the tribe is allowed to whale) occupy an area ranging from the arctic to Mexico. Throughout that range there are an abundance of threats to the gray whales and their habitat. The disclosure of all information about gray whales throughout their range including an analysis of all threats, both within and outside of the project area, was required to be included in the Draft EIS. NMFS simply cannot legally justify excluding such information from the Draft EIS and must, assuming it has any interest in complying with federal law, terminate the current process and (assuming it chooses to go forward with an effort to evaluate the impacts of Makah whaling) prepare a new EIS or supplement to the existing Draft EIS. A new EIS or supplement to the Draft EIS is required both by the plain language of NEPA and its implementing regulations to address this serious deficiency in the current document. In such a supplemental EIS, NMFS must disclose and analyze information in the following subject areas. These subjects either were not addressed at all in the Draft EIS, were only addressed (albeit inadequately) within the project area, or were incompletely evaluated. These subjects are not listed in any particular order of importance as all must be included in a supplemental EIS. A. Algal blooms. This issue is briefly discussed in the Draft EIS (see page 3-124) but is largely limited to the project area. Though NMFS concedes that the frequency of such blooms is increasing off the coast of Washington, it must disclose the frequency and severity of such blooms throughout the migratory range of gray whales and discuss how such blooms	

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	may adversely impact gray whales and their habitat, including any of their prey species. B. Oil and gas exploration activities. Remarkably, NMFS did not disclose or discuss oil and gas exploration activities and their potential direct, indirect, or cumulative impacts on gray whales anywhere in the Draft EIS. While there may presently be no oil and gas exploration activities within the project area or off the coast of Washington, there are extensive exploration activities (including seismic testing, drilling, and production) within the summer range of the gray whale in the arctic. While the Minerals Management Service (MMS) is primarily responsible for the regulation of such activities, NMFS is intimately involved in reviewing potential impacts of such activities on federally protected species and/or in issuing various permits to allow for the take (mainly through harassment) of marine mammals protected under both the ESA and MMPA. A review of the MMS website reveals that there are substantial areas within the arctic that have been or could be leased for oil and gas exploration activities. The range of the gray whale, which is expanding as the species searches for additional prey resources, overlaps with the offshore lease areas. Moreover, as evidenced by the multitude of NEPA analyses, biological assessments, biological opinions, and other analyses required under the relevant laws, there is no question that oil and gas exploration activities can and do directly and adversely impact gray whales and their habitat. Furthermore, the recent decision by President Bush to rescind the presidential order prohibiting offshore oil and gas development in the mainland U.S. and the increased attention to this issue within Congress raises the possibility that, in the	

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	not too distant future, oil and gas exploration activities could commence off the coasts of Washington, Oregon, and California which would add to the increasing threats already plaguing the gray whale. NMFS must consider and analyze the potential impact of all such oil and gas exploration activities, including such activities occurring or planned in the coastal waters of Canada and Mexico, in a supplemental EIS. Such an analysis also must include a more comprehensive assessment of the potential adverse impacts of oil spills on gray whales. This is essential both because of the increased risk of such spills if the analysis area includes the entire range of the gray whale versus only the project area and because the existing analysis in the Draft EIS is entirely inadequate. While the existing analysis includes a summary of potential impacts of oil spills on gray whales including impacts to their swimming speeds, time submerged, direction of movement, impacts to their eyes and epidermis, and the risks associated with consuming tar balls or breathing oil vapors, it discounted such impacts as slight and short-term. This apparent disregard for the potential adverse impacts of oil spills on gray whales is particularly alarming since NMFS concedes that the "volume of shipping traffic (entering and exiting Puget Sound) puts the region at risk of having a catastrophic oil spill." Draft EIS at 3-126. It goes on to conclude that "the proposed removal of the current moratorium on oil and gas exploration and development off the British Columbia coast may increase the danger of a major accident in the region" and that "the possibility of a large spill is one of the most important short-term threats to coastal organisms in the northeastern Pacific." Draft EIS at 3-127 citing Krahn et al. 2002. The fact that shipping accidents were responsible for	

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	the largest volume of oil discharged in Washington from 1970 to 1996, Draft EIS at 3-127, and that it is predicted that there will be an annual 4 percent increase in ship traffic into and out of Puget Sound in the future only adds to the significance of this potential threat to gray whales. C. Wave energy. NMFS mentions in the Draft EIS that there are ten marine energy projects currently proposed in Washington State. Draft EIS at 3-134. Wave energy technologies are relatively new and untested. There are various prototypes available including some that are largely submerged and some that float on the surface of the ocean or are only partially submerged. Though legislation specific to the regulation of wave energy development is either non-existent or incomplete, the Federal Energy Regulatory Commission (FERC) has taken the lead in attempting to regulate the development of this industry. Other agencies, including NMFS, the MMS, and the U.S. Army Corps of Engineers also play a role in regulating this growing industry. NMFS identifies a single wave energy project for construction in Makah Bay, located in the Makah U&A, which received a license from FERC in December 2007. Draft EIS at 3-135, 5-1. This project involves the installation of four buoys about 3.7 miles from shore in 150 feet of water. Each buoy would be tethered by cables to four surface floats while each float will be connected by a cable to a subsurface anchor buoy just above the seafloor. An analysis of the environmental impacts of the project concluded that there would only be minor or localized risks to gray whales. This analysis is, however, suspect considering the growing body of documents, reports, and other assessments suggesting that wave energy projects may pose greater threats to the environment, including to	

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	cetaceans, than anyone has revealed. Even NMFS reports that wave energy projects "have the potential to result in serious injury or death of migrating or summer-feeding whales." Draft EIS at 5-5. NMFS adds that "ocean energy projects could have a greater impact on summer-feeding whales in the PCFA survey area than on the ENP gray whale stock as a whole because the summer-feeding whales spend more time along the west coast." Draft EIS at 5-6. Considering the novelty of wave energy projects, the diversity of designs, and the vagaries of the current permitting process, the severity of many of the potential impacts of such projects are uncertain. As a result, the precautionary principle is particularly relevant here since it is important to identify and comprehensively address all impacts before significant funds are invested into the development of this technology. Of particular concern are the potential impacts of the sound or noise produced by such wave energy units to cetaceans, the impacts of any electromagnetic field produced by the units, and the possibility of injury, mortality, or disturbance of cetaceans as a result of entanglements with the buoy mooring system and transmission cable or from collisions with the mooring and anchor lines/cables used to attach these machines to the sea floor. Draft EIS at 5-5. While the Makah Bay project will likely have an impact on gray whales, it is the cumulative impact of all potential wave energy projects that is of greatest concern. Beyond the ten potential projects that NMFS identified in Washington State, a review of the FERC website identifies several other projects, currently in various steps of the planning and permitting process, for California, Oregon, and Washington. Though NMFS mentions "several proposals by	

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	various entities to develop ocean energy projects all along the Pacific coast," Draft EIS at 5-2, it fails to evaluate the cumulative impact of said project because it claims that they are "in the preliminary stages of study and design, and it is difficult to predict how many will ultimately be deployed and in what configuration" making any analysis of their impacts "speculative" or "not possible." Id. Yet, while attempting to avoid any analysis of the cumulative impacts of these projects, NMFS concedes that the "additional ocean energy projects proposed along the gray whales' migration route … if developed could affect migrating gray whales." Draft EIS at 5-5. Moreover, despite acknowledging that "ocean energy projects arrayed along the west coast could negatively affect the abundance of the gray whale population as a whole," NMFS reasserts that "there is insufficient information at this time to evaluate potential cumulative effects." Id. Considering the sheer number of such projects, the fact that there is considerable pressure on the government, including state government, to identify alternative sources of energy, and because of the potential adverse impacts of these projects, both individually and cumulatively, on the marine environment including whales, NMFS cannot avoid full disclosure and analysis of these projects. While not all of these projects have been given the green light by the relevant state or federal regulatory agencies, they are reasonably foreseeable and, therefore, must be included in any cumulative impact analysis. Without such an analysis the Draft EIS is incomplete and violates NEPA. D. Ocean noise: NMFS includes a very limited and superficial analysis of the impact of ocean noise on cetaceans and other marine species in the Draft EIS. Considering the	

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	ubiquitous problem with ocean noise throughout the world's oceans, all of the uncertainty regarding the full range and severity of threats posed by ocean noise to marine mammals and their prey species, along with the growing evidence of such adverse impacts, however, NMFS is obligated to provide a far more comprehensive analysis of this issue and its potential impacts on gray whales throughout their range. The world's oceans are polluted more than ever with noise. Noise levels in some areas of the gray whales range have doubled every decade for the past six decades. While some noise is from natural sources, most is human generated emanating from boats/ships/ vessels (of all sizes), from undersea exploration activities (i.e., for scientific research and for oil and gas exploration and exploitation), and from military operations (i.e., active sonar use, explosive detonations). While our knowledge of the impacts of such anthropogenic noise sources on cetaceans is improving, our understanding of such affects remains rudimentary at best. The lack of certainty in defining such impacts is due to a number of variables including, but certainly not limited to, not understanding the auditory thresholds of the species in question, the difficulty in study noise impacts on cetaceans in a wild environment, a lack of knowledge about the physiology of the auditory process in gray whales, the fact that affected whales may never be seen or monitored, and since proving cause and effect (to the degree that certain agencies may desire) is impossible. We know that ocean noise impacts marine mammals including cetaceans and that such impacts can range from behavioral disturbance to mortality. This is based on behavioral studies that have documented changes in whale behavior, swimming speeds, direction of movements, breathing frequencies,	

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	cessation of or changes in vocalizations, and active avoidance or escape from the vicinity of the anthropogenic noise source. Draft EIS at 3-174. We have some understanding as to how the frequency, duration, and intensity of ocean noise may affect certain species resulting in no impact, temporary loss of hearing, permanent damage to the auditory system, or non-auditory tissue and organ damage though our understanding of the long-term impacts of repeated or constant exposure of cetaceans to noise remains very limited. We do, however, understand the importance of sounds to cetaceans. Whether sounds are used to communicate with pod members or relatives, used to detect prey, used for navigation, or used to identify the approach of a predator, the ability to hear is of critical importance to marine mammals including cetaceans. Perturbations to these abilities can have grave consequences. We also understand, as conceded by NMFS, that baleen whales are thought to be most sensitive to low-frequency sounds, Draft EIS at 3-173, and that responses to noise can vary by sex and age as cow-calf pairs of gray whales are considered more sensitive to disturbance by whale-watching vessels than other age or sex classes. Draft EIS at 3-175 citing Tilt 1985. Despite the significance of this issue to gray whales, NMFS has largely glossed over the subject providing some very basic analysis of noise sources and impacts to cetaceans but then downplaying the impact of noise on the gray whale within the project area. See e.g., Draft EIS at 3-166. Moreover NMFS has failed to exhaustively document the full range of anthropogenic noise sources potentially affecting gray whales throughout the species range. It also failed to provide a comprehensive review of all of the relevant research, much of	

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	which NMFS funded or been closely involved with, on the general subject of ocean noise impacts in marine ecosystems to the more specific subjects of ocean noise impacts on cetaceans or gray whales. It is of particular importance (as well as being required by law) that NMFS consider the cumulative impact of ocean noise on gray whales including the impacts associated with oil and gas exploration activities in the arctic, the military's use of active sonar within and outside the project area, and the constant din of ship/vessel engines that gray whales are subject to as they traverse some of the most crowded shipping lanes in the world during their southward and northward migrations. E. Military activities: Northwest Washington and the Puget Sound area is home to a number of military installations.[62] The range of military activities that occur in the area is substantial and include, but is not limited to, the operation of submarines, flight training, explosive testing and training, and ship operations. Despite the number of military facilities in the area and the military's extensive use of Puget Sound, the Strait of Juan de Fuca, and the northwest Washington coast, NMFS provides no information about the military use of the project area and/or its use of areas throughout the migratory range of the gray in the Draft EIS, how such use may impact gray whales and their habitat, and whether the military is planning to alter, expand, or augment its activities in the area in a manner that will or could adversely impact gray whales. Indeed, in 2007 the U.S. Navy proposed a new plan to expand its testing and training activities in the water of Puget Sound, Hood Canal, and the	

[62] According to a fact sheet from the Commander of the United States Pacific Fleet in regard to the Northwest Training Range Complex Environmental Impact Statement/Overseas Environment Impact Statement, the Puget Sound is home to the third largest concentration of Naval forces, including more than 30 Navy shore commands, two aircraft carriers, 24 ships and submarines, and 31 aviation squadrons.

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	Washington coast through the deployment of more unmanned vehicles, including submersible and aerial weapons platforms, and an increase in war games off the coast, partly in a marine sanctuary. See BreakingNews.com, "Proposed Navy Expansion Could Bring More Undersea Explosions to Washington Waters," September 5, 2007 (http://www.seattleweekly.com/content/printVersion/350097). Such information must be disclosed and analyzed since it is highly likely that many of the activities that the military engages in within and outside the project area will impact gray whales and their habitat. F. Global warming: Of all the threats to the gray whale and its habitat, global warming is by far the greatest. The far-reaching direct, indirect, and cumulative consequences of global warming are adversely impacting gray whales throughout their range, including within the project area. That impact is most significant in the arctic where the warming climate is resulting in a substantial decline in sea ice, the early retreat of sea ice in the spring, an alteration in underwater currents, and changes in storm patterns, frequency, and severity leading to changes in the entire ecology of the region. The physical and temporal changes in sea ice are causing drastic and long-term impacts on the benthos and benthic invertebrates including amphipods that comprise the gray whale's primary prey species. The early retreat of the sea ice leads to a later spring bloom which results in significant alterations to the arctic food web including a chance in species existence, abundance, and composition, altering and/or expanding the numbers of pelagic species, increasing pelagic species consumption of primary and secondary production, reducing availability of prey to benthic invertebrates, and	

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	reducing the diversity and abundance of amphipods and other benthic creatures that are the primary prey consumed by gray whales.[63] The dynamics of these changes are complex but the consequences have significant implications for gray whales and other species that rely on the benthos to survive as all either have to switch prey or expand their range to find locally abundant patches of benthic invertebrates. These changes are not only resulting in alterations to the species assemblages in various areas within the Bering and Chukchi Seas (which represent gray whale summer habitat), but they favor species that occupy the pelagic system versus those that rely on the benthos like gray whales. As a consequences, gray whales are forced to emigrate further north in search of the necessary prey species in sufficient quantities to meet their energetic needs. As the ocean continues to warm, these impacts will only expand further harming gray whales and other species that depend on benthic invertebrates for survival. In addition, the increasing water temperatures allows for new species, including invasive species, to expand their range and potentially to compete with gray whales for what's left of the benthic invertebrates. Warmer sea temperatures also facilitate the direct invasion of novel disease organisms or parasites that may adversely impact benthic invertebrates. Such impacts are ecosystem wide and, in time, will only escalate. Because of such substantial changes to the entire ecosystem, it is of no surprise that gray whales are being seen further north than ever before. These whales are attempting to locate alternative feeding sites. The expansion in the range	

[63] Any trawling activities that are permitted within the summer feeding areas utilized by gray whales would also have to be considered as part of any analysis as such activities would also directly and adversely impact benthic invertebrates reducing the amount of prey available for gray whales.

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	of the gray whale is not without consequences as the further north the whales are the longer it takes them to migrate to Mexico. Thus, the increased sightings of newborn calves off the coast of California is entirely expected given the changes in the movements, distribution, habitat use patterns, and general ecology of the gray whales in their arctic summering areas.[64] Though the Draft EIS contains a section on cumulative impacts, NMFS has failed to adequately evaluate all relevant cumulative impacts associated with the proposed action. Wind energy projects, oil and gas exploration and exploitation activities, algal blooms, military use of gray whale migratory habitat, and ocean noise issues are just a few of the impacts that must be evaluated in a more comprehensive assessment of cumulative impacts. The existence, expansion, and impacts inherent to these issues are not speculative. Either they are ongoing at the present time and/or are planned for the future. As a consequence they all qualify as reasonably foreseeable and, therefore, must be evaluated in a cumulative impact analysis.	
AWI22	**5. NMFS assessment of the status of the gray whale and is inadequate and incomplete:** For well over a decade, NMFS and its biologists have consistently claimed that the ENP gray whale population had recovered to meet or exceed its original, pre-exploitation population size. Though the current gray whale population estimate of 20,110 (Rugh et al. 2008) is much lower than the maximum estimate of 29,758 estimated in 1997/98, Draft EIS at 3-98, NMFS believes that the declining numbers and decreasing rate of productivity is reflective of a species that	We continue to conclude that the ENP gray whale population is at OSP, as described in the new DEIS, Subsection 3.4.3.3.4 ENP Status, Carrying Capacity, and Related Estimates. See responses to specific points below. The new DEIS discusses all available data regarding the status of the ENP population (Subsection 3.4, Gray Whales). Both the 2008 and the new DEIS thoroughly discuss the 1998-2000 strandings of ENP gray whales (Subsection 3.4.3.1.7, Stranding Data).

[64] Due to the inadequate opportunity for public comments on the Draft EIS a more detailed analysis of the impacts of global warming on the gray whale and its habitat is not possible at this time. Such an analysis is being prepared and will be submitted in a supplemental comment letter.

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	has hit or exceeded its so-called carrying capacity and whose numbers are modulating to be consistent with what the habitat can support. NMFS largely downplays the importance of the significant increase in gray whale strandings in 1999 and 2000 when at least one-third of the population disappeared just as it largely ignores the recent increase in reports of "skinny" whales, claiming again, that these adjustments are evidence of gray whale numbers exceeding the carrying capacity of their range.	
AWI23	In addition, instead of conceding the significance of the findings on pre-exploitation gray whale populations presented by Alter et al. (2007), NMFS attempts to discount these findings (which concluded that the pre-exploitation size of the gray whale (western and eastern) may have numbered up to 117,700 whales or nearly six times the current estimated number of ENP gray whales by either raising questions about the validity of Alter's analysis or claiming that the lowest population size estimate presented by Alter of 30,000 whales is close to the upper estimate of gray whale abundance calculated by NMFS.[65] Draft EIS at 3-61, 3-71. The findings of Alter et al. (2007) pose a unique dilemma for NMFS since it demonstrates that: 1) the current gray whale population is nowhere close to the historical "carrying capacity" of the habitat making previous NMFS claims that gray whales have met or exceeded the carrying capacity inaccurate; 2) that the gray whale is nowhere close to recovered potentially requiring relisting under the Endangered Species Act and a complete recalculation of the PBR using a reduced recovery factor; and/or 3) that the carrying capacity of gray whale habitat has	The new DEIS discusses the issue of carrying capacity of the ENP gray whale stock, referencing Alter et al. (2008), Alter et al. (2012), and other relevant publications subsequent to the release of the 2008 DEIS. We kept these comments in mind as we developed that discussion. As explained in the 2008 and new DEIS, we consider carrying capacity to be the current carrying capacity of the habitat (Subsection 3.4.3.4.5, Estimates of Carrying Capacity (K), OSP, and PBR).

[65] The argument by NMFS that Alter et al. (2007) lower population estimate of 30,000 is close to the upper estimate calculated by NMFS is incorrect. Alter et al. reported, based on their genetic analysis, that the long-term effective population size of gray whales is between 31, 175 and 38,084 breeding adults but that, when the effective size is adjusted to include non-reproductive adults and juveniles they determined a total historical population of 78,500 to 117,700 gray whales.

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	been reduced substantially due largely to anthropogenic impacts (i.e., global climate change and its considerable wide-ranging impacts to Arctic ecosystems, arctic food webs, and the benthic community) which are ongoing and which pose immediate and long-term threats to the gray whale. The reality is that there has been a significant regime shift in the Arctic which has had direct, indirect, and cumulative impacts on gray whales, their habitat, and their primary food source (i.e., benthic invertebrates and specifically amphipods) and which has led to dramatic changes in gray whale ecology, biology, behavior, and productivity. These changes are not merely anomalies of short-term significance but, rather, will have long-term consequences to the survival and viability of gray whales. Indeed, though the polar bear has become the image of the impacts of global warming, the gray whale could easily occupy that role as its future is as tied to the ravages of climate change as is that of the polar bear. The concept of "carrying capacity" is highly controversial because of its immense variability. In terrestrial ecosystems, though carrying capacity is frequently used in the management of wild animals, it is a constantly moving target since it can be so easily influenced by so many factors (e.g., climatic events such as rainfall amount, ambient temperatures, drought, snow depth or snow-water equivalent). Marine ecosystems, including the Bering Sea, can also experience rapid change altering the "carrying capacity" of any marine environment for any species from amphipods to whales. Therefore, though NMFS continues to rely on the concept of carrying capacity in its management (or mismanagement) of gray whales, it must concede that the concept is controversial and not particularly meaningful given its significant variability.	

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	More importantly, though NMFS has consistently held that the ENP gray whale population is recovered and is at or in excess of its historical pre-exploitation population size, there is considerable reason to question these assertions. Fundamentally, the results of Alter et al. (2007) demonstrate that the actual historic population size of gray whales was several times larger than the current combined estimate of ENP and Western North Pacific gray whales. Alter's finding also call into question the legitimacy of Rugh et al. (2008) claim that the ENP gray whale carrying capacity is 23,686. Draft EIS at 3-70. Either that estimate is far too low or the impacts of global warming have so altered the habitat of the gray whale, particularly its arctic summering areas, that it can't sustain the number of gray whales that existed prior to commercial exploitation of the species and which now threatens the existence of the remaining gray whales. In the Draft EIS, NMFS fails to accurately present the findings of Alter et al. by claiming that they estimate the pre-exploitation size of the gray whale population to be only two to four times larger than the current estimate, when in reality their estimate of up to 117,700 gray whales historically is nearly six times the present estimate. Moreover, besides downplaying the significance of this estimate by suggesting that Alter's lower confidence interval range of 30,000 is within the confidence limits for current gray whale estimates of carrying capacity reported by Wade (2002), Draft EIS at 3-61, 3-71 (but see footnote 10), NMFS then claims that Palsboll et al. (2008) have questioned the results reported by Alter et al. (2007). Beyond simply providing this reference, NMFS fails to include any summary of what Palsboll et al. concluded, how	

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	they reached their conclusion, and whether NMFS concurs with said conclusion. Instead, NMFS completely circumvents any substantive analysis of Alter et al. by claiming that "it intends to address the findings of Alter et al. (2007) and other researchers as part of the next update of the stock assessment report for the ENP gray whale stock." Draft EIS at 3-64. Palsboll et al. (2008) was not a published peer-reviewed study nor did it contest the evidence or methods used by Alter et al. Rather, it was a letter to the editor of the Proceedings of the National Academy of Sciences suggesting that there could have historically been gene flow into the North Pacific via gray whales in the Southern Hemisphere which would mean that the pre-exploitation abundance estimates of Alter et al. (2007) are applicable to globally rather than in the North Pacific. Thus, Palsboll et al. do not question the results of Alter et al. but suggest that their results may be applicable to a global population of gray whales and not to the number of gray whales in the North Pacific. Palsboll et al. indicate that subfossil records of gray whales have been limited to the North Atlantic and offer no proof that gray whales occurred historically in the Southern Hemisphere. The mere fact that the existence of gray whales in the Southern Hemisphere may be "plausible" as suggested by Palsboll et al. is not sufficient to ignore the findings and implications provided by Alter et al. Given the significance of the findings of Alter et al. (2007) to the management of gray whales including whether the ENP gray whale should be designated as a depleted species and considering the legal requirements inherent to the development of an EIS, NMFS cannot avoid subjecting this issue to substantive analysis in the Draft EIS simply by claiming that it will address it in another, separate document. NMFS is	

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	free to include any analysis it may choose in its 2008 gray whale stock assessment report but it can't use that report as an excuse not to provide an analysis of this issue within the pages of the Draft EIS. Thus, not only did NMFS err in failing to discuss the findings of Palsboll et al. (2008) but it also erred in failing to disclose and discuss all relevant information pertaining to the findings of Alter et al. (2007) and its analysis of that study in the Draft EIS.	
AWI24	While the findings of Alter et al. (2007) merit far greater analysis in the Draft EIS given their significance to many NMFS assumptions about gray whales, NMFS gray whale population estimates also deserve scrutiny. Rugh et al. (2008) estimate that there are currently approximately 20,100 ENP gray whales. Such estimates are a product of data collected during shore-based counts conducted in California. Such data is manipulated to compensate for several correction factors (e.g., to compensate for whales missed by observers, whales traveling during the night, whales traveling too far offshore to be observed, errors in pod size estimates, whales missed due to poor visibility conditions) to produce abundance estimates with confidence intervals. There is, of course, the potential for serious error in the methodologies used to count whales and estimate gray whale abundance including the experience level of observers, their attentiveness, visibility conditions, ability to see migrating whales, inaccurate recording of count/distance data, and the validity of the correction factors used to determine abundance estimates. Despite its use of multiple correction factors, NMFS only disclosed one correction factor (used to correct for the number of whales passing the observation points at night) in the Draft EIS (see page 3-97). Though the other correction factors may be contained in one or more of the studies cited	The new DEIS describes the 2009 estimates of ENP gray whale abundance (Laake et al. 2009) and the updated estimates of Durban et al. (2013). It also describes updated information on calf counts (Perryman et al. 2011; Perryman and Weller 2012). There are always uncertainties inherent in estimating abundance and other population parameters. Laake et al. (2009) and Durban et al. (2013) describe the confidence values associated with their estimates. We use the minimum population estimate (Nmin) in calculating PBR. As described in more detail in the new DEIS, there is a 95% probability that the true abundance is greater than Nmin (Subsection 3.4.2.1.4, Defining and Calculating PBR), based on the 3-year average abundance. In contrast, Laake et al. (2009) and Durban et al. (2013) use a single year abundance estimate and a 90% confidence value.

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	by NMFS, it fails to disclose in the Draft EIS these factors and fails to provide any summary of the methodology used to calculate such factors and the assumptions inherent to said factors. It would appear therefore, that NMFS is so confident in its abundance estimates and its associated correction factors that it expects all interested stakeholders to accept its estimates without question or critical analysis. The population estimates along with northbound counts of gray whales calves are used to determine population productivity rates. According to data collected by NMFS, such rates have declined over time. Again, whether these calf counts and productivity rates are accurate depend on a number of assumptions inherent in the methodologies used by NMFS.	
AWI25	While NMFS has produced gray whale population estimates for many years over the past several decades, it is these very estimates that raise concerns and questions about the validity of the methodologies used by NMFS to produce such estimates. A number of these estimates are provided below in Table 1 which was taken from the Draft EIS at page 3-98. A review of these data demonstrate, in some years, significant estimated increases in gray whale abundance above and beyond what is likely to be biologically possible based on what is known about the gray whale's reproductive characteristics. Table 1: Gray whale population estimates from 1967 to 2007: Table 1: Gray whale population estimates from 1967 to 2007: Year Population Estimate	The commenter observes that there are some years without abundance counts. This is because no counts were completed in those years, as described in Laake et al. (2009) which reports a new set of abundance estimates conveyed in the new DEIS.

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	1967/68 13,776 1968/69 12,869 1969/70 13,431 1970/71 11,416 1971/72 10,406 1972/73 16,098 1973/74 15,960 1974/75 13,812 1975/76 15,481 1976/77 16,317 1977/78 17,996 1978/79 13,971 1979/80 17,447 1984/85 22,862 1985/86 21,444 1987/88 22,250 1992/93 18,844 1993/94 24,638 1995/96 24,065 1997/98 29,758 2000/01 19,488 2001/02 18,178 2006/07 20,110 An initial review of this table reveals several things. First, and most obvious, NMFS has not disclosed population estimates for every year from 1967/68 to the present. Either the estimate doesn't exist or NMFS simply chose to exclude that estimate from disclosure in the Draft EIS. Considering that gray whale counts have been conducted annually since 1967, Draft EIS at 3-97, data should theoretically be available to develop a population estimate for each year.	
AWI26	For the purpose of this analysis, where there are large gaps in population estimates (e.g., between 1979/80 and 1984/85) it is assumed that the gray whale population increased by a fixed amount (calculated by subtracting the smaller estimate from the larger and dividing by the number of missing years) each year. So, for example, the gray whale population increased by 1,354 whales each year from 1980/81 through 1983/84. The same formula was used if the population declined between two estimates (e.g., between 1987/88 and 1992/93). Thus, in	The commenter is correct that the ENP gray whale population declined by nearly a third during 1998-2000, as described in the 2008 and new DEIS (Subsection 3.4.3.1.7, Strandings). A new set of abundance estimates was developed by Laake et al. (2009) and these area conveyed in the new DEIS.

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	those years the gray whale population declined by 851 whales each year from 1988/89 through 1991/92. The substantial decrease in the estimated size of the gray whale population from 1997/98 to 2001/02 reflects a period when there was a considerable spike in documented gray whale strandings which some attributed to the impacts of starvation caused by the gray whale population exceeding their carrying capacity though there is considerable evidence (as discussed in this comment letter) that starvation is not an adequate explanation for this decline. If these estimates are accurate, then over a third of the gray whale population was lost between 1998 and 2001.	
AWI27	Finally, the variability in the gray whale population estimates over time is rather stunning suggesting that the gray whale population is subject to significant increases and decreases. This, of course, assumes that the estimated population sizes are accurate which, as explained below, remains in doubt. While any decrease, even of several thousand animals between years, is biologically possible given the multitude of threats to gray whales and their habitats, not all of the documented increases would appear to be biologically possible based on what is known about gray whale reproductive biology.	The variability in abundance estimates is likely a combination of actual fluctuations in abundance over time in response to environmental variables and also the confidence intervals around each year's estimate (Laake et al. 2009).
AWI28	There are at least two ways to check the validity of these estimates. First, if one assumes the corrected calf counts are accurate then, given information about the reproductive characteristics of gray whales (average age at sexual maturity, calf birth interval) one can determine the population structure needed to produce that number of calves and compare that to the total population estimate to see if the structure is feasible. This methodology requires that the direct calf counts and the formulas used to correct such counts are accurate. NMFS failed to disclose in the Draft EIS the corrections factors for calf	The 2008 DEIS cited several sources of scientific information regarding calf counts, including Perryman et al. (2002), a published paper that describes in detail the methods, assumptions, and calculations used to estimate calf abundance (Subsection 3.4.3.4.3, Calf Production Data). The paper describes the standard scientific methods used to account for probability of detection. The new DEIS includes updated calf counts presented to the IWC in Perryman et al. (2011), which relies on the methods reported in Perryman et al. (2002) (Subsection 3.4.3.1.5, Reproduction and Calf Production).

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	counts and/or the assumptions inherent in such factors. It also failed to acknowledge the difficulty in counting new born calves due to their small size, sea conditions, presence of their mothers (making direct observation difficult), and the small size of their blow. Alternatively, if sufficient biological information about gray whales was known and disclosed, one could create a simple model to calculate the expected demographics of the population over time and then compare those results to the population estimates produced by NMFS.[66]	
AWI29	Unfortunately, NMFS has failed to disclose in the Draft EIS (either purposefully or because it does not have such data) the various biological characteristics necessary to develop a simple model to estimate population abundance. Some of these elements are disclosed such as age of first reproduction in female gray whales (average of 8 years of age), Draft EIS at 3-68,and the frequency of calving (one calf every other year), Id. What's missing includes the estimated age of reproductive senescence, the population's sex-ratio, the population's age structure (i.e., percent calves, percent non-reproductive juveniles, percent in reproductive prime, percent older-aged animals that are not productive), age and sex-specific mortality rates, and the number and sex of gray whales killed per year as a result of aboriginal whaling and other human-caused mortality factors.[67]	The most straightforward method of estimating abundance is to count individual animals. This is the method employed since gray whale counts began in the 1960's. The gray whale migration close to shore offers a unique opportunity to monitor abundance of the population. The methods of estimating abundance were described in the 2008 DEIS (Subsection 3.4.3.4.1, Abundance Data). The new DEIS relies on Durban et al. (2013) which presents a thorough description of the updated method for estimating abundance.

[66] In regard to the second method to assess the validity of the NMFS population estimates, the insufficient opportunity to submit comments on the Draft EIS do not permit the further development and use of that methodology at this time. An amended or supplemental comment will be submitting providing that analysis in the near future.

[67] Had NMFS provided a sufficient opportunity for the public to comment on the Draft EIS, AWI would have attempted to scour the gray whale literature to determine if such characteristics have been estimated by gray whale researchers.

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	A list of those biological/reproductive characteristics that would need to be disclosed in order to undertake a more critical examination of the validity of the NMFS population estimates include: 1) a female gray whale becomes reproductively mature at 8 years of age (Draft EIS at 3-68); 2) reproductively mature gray whales produce a calf every two years under ideal habitat/environmental conditions (Draft EIS at 3-68); 3) age-specific productivity rates for female gray whales; 4) the sex-ratio of the ENP gray whale population; 5) the proportion of reproductively mature ENP gray whales in the population; 6) gray whale age-specific mortality rates; and 7) number and sex of gray whales killed annually as a result of anthropogenic impacts. Using the first method of assessing the accuracy of these population estimates requires information about calf production. This information is provided in the Draft EIS (see page 3-107). For example, in 2005 the corrected calf count was 945. If we assume this estimate is accurate, that there is no calf mortality, and that reproductively mature gray whales give birth every other year then in 2005 there were 945 pregnant whales and a total of 1,890 reproductively mature female gray whales. Considering that the estimated total gray whale population in 2005 was, based on the data in Table 1 (corrected for the lack of estimates provided for each year), approximately 20,000 whales that would mean that less than 10 percent of the total population consisted of sexually mature female whales. If there is a 1:1 sex ratio in the population this would mean that only approximately 20 percent of the	

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	population or slightly less than 4,000 whales are adult whales. Conversely, this would mean that 80 percent of the gray whale population were calves or juvenile whales who have not yet reached sexual mortality. Such a small percentage of adult whales in the population just doesn't seem possible or reasonable unless far more adult whales are being killed or are dying (through natural causes) each year than are being reported and/or estimated. A more reasonable explanation for the relatively small number of adult whales is that the overall population estimate is too high since, if the total population estimate was lower, then the proportion of the population consisting of adult whales would be higher. Even if we assume that 10 percent of calves are killed each year before being observed during the northbound migration, this would mean that there were approximately 1,040 pregnant whales in 2005 and a total of 2,080 reproductively mature female gray whales in the population or 4,160 total adult whales (approximately 21 percent of the total estimated population). In 2004, with a corrected estimate of 1,527 gray whale calves, assuming no calf mortality, this would correspond to 1,527 pregnant whales and a total of 3,054 reproductively mature female whales or 6,108 total adult whales (or nearly 32 percent of the total estimated population based on the data presented in Table 1 (as corrected)). If a ten percent calf mortality rate is included, this would increase the proportion of sexually mature whales in the population. While the percentage of adults in the overall population was, based on this analysis, slightly higher in 2004 compared to 2005, it is difficult to explain how 1,527 calves were estimated in 2004 while only 945 were estimated in 2005. Considering that adult	

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	female whales allegedly produce a calf every other year, this significant difference in calf production estimates suggest that there was either a significant decline in the number of pregnant whales between the two year, a smaller proportion of the adult females were pregnant in 2005 versus 2004, the calf production estimates are incorrect, or that there was significantly more calf mortality in 2005 compared to 2004. If NMFS had provided an adequate opportunity for the public to comment on the Draft EIS, additional analysis of calf production compared to overall gray whale population estimates could have been provided at least going back to 1994. Suffice it to say that if such an analysis was conducted it would generate similar questions about the accuracy of the overall population or calf production estimates. Based solely on the analysis provided above, it is clear that NMFS must provide a more detailed analysis of its calf production estimates, how they correspond to the overall population estimates, and whether a relationship between calf production and overall population estimates is feasible or possible. In regard to the second methodology, the information contained in the Draft EIS is not sufficient to develop a simple model to calculate expected gray whale productivity. Said information either may exist but was not disclosed in the Draft EIS or some or all of it does not exist and is unavailable for use in developing such a model. NMFS should, however, disclose all relevant biological and reproductive data on the gray whale to permit the development of a model to test the validity/accuracy of its population estimates. This analysis also suggests that there are significant deficiencies and/or inaccuracies in the methodology used by	

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	NMFS to estimate population sizes. Ultimately, the NMFS estimates do not appear to be accurate or reliable and, indeed, seemingly overestimate the size of the gray whale population. Whether this is done intentionally to mask a population decline that may justify relisting the gray whale under the ESA or to mask serious threats to the gray whale and its habitat posed by global warming (to avoid creating another iconic victim of global warming to be used to generate increased pressure on the Bush Administration to seriously address the issue in ways that may impact the lucrative and influential oil and gas industry) is unknown. Regardless, it is clear that these estimates are not reliable and that NMFS must provide a more detailed analysis of its population estimation methodologies, potential deficiencies in the methodologies, provide explanations for how the gray whale population can possibly demonstrate annual increases that are biologically impossible, or concede that its estimates are too large and develop a new series of more reasonable estimates.	
AWI30	Finally, as previously mentioned, NMFS documented a significant spike in gray whale strandings in 1999 and 2000. Indeed, according to NMFS's gray whale population estimates, at least one-third of all ENP gray whales disappeared between 1998 and 2001. Remarkably, of the 651 stranded gray whales documented in 1999 and 2000, only 3 stranded whales were examined thoroughly enough to determine a cause of death. Draft EIS at 3-103. Of these three whales, one was diagnosed with a viral infection (equine encephalitis), one had an unusually intense infection of parasites, and the last was intoxicated with domoic acid which apparently is a product of algal blooms. Id. Despite failing to document the cause of death for the majority of stranded whales, their emaciated condition, evidence of low lipid concentrations, and decreases in calf production during the same time frame led many	The die-off of ENP gray whales between 1998 and 2000 remains a concern, though the recovery of the population from that event is encouraging. The 2008 DEIS described that event and reviewed the scientific literature analyzing that event (Subsection 3.4.3.4.2, Stranding Data). The new DEIS includes that discussion and relevant information since 2008 (Subsection 3.4.3.1.7, Strandings). It is difficult to draw inferences about future abundance trends based on the die-off. Both the 2008 DEIS and the new DEIS evaluate potential scenarios for the future of the population in the discussion of cumulative effects (Subsection 5.4, Gray Whales).

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	researchers to identify starvation as the likely cause of the strandings and deaths. Id. This led to two theories for the cause of such massive starvations. One was that some factor or factors affecting climate (i.e., the 1997 and 1998 El Nino, Pacific Decadal Oscillation, and Arctic Oscillation) led to a decline in prey availability. The other theory was that the gray whale had exceeded the carrying capacity of its habitat and the die-off was a product of a declining prey base caused by intense intraspecific competition. Id. NMFS concedes that both theories are imperfect due to the suddenness of the demographic change and the relatively larger amount of adult whales that stranded. Id. In addition, according to Gulland et al. (2005) some of the stranded animals were actually in good to fair nutritional conditions raising questions about the starvation theory. Considering the findings of Alter et al. (2007) that the pre-exploitation size of the gray whale population was up to six times higher (117,700) than the present estimate and given the documented impacts of the ecosystem regime shift affecting the arctic (including the Bering and other seas that provide gray whale habitat) reported by a number of scientists (as discussed in this comment letter), it is more likely that the increase in stranding was related to a significant decline in the abundance and density of prey in the gray whales' summer feeding areas and a possible delay in the whales locating alternative prey. Unfortunately, as global warming continues to adversely affect arctic ecosystems, such massive gray whale mortality events will likely become more common as benthic production declines and as lightly or non-exploited patches of benthic prey are found and consumed. This is entirely consistent with the increased observation of "skinny" whales (11 to 13 percent	

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	of whales observed in 2007 in Laguna San Ignacio) observed in the calving-breeding lagoons in Mexico. Draft EIS at 3-104. Given the specific substrates necessary for amphipods to survive and thrive, the availability of amphipod prey is finite since their range is finite. Additional discussions of these threats are provided in other sections of this comment letter.	
AWI31	**6. NMFS has failed to consider a full range of reasonable alternatives:** Chapter 2 of the Draft EIS describes each of the alternatives subject to serious consideration in the Draft EIS and those alternatives that were ostensibly considered but rejected. NEPA requires an agency to consider a range of reasonable and feasible alternatives. NMFS has blatantly failed to meet this standard. Before identifying specific alternatives that NMFS rejected from consideration without merit and/or alternatives that NMFS completely failed to consider, a few comments on the alternatives included in the Draft EIS are warranted. In regard to the proposed action (Alternative 2), it is important to note that the proposal to photograph gray whales in order to determine if they are resident whales only applies to "harvested" whales. Thus, any whale that is struck and lost would not be photographed since they would never be landed. The geographic limitations contained in Alternative 2 only prevent whaling within the Strait of Juan de Fuca but allow whaling within the remainder of the Makah's U&A with the exception of the month of May during which time the Makah would not hunt whales within 200 yards of Tatoosh Island and White Rock to minimize disturbance to feeding and nesting sea birds. Draft EIS at 2-15. Tatoosh Island and White Rock are only two of many islands that exist off the western coast of	The commenter is correct about the Tribe's proposal. The 2008 DEIS evaluates the potential impact of this aspect of the Tribe's proposal (e.g., Subsection 4.1.2, Alternative 2), as does the new DEIS (e.g., Subsection 4.1.2, Alternative 2). Alternative 2 is the Tribe's proposed action. It is therefore reasonable to analyze. Regulations of the Council on Environmental Quality require federal agencies to analyze alternatives even if there is no authority to take actions contemplated. Analysis of alternatives provides information for the decision-maker. Inclusion of an alternative for analysis does not mean the alternative and all its elements can or will be implemented. The new DEIS does not include an alternative that would restrict hunting around all islands. This alternative was considered but not analyzed in detail because Alternative 3 would require hunting to occur at least 5 miles from shore. Alternative 3 therefore adequately presents an analysis of a hunt that would avoid hunting around the islands (Subsection 2.4, Alternatives Considered but Eliminated from Detailed Analysis).

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	Washington. Many of these islands within the Makah U&A are part of the Washington Island National Wildlife Refuge managed by the U.S. Fish and Wildlife Service (FWS). In its 2007 Comprehensive Conservation Plan for the refuge the FWS recommends the establishment of a boat-free zone 200 yards around each island to protect island wildlife. Consequently, Alternative 2, unless amended to prevent whaling within 200 yards of all FWS-managed coastal islands throughout the entire whaling season, would be inconsistent with management measures recommended by another federal agency to protect wildlife that utilize said islands.[68]	
AWI32	Alternative 2 includes provisions ostensibly to improve the safety of any hunt for the whalers, those who may protest the hunt, and others who may be working/recreating in the vicinity of the hunt (including on land). Such provisions include a requirement that the barrel of the rifle be above or within 30 feet from the target area of the whale, that a .50 caliber or .577 caliber rifle be used as the primary rifle, that a rifleman should only fire at a downward angle, that the rifleman's proficiency in using rifles used in the hunt should be documented, that there must be a minimum visibility of 500 yards in all directions when a whale is harpooned, the rifle must be pointed away from the shoreline where highway 112 closely parallels the shoreline, and that the rifleman's view be clear of all persons, vessels, building, vehicles, highways, and other objects or structures that, if hit, could result in an injury to a person or damage to property. Draft EIS at 2-16, 3-293, 3-	We note the recommendation to add a safety provision that the hunt be suspended if visibility is less than 500 yards. The new DEIS treats this recommendation as a recommendation for an additional alternative (Subsection 2.4, Alternatives Considered but Eliminated from Detailed Analysis).

[68] While such an amendment to Alternative 2 would make it identical to Alternative 4, as written, Alternative 2 cannot be considered reasonable or feasible since it would allow whaling to occur within 200 yards of various FWS-managed islands in violation of a FWS recommendation for a boat-free zone designed to protect wildlife, including birds, that use those islands as nesting, resting, or breeding habitat. While the FWS restrictions may only be voluntary (since the OCNMS and not the FWS manages the waters surrounding the islands), NMFS cannot or should not identify as its proposed action an alternative that would allow any activity that the FWS has recommended be prohibited around the islands to protect refuge wildlife.

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	294. Additional safety criteria would include the suspension of the hunt if visibility is less than 500 yards in any direction. Id.	
AWI33	Despite these precautions, the Makah Department of Fisheries Management intends to work with the Coast Guard to close off the designated whale hunting area to recreational and commercial vessel traffic during the hunt, Draft EIS at 2-16, suggesting that the proposed hunt would still pose a considerable threat to public safety. Indeed, it is difficult to consider a more dangerous mixture of elements than what would be present in any whale hunt including a moving boat, rolling seas, a moving and likely injured target, a high-powered rifle and/or explosive device, within an area that can, at time, be heavily used by people including tourists, commercial and recreational fishers, and others. This concern is the alleged primary reason for the U.S. Coast Guard's establishment of a regulated navigation area in the Strait of Juan de Fuca and adjacent coastal waters of northwest Washington. Specifically, the Coast Guard found that "the uncertain reactions of a pursued or wounded whale and the inherent dangers in firing a [.50 caliber] hunting rifle from a pitching and rolling small boat area likely to be present in all future hunts, and present a significant danger to life and property … ." Draft EIS at 3-10 citing 64 FR 61212, November 10, 1999.	The public safety aspects of the Tribe's proposed hunt and alternatives is analyzed in the 2008 DEIS (Subsection 4.15, Public Safety) and the new DEIS (Subsection 4.15, Public Safety).
AWI34	Finally, NMFS states that under Alternative 2, Makah whaling team members "may also partake in spiritual preparations." Draft EIS at 2-16. While it would be impossible for NMFS to ensure that any and all members of any Makah whaling team partake in the traditional spiritual preparations for the hunt, considering that the Makah have consistently pushed for this hunt both based on an alleged treaty "right" and to revitalize its culture, spiritual interests, and ceremonies, all Makah whaling team members and, frankly, their family members should be required, to the extent possible, to engage in all	The recommendation to require hunters to participate in spiritual ceremonies is noted. The new DEIS treats this recommendation as a recommendation for an additional alternative (Subsection 2.4, Alternatives Considered but Eliminated from Detailed Analysis).

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	traditional spiritual preparations. If the Makah were permitted to whale without requiring it to engage in both physical and spiritual preparations for the hunt --- as done by its ancestors – then this entire exercise is not about restoring traditional practices but, rather, is only about killing whales. The Makah cannot have it both ways. It cannot, on the one hand, claim that it must be allowed to whale in order to revitalize its culture and to restore its spiritual connections to the whales while, on the other hand, allow any member of the whaling team and/or their family members to unilaterally decide whether they will or will not partake in such spiritual preparation both before, during, and after the hunt. The Draft EIS suggests that each whaling family engaged in different spiritual preparations for a hunt. This may be true but at least traditionally and historically each whaling family prepared both physically and spiritually for the hunt; it wouldn't have been acceptable for any whaler or his family to simply choose not to engage in such preparations since it was believed that there was a direct link between said preparations and the success of the hunt. Though enforcement of any permit condition requiring Makah whalers and their family members to partake in traditional physical and spiritual preparations for any whale hunt (if permitted) would be difficult, NMFS should include such a requirement in any permit and/or whaling management plan created to implement a hunt given the tribe's stated reasons for desiring to hunt whales.	
AWI35	Among the alternatives subject to consideration in the Draft EIS, several alternatives cannot meet the test of being feasible and/or reasonable and, therefore, must not be considered as viable alternatives in the NEPA process.	These comments are addressed above.

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	For example, Alternative 2 is not reasonable because it does not include a prohibition on hunting whale within 200-yards of the coastal islands managed by the FWS (see discussion above). In addition, Alternative 2 can't be considered reasonable because the provisions intended to ostensibly minimize the killing of resident whales will not work because: photographs will only be taken of landed whales; it is unclear who has access to or maintains the resident gray whale photographic identification catalog; the inevitable delay in updating that catalog given time and financial constraints; the logistics of determining if a gray whale killed by the Makah is a resident whale have not been divulged; and for other reasons.	
AWI36	Finally, as NMFS concedes, Alternative 2, if implemented, could result in a maximum of four resident whales being killed by the Makah in excess of the calculated PBR of 2.4 whales based on the estimated number of previously seen residents whales in the ORSVI in 2005. Draft EIS at 2-29. NMFS goes on to admit that if a maximum of four residents whales were killed, they would not be replaced in a subsequent year.[69] Id. In reality, since both the Makah and NMFS are assuming for the purpose of management and the evaluation of environmental impacts, that all seven potentially struck whales in a single year are considered to be killed (whether landed or not), all seven of the whales struck in any one year under Alternative 2 could be resident whales. If this occurred, the PBR for resident whales (as specified in the Draft EIS based on the number of resident whales in the ORSVI in 2005) would be exceeded by 4.5 whales with nowhere near that many resident whales likely to be replaced the following year within the Makah U&A.	The 2008 DEIS described a 'worst case scenario' in which two PCFG whales are struck and lost and two are killed (Subsection 4.1.2, Alternative 2). This comment posits an even worse scenario for PCFG whales, which is that PCFG whales are killed and landed but are not counted against the bycatch limit because they had not been previously identified (either because they had not been photographed or because they were newly recruited). The new DEIS acknowledges the possibility that this could happen, with the result that seven PCFG whales could be killed in a year. The footnote to this comment asserts there is an inconsistency in the analysis in the 2008 DEIS because the analysis finds that if four whales were killed per year this would exceed PBR (2.4) but not exceed the observed rate of replacement (4). PBR and rate of replacement are not the same thing, particularly for a group of whales with high levels of immigration.

[69] However, in other sections of the Draft EIS NMFS claims that the loss of four resident whales could be replaced in the following year given the alleged average annual increase in resident whales in the Makah U&A. Such conflicting statements must be addressed.

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AWI37	Alternatives 3, 4, and 6 also are not reasonable as required by NEPA as each could result in an excessive slaughter of resident whales with no likelihood that the lost whales would be replaced the following year. Draft EIS at 2-29. If NMFS and the Makah are serious about protecting resident whales and if NMFS believes (and can prove which it hasn't done yet) that establishing a resident whale subquota by setting an ABL using the PBR formula will provide sufficient protection for resident whales then it should only consider alternative management actions where it can ensure that the PBR will not be exceeded. Any alternative that allows for the resident whale PBR to be exceeded is, therefore, not reasonable since it would undermine the entire purpose/reason of establishing a resident whale subquota.	The new DEIS presents a different set of alternatives than the 2008 DEIS. In developing the alternatives for the new DEIS (as with the 2008 DEIS) we did not pre-judge the outcome of the analysis. Rather, we selected alternatives based on a variety of considerations. Subsection 2 of the new DEIS describes our process for selecting alternatives.
AWI38	Alternative 5 would, according to NMFS, allow up to 3 resident whales to be killed annually. While this amount would still exceed the resident whale PBR (based on the estimated number of whales in the ORSVI in 2005) by one-half a whale per year it is much closer to the PBR quota than any of the other alternatives. This is not to say that Alternative 5 is acceptable though its potential impacts to resident whales are less than the other alternatives (with the exception of the no-action alternative (Alternative 1)). A more precautionary approach, assuming the U.S. intends to grant the Makah's waiver request and issue it a permit to kill whales, would be to establish a resident whale subquota that is one-half the PBR calculated based on the estimated number of previously seen resident whales within the ORSVI or to set the PBR for resident whales based on the estimated number of resident whales within the Makah U&A. If this were done the resulting ABLs would be lower than those provided in the Draft EIS.	The commenter recommends alternatives to setting mortality limits on PCFG whales, including setting the limit at one-half of the PBR of whales in the ORSVI area, or the PBR of whales in the Makah U&A. The new DEIS alternatives use various approaches for setting mortality limits on PCFG whales, including an alternative that would set the mortality limit at 10% of PBR. The new DEIS also includes different approaches to accounting for mortalities.
AWI39	Given the fact that none of the five action alternatives are reasonable, NMFS, based on the information contained in the	The commenter recommends that the EIS analyze alternatives that eliminate or greatly reduce the potential for killing a PCFG whale. The new DEIS includes

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	Draft EIS, can only select the no-action Alternative (Alternative 1) unless it develops and analyzes new alternatives that either completely eliminate the potential for the killing of a resident whale or ensures that no more than approximately 1 or fewer resident whales can be killed in a single year. For example, one alternative that NMFS failed to adequately consider is to only permit whaling far off the northwest Washington coast within the western portions of the Makah U&A where the great preponderance of whales are likely to be migratory and not residents. NMFS rejected such an alternative by claiming that "there is no area within the Makah U&A that is not potentially frequented by identified (resident) whales." Considering the size of the Makah U&A which, based on the scale of the map on page 3-3 of the Draft EIS,[70] extends some 80 nautical miles into the Pacific Ocean from the northwest Washington coast, it is impossible that resident whales have been found throughout this area given their proclivity to occupy coastal areas where prey is more available. Based on all of the resident whale studies and reports, a general rule of thumb to use to distinguish migratory from resident whales is that the further off shore one goes the greater the likelihood than any whale will be a migratory whale and that whales observed purposefully swimming in a single direction (usually north or south corresponding to the northward or southward migration) versus those circling, floating, or milling about are more likely to be migratory versus resident whales.	Alternative 3, which would restrict hunting to offshore waters within the Makah Tribe's U&A (similar to but not exactly as recommended in this comment). The remainder of the recommendations in this comment are treated in the new DEIS as alternatives not analyzed in detail (Subsection 2.4, Alternatives Considered but Eliminated from Detailed Analysis).

[70] It is possible that the scale of the map included in the Draft EIS (page 3-3) is wrong and that the Makah U&A does not extend as far into the Pacific Ocean as the map suggests. If that is the case, NMFS must provide a more accurate map, describe how far the western border of the Makah's U&A extends into the Pacific Ocean, and provide evidence that so-called identified (or resident whales) have been found throughout that area in order to substantiate its rejection of this potential alternative.

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	A so-called "migratory whale" alternative could be crafted to both minimize (if not entirely eliminate) the potential killing of a resident whale while also imposing additional restrictions on the Makah to both regulate and yet facilitate their whaling effort while also protecting public safety. For example, such an alternative could require that: ● any whale hunt only occur beyond the 12 nautical mile limit off the coast of northwest Washington with the Makah's U&A; ● that only whales (without calves) who are observed purposefully swimming in a northwardly or southwardly direction depending on the season of the year be targeted; ● that Makah initiate the hunt from their traditional canoes but that powered chase boats can be use to tow the Makah to the whaling areas and to tow any killed whale back to shore; ● to mandate that all pursued whales be photographed prior to or during pursuit; ● to require that the safety measures included in Alternative 2 be followed; ● to require the routine and unannounced drug and alcohol testing of all tribal members selected to participate in whaling teams including anyone designated as a whaling captain; ● to require that family-specific traditional physical and spiritual preparation be undertaken before, during, and after any hunt; ● to require that all whale products be consumed only within the boundaries of the reservation; ● and to prohibit the sale of native handicrafts made from any non-edible part of a whale.	

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	While AWI would still oppose such an alternative, it would minimize (if not eliminate) the potential killing of a resident and would address many of the other controversial elements of a Makah whale hunt while still allowing the Makah to whale.	
AWI40	There are, of course, reasonable alternatives that do not involve the killing of any whales (in addition to the no-action alternative) that NMFS should have but did not consider. These alternatives are offered as examples of options that NMFS should have considered and may or may not be supported by AWI, CSI, or EII. In some cases, NMFS considered but rejected such alternatives while, in other cases, NMFS failed to even seriously consider such alternatives. Such alternatives, which should have been seriously considered in the Draft EIS, include but are not limited to: ● Facilitating the development of one or more Makah whalewatching operations by providing government-backed low or no interest loans, training, equipment, and other assistance. In addition to standard whalewatching (or marine mammal watching) ventures, the Makah could be encouraged to offer traditional whalewatching excursions where the non-tribal participants are permitted to be part of a Makah whaling team utilizing traditional dugout canoes to approach gray whales in a manner mimetic of a hunt. No harpoon or other weapon would be carried on the canoe and no direct harm would come to the pursued whale. Unlike the non-hunt alternative considered but rejected by NMFS in the Draft EIS (see page 2-20) because its impacts were similar to the impacts of the no-action alternative, this proposed alternative would not include any mock attack on any whale and would provide a source of revenue for the Makah tribe that could	The recommendations in this comment are treated in the new DEIS as alternatives considered but not analyzed in detail (Subsection 2.4, Alternatives Considered but Eliminated from Detailed Analysis).

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	be used to address the many social, employment, training, and health needs of the Makah people. ● Negotiating with the Makah the development of a package of government-offered and supported incentives in exchange for its temporary or permanent suspension of its effort to exercise its alleged treaty right to whale.[71] Such a package may include: government acquisition and donation of lands of historical, traditional, economic, or spiritual importance to the Makah; government funding for the construction of schools, health clinics, mental health facilities, elder-care facilities, and other facilities to provide short and long-term benefits to the Makah people; government funding to support any professional selected by the tribe to oversee such facilities (in the event that there are no qualified Makah tribal members available to oversee such operations); government funding and assistance to provide job training for unemployed and/or underemployed Makah tribal members; government assistance in securing low or no-interest loans to accomplish other infrastructure improvements on the reservation for the benefit of the Makah people; and any other assistance deemed appropriate to include in such a package. In exchange, the Makah would agree to temporarily (for 20-30 years) or permanently suspend its efforts to exercise its alleged treaty right to whale. That right would not be revoked or abrogated but efforts to	

[71] A review of the "2006 Update to the 2005 Comprehensive Economic Development Strategy (CEDS) – Makah Tribe," prepared by Dr. Sue Wolf and dated December 6, 2006 reveals a number of important projects for which the Makah require funding, training or other services. Such projects include providing adequate health and elderly care services to Makah tribal members, counseling and substance abuse services, providing potable water for drinking, and other critical infrastructure needs that would benefit the entire Makah tribal community. Including funding and training in a government negotiated package to assist the Makah with completing and maintaining such projects for the betterment of the residents of Neah Bay would be an appropriate outlay of federal resources in exchange for a temporary or permanent ban on hunting whales. Moreover, considering such important needs of the Makah community, decisions made by the Tribal Council to spend any of the tribe's funds on its ongoing efforts to engage in whaling would seem to be inappropriate.

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	exercise the right to whale would be suspended. There is precedent for such an agreement as recently a tribe in Canada signed such a deal with a provincial government. NMFS considered but rejected an alternative that included a private party offering compensation to the tribe in exchange for the tribe to forego whaling claiming that such an effort was made in the past but failed. The difference with the proposed alternative is that the government, not a private party, would attempt to negotiate a package deal with the Makah that would provide unique benefits to the entirety of the tribe's people. Simply stated, NMFS has failed to consider a reasonable range of alternatives in the Draft EIS. All of the action alternatives considered are not reasonable by virtue of their potential significant impact on resident whales and for other reasons. Reasonable alternatives that NMFS considered but rejected were ignored for reasons that have little merit or justification. Other reasonable alternatives were completely ignored though they would minimize potential environmental impacts while allowing the Makah to engage in limited whaling or providing generous compensation to the Makah in exchange for their temporary or permanent suspension of whaling.	
AWI41	**7. NMFS discussion and analysis of resident gray whales is incomplete, biased, and confusing:** Considering the emphasis on resident whales contained in the court's ruling in *Anderson v. Evans*, NMFS attempts to more fully and accurately report on the status of resident whales in and outside of the project area. As discussed, below, NMFS' efforts leave much to be desired.	Comment noted.

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	Resident whales are those whales who, for any number of potential reasons, elect not to continue the northward migration to and beyond the Bering Sea preferring to remain in an areas stretching from Northern California to Southeast Alaska during the spring/summer/fall months. The earliest reports of resident whales off the coast of California were from the 1920s. Draft EIS at 3-78 citing Clapham et al. 1997 and Moore et al. 2007. Over time, research efforts to learn more about the number, distribution, movements, behavior, and ecology of residents whales has expanded significantly. As a result, while we know more about resident whales than ever before, much remains unknown. In the Draft EIS, resident whales are separated into three groups based largely on the need to define resident whale habitat geographically for management purposes. The largest group is the PCFA, a slightly smaller group has been defined as occurring within the ORSVI, while the smallest group inhabit the Makah U&A. Though these areas are defined geographically, there is no specific geographical or other barrier between these three different areas and whales are free to move into and out of each area. Photographic identification methodologies are the primary tool used to document, catalog, and monitor resident whales. Over the years, hundreds of resident gray whales have been photographed and cataloged. As new pictures arrive for inclusion in the gray whale catalog maintained by Cascadia Research, efforts are made to match the photographs to exiting photographs. Through such monitoring and matching, scientists can assess resident whale movements, distribution patterns, and habitat use patterns over time.	

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	Admittedly, there are not enough scientists, vessels, or funds to locate, identify, and document every resident gray whale within the entire PCFA every year and though survey methodologies have improved it remains unclear if specific survey transects are run each year, if they are run at the same time each year, if they are run multiple times each year, if the training level of the observers are similar each year, and how or if other variables that would influence the monitoring of resident whales are standardized. It is known, as disclosed in the Draft EIS, that the survey effort varies each year. Each of these factors (and others not mentioned) impact the comprehensiveness and robustness of the data collected on resident whales. So, while data on resident whales has increased over the years and survey/monitoring methodologies have improved, we still don't have any way of identifying and monitoring every resident whale within the PCFA, ORSVI or Makah U&A.	
AWI42	The discussion of resident whales in the Draft EIS is misleading and confusing. Whether this is intentional to distract those reviewing the document or to downplay the potential significance of this unique group of whales is unknown. When the extraneous information is removed from the critical data as is done below,[72] both the importance of the resident whales and the deficiencies in the analysis become more obvious. Of particular importance in this analysis is the estimated number of resident whales, how the abundance estimates changed over time, the distribution and movements patterns of resident whales, and evidence of site fidelity demonstrated by resident whales.	Comment noted.

[72] This analysis assumes that the information about resident whales contained in the Draft EIS accurately reflects the data as presented in various published and unpublished reports and studies. If NMFS had provided an adequate opportunity for the public to review, analyze, and comment on the Draft EIS, AWI would have undertaken its own independent review of the relevant data. AWI intends to undertake such a review and will provide the results of its analysis to NMFS in a supplementary comment letter to be submitted in the near future.

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	In resident whale research conducted off the west coast of Vancouver Island, British Columbia from 1972 to 1981, a maximum of 34 resident whales were documented in any one summer. Sixty-three percent of these whales were seen in more than one-summer while 37 percent were seen only once. These data were used by Darling (1984) to estimate that only 35 to 50 resident whales were present off the coast of Vancouver Island from 1972 to 1981. Draft EIS at 3-79. More recent research, conducted by Cascadia Research from 1984 to 1993, involved surveys for resident whales in the inland waters of southern, central, and northern Puget Sound and Hood Canal, the Strait of Juan de Fuca, and the outer Washington Coast, including Grays Harbor. By 1993, a total of 76 individual photo-identified whales had been cataloged with only 17 being resighted in more than one year during the survey effort. Between year resightings were most common in northern Puget Sound. See Draft EIS at 3-80 citing Calambokidas et al. 1994). The lack of whale resightings during these survey efforts may be due to the whales not returning to the surveyed areas each year or because of the variability in survey effort.	
AWI43	These early efforts, as summarized by NMFS, demonstrated that some resident gray whales remain in the southern portion of their summer range for extended periods of time with some returning to the same general feeding area in multiple years, though not necessarily every year. The studies also documented the arrival of new resident whales every year and a difference in the areas inhabited by the same whales in different years. Despite the variability in survey effort inherent to these studies and other methodological issues that likely affected survey efforts, NMFS concludes that these studies	A considerable amount of scientific information regarding PCFG whales has been developed since the 2008 DEIS was released, which is one of the reasons we terminated the 2008 DEIS (77 FR 29967, May 12, 2012). The new DEIS describes the new scientific information, including information regarding site fidelity of PCFG whales (Subsection 3.4.3.1.2, Global Distribution and Population Structure).

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	demonstrate "a lack of strong site fidelity among resident gray whales" suggesting a lack of uniqueness of this group of whales compared to the larger migratory portion of the population. This conclusion is simply not consistent with the evidence. Darling (1984) documented that 63 percent of his identified whales were seen in more than one summer while Calambokidas found that 22.3 percent (almost one-quarter) of the resident whales in his study were resightings of whales documented in previous years. Depending on how one defines the size of the site for which fidelity is being measured, if the site is broadly defined then these studies, particularly given their methodological flaws, demonstrate a rather high level of site fidelity.	
AWI44	NMFS then became more engaged in the study of resident whales. In 1996 it initiated photo-identification studies of resident gray whales off the coast of Washington focusing on the Strait of Juan de Fuca, the northern Washington Coast, and southern Vancouver Island. These survey areas were eventually expanded to extend south to Grays Harbor and north to west Vancouver Island to increase the probability of sighting gray whales in Washington and British Columbia. See Draft EIS at 3-81. Inexplicably, NMFS fails to summarize the data obtained during these studies in the Draft EIS.	The 2008 DEIS describes NMFS increased involvement in the photo identification studies, as the comment notes. The paragraph cited and the next several pages summarize the results of research conducted by NMFS and others.
AWI45	Most recently, from 1998 to the present, NMFS has funded and collaborated with Cascadia Research and other scientists to expand research efforts on resident whales. The resulting survey area ranged from southern California to Kodiak Island with the most intensive survey coverage in areas along the southern and western coast of Vancouver Island and just north of Vancouver Island. See Draft EIS at 3-81. While NMFS concedes that the survey effort within the larger survey area was variable, a total of only 477 individual resident whales were identified between California and Kodiak, AK. Of these	Calambokidis et al. (2004) describe why they excluded whales cited in Puget Sound from the PCFG. While NMFS researchers participated in developing this scientific paper, the paper itself represents a report to NMFS by a contractor.

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	477 whales, 408 occurred in what NMFS described as the "core survey region" from California to northern British Columbia. The whales in this area were described as the Pacific Coast Feeding Aggregation of PCFA. Suspiciously, NMFS concedes that whales sighted in northern and southern Puget Sound were rarely seen in other feeding areas so they were excluded in the analysis in Calambokidas et al. (2004). While it's unclear why such whales were excluded, the fact that these whales were rarely seen in other survey areas suggest a high degree of site fidelity.	
AWI46	Of the 408 whales in the core survey area, 51 percent were seen every year or at least in two or more years within the survey area. Again, depending on how the geographic boundaries of a site are defined, this is a fairly significant indication of site fidelity in resident whales. While some individuals whales occasionally were documented outside of the core survey area such as in Kodiak, AK most were repeatedly seen (though not necessarily in every year) within the core survey area. See Draft EIS at 4-81. Conversely, for the 49 whales reportedly seen in each of the six survey years, none were seen exclusively in any one of the six survey areas though they did regularly visit the same areas across years. Of particular note is the fact that 71 percent of the whales (or approximately 35 whales) were seen in at least one of the areas during five or more of the six years. Draft EIS at 3-82. This is yet more evidence of increasing fidelity, as would be expected, as the size of the site under study is enlarged. Yet more evidence of fidelity is provided by Calambokidas et al. (2004a) who found that for resident whales in the survey areas there was decreasing movement between survey areas within season for each survey area farther to the north or south. Draft EIS at 3-82. NMFS concedes that "this pattern	As described above, the new DEIS discusses the issue of site fidelity in detail (Subsection 3.4.3.1.2, Global Distribution and Population Structure).

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	demonstrates that whales do focus on specific areas within the summer season, but they will move in search of food, most likely to neighboring areas." Id. More than likely these findings suggest, as reported by Darling et al. (1998), that resident whale distribution and movement patterns are probably related to gray whale foraging patterns and behavior, prey distribution, abundance, and predictability. Draft EIS at 3-83. Gray whales have to eat and will, logically abandon a previously used area, if there is not sufficient prey available to meet at least their minimum biological needs. Since gray whale prey species, including benthic and pelagic organisms, can be affected by any number of environmental, climatic, and oceanographic variables, to suggest that the movements of resident whales to access food is indicative of a lack of site fidelity demonstrates that NMFS has failed to appropriately define the boundaries of the site in question. It is simply not reasonable to suggest that site fidelity can only be demonstrated if a group of gray whales consistently returns to the same site year in and year out without considering the status of their prey and the multitude of factors (i.e., ocean warming, coastal pollution, stochastic events like an oil spill or other chemical contamination, development, abrupt changes in recreational use or ship traffic) that may affect the status and density of the prey species. In addition, the energy needs of gray whales must be compared to the availability of different prey species recognizing that not all prey are energetically equal; some species provide a greater proportion of the daily energetic needs of a gray whale than others. Thus, even though one or more potential gray whale prey species may be available in an area, gray whales still may not exclusively or extensively use that area unless they can benefit energetically from doing so.	

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	Recognizing these needs, site fidelity should be defined as the frequency with which resident whales occupy annually or interannually areas that contain appropriate and sufficient resources required for their survival. This is consistent with the finding of Calambokidas et al. (2004a) who found that nearly 35 of his 49 whales who were seen within his survey area in six straight years were seen in at least one of his six smaller survey areas during five or more of the six years. Draft EIS at 3-82.	
AWI47	A subset of the PCFA is the ORSVI. NMFS claims that Calambokidas et al. (2004a) identified the ORSVI as a management area that "was most appropriate for managing a Makah gray whale hunt." Draft EIS at 3-84. While this may be true, by utilizing the ORSVI as its analysis area, NMFS has failed to abide by the specific findings of the court in *Anderson v. Evans* which called into question the impact of a Makah whale hunt on the "summer whale population in the local Washington area." Draft EIS at 3-84. The court went on to specifically refer to the whales who frequent the Strait of Juan de Fuca and the northern Washington Coast. Id. NMFS attempts to justify the use of the ORSVI as its management area by claiming that there is sufficient overlap between resident whales seen in the ORSVI and in the Makah U&A (i.e., more than 50 percent of the resident whales seen in the ORSVI during the six year survey project conducted by Cascadia Research were also seen in the Makah U&A) that it is reasonable and logical to "use the ORSVI as the region for abundance estimation in setting quotas for a harvest of whales from the [Makah U&A] region." Draft EIS at 3-84 citing Calambokidis et al. (2004a). Considering that approximately 50 percent of the resident whales seen in the ORSVI were	In its request for an MMPA waiver, the Makah Tribe proposed that we rely on the recommendation of Calambokidis et al. (2004) to establish the appropriate area for estimating PCFG abundance to avoid local depletion of gray whales. The 2008 DEIS analyzed this proposal as well as the impacts of the proposal on PCFG whales within the ORSVI. The 2008 DEIS also analyzed the impact of the Tribe's proposal and alternatives on PCFG whales within the Tribe's U&A, consistent with the court decision in *Anderson v. Evans* (for example, 4.4.3.2.2 Change in Abundance of Gray Whales Using the Makah U&A and ORSVI Survey Areas).

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	never seen in the Makah U&A this conclusion seems rather arbitrary particularly considering the emphasis of the court on the local area.	
AWI48	The PCFA and ORSVI abundance data presented in the Draft EIS which is attributed to Calambokidis et al. (2004a), though unclear, is quite relevant to the discussion of site fidelity. For example, Calambokidis et al. estimated that resident gray whale abundance in the PCFA increased from 129 whales in 1998 to 225 whales in 2002 with the abundance of returning whales increasing from 102 in 1999 to 176 in 2003. In other words, 102 of the 129 whales documented in the PCFA in 1998 (or 79 percent) returned in 1999 while only slightly less (78 percent) of the whales documented in 2002 returned in 2003. Draft EIS at 3-87. In this case, if the PCFA was site under consideration, there was a high percentage of whales demonstrating site fidelity. For the smaller ORSVI, using the figures provided in the Draft EIS (page 3-87), the percentage of whales demonstrating site fidelity between 1998 and 1999 was nearly 73 percent while 81 percent of the whales identified in 2002 returned in 2003. NMFS does not disclose such statistics preferring instead to only report on the average annual increase in returning whales. Updated statistics on the number of resident whales for the 1998-2005 period were also disclosed in the Draft EIS (see page 3-87). During this period, 464 unique whales were seen in the PCFA with 67 percent or 311 of the whales seen within the ORSVI and approximately 25 percent or 115 whales seen within the Makah U&A. Draft EIS at 3-88. NMFS does not disclose the percentage of whales documented in the ORSVI which were seen in the Makah U&A. The average number of	Comments noted.

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	resident whales identified in any one year was 160, 87, and only 22 for the PCFA, ORSVI, and the Makah U&A, respectively.	
AWI49	The annual average number of newly seen whales was reported as 47.9, 32.4 and 11.4 for the PCFA, ORSVI, and Makah U&A, respectively, while the average annual number of recruited whales (seen in a subsequent year) for each area was 21.7, 15.3, and 4.7. In other words, of the 32.4 new whales seen on average in the ORSVI nearly 50 percent or 15.3 whales were seen in a subsequent year (but not necessarily the next year) within the ORSVI. Though reported in the text of the Draft EIS, these numbers do not correspond to the information contained in Tables 3-2, 3-3, and 3-4 in the Draft EIS (at 3-89 and 2-90). While these may suggest that new whales are both appearing and subsequently being recruited into these resident whale groups, these increases may also reflect an increase in survey effort resulting in a larger number of whales observed for the first time even though they may have been present in previous years. Moreover, these statistics are presented as averages; the actual data suggest that there is great variability in the number of new whales and number of previously seen whales reported each year. Though Tables 3-2, 3-3, and 3-4 in the Draft EIS (pages 3-89 and 3-90) are extraordinarily difficult to interpret (particularly the meaning of the newly seen and seen again column), it is worth noting the relevant resident whale statistics recorded for the Makah U&A. In that specific area, between 1998 and 2005, an average of 22 resident whales were observed each year ranging from 8 in 2002 to 35 in 2005. The number of "new" whales seen each year ranged from 1 in 2002 to 20 in 2001. NMFS attempts to mask the variability in the number of new whales seen in the Makah U&A by using an annual average of 4.66 new whales seen and recruited in this area	The new DEIS describes the range of annual PCFG observations in addition to the averages. We have attempted to ensure that numbers reported in tables match numbers described in text.

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	(i.e., seen again) between 1999 and 2005. Draft EIS at 4-47. It then claims that even if a maximum of four resident whales were slaughtered by the Makah if Alternative 2 (the proposed action) were implemented "the observed level of recruitment is greater than the likely and maximum number of removals from the entire PCFA." Id. This statement is inaccurate in a number of ways.	
AWI50	For example, the Makah can only hunt (if allowed at all) within the Makah U&A and therefore they can't kill any whales in the larger PCFA. NMFS can't predict the number of resident whales removed from the PCFA as a result of human actions since it can't predict if a resident whale will be killed as a result of a ship strike, net entanglement, or by another human cause. Finally, even if 4.66 new whales are recruited into the Makah U&A annually, this is an average meaning that in many years the new recruits will number fewer than 4 (and possibly as low as 0) as a result of which those resident whales slaughtered by the Makah may not be immediately replaced.	While we cannot predict how many PCFG whales would be killed in future years, the abundance of PCFG whales measured from year to year reflects whales lost from the population through human causes. The commenter is correct that average annual recruitment may not reflect annual fluctuations.
AWI51	While the statistics referenced above reveal that the number of resident whales and so-called new resident whales fluctuate widely within the Makah U&A, they also demonstrate just how few resident whales have been observed within the Makah U&A and, therefore, how the slaughter of even a small number of resident whales by the Makah (if allowed to whale) could adversely impact this group of whales. It should also be emphasized, as is explained in the Draft EIS, that those whales identified as "newly seen" may not, in fact, be new resident whales at all but may have simply not been documented in previous years. If even a third of "newly seen" whales were in fact resident whales that had simply not been identified in previous years, this would change the interpretation of these statistics considerably.	Comment noted.

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AWI52	Contrary to the evidence presented in Table 3-4 regarding the number of resident whales documented in the Makah U&A, NMFS claims that 67 unique whales were seen in the Makah U&A before June 1 during 1998 to 2005. Draft EIS at 3-95. NMFS provides no citation or reference for this claim so it is unclear where the number originated and/or how it was determined. It then claims that if the Makah were allowed to whale in the northern Washington coast area from December 1 through May 31, 17.9 percent, 17.9 percent, and 12.5 percent of whales slaughtered could have been expected to be later seen between June 1 and November 30 in the PCFA, ORSVI, and Makah U&A. Draft EIS at 95. These percentages were based on the a claim that only 17.9 percent (10 of 56) of resident whales identified in the northern Washington coast survey area prior to June 1 were seen in the PCFA in one or more years from 1998-2005. Id. Once again, it is not at all clear where these statistics originate and NMFS provides no reference or citation to a study, report, or even to a table contained in the Draft EIS. Moreover, this entire claim which NMFS has inserted in order to downplay the potential that the Makah will kill a resident whale raises a number of questions.	Table 3-4 in the 2008 DEIS refers to whales identified in the Makah U&A during June 1 through November 30. Table 3-5, which appears immediately following the text on page 3-95 referenced in this comment, reports on whales seen in the Makah U&A before June. The commenter is correct that the text does not refer to the table and the table does not provide a citation to the source of the information it reports. We have made an effort in the new DEIS to ensure that the text clearly refers to the tables containing the relevant information.
AWI53	For example, what is and where is the Washington coast survey area? Is it the same as the Makah U&A? Is it larger than the Makah U&A but smaller than the ORSVI? There is no previous reference to this particular survey area within the Draft EIS. Does the percent of whales seen in the Washington coast survey area prior to June 1 reflect an average of sightings over time, a snapshot in time for a particular month over a multi-year period, or is it related to the number of whales seen over a particular year? What about whales seen in other survey areas either south or north of the Washington coast survey area prior to June 1 and whether they were resighted	The 2008 DEIS describes where survey areas are located, and which survey areas occur within the Makah Tribes U&A (see, for example, pages 3-80 to 3-81; Table 3-4; page 3-84; Figure 3-4; and Figure 3-5). Regarding PCFG whales seen in the Washington coast survey area prior to June 1, the information contained on page 3-95 answers the series of questions presented in this comment.

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	within the broader PCFA in one or more years from 1998 to 2005.	
AWI54	Since it is known that residents whales can and will move outside of core areas to locate potential prey (with diminishing movements as the distance from the core areas to the south or north increase), clearly some whales documented in other survey areas prior to June 1 could have been in the Makah U&A and susceptible to a tribal hunt between December 1 and May 31 thereby increasing the percentage of resident whales susceptible to slaughter. Finally, assuming the data presented by NMFS is accurate, it is not at all clear how it determined that only 12.5 percent of whales within the Makah U&A were likely to be resident whales. This entire section of the Draft EIS must be written both to better explain the origin of the statistics used and to clarify what it is that NMFS is trying to claim and how these statistics substantiate that claim.	There could certainly have been more PCFG whales in the Makah U&A prior to June 1 than those that were sighted, just as there could have been more ENP gray whales in general. What's important is the proportion of PCFG whales relative to ENP whales in general. We have attempted to make this discussion more clear in the new DEIS.
AWI55	While claiming, in one paragraph that 12.5 percent of the whales within the Makah U&A could be resident whales, see Draft EIS at 3-95, in another paragraph on the same page NMFS claims that if the identified (resident) whales within the Makah U&A are randomly mixed with the migratory whales then "less than one percent of the encounters between whales and Makah hunters during that time would be with one of these identified whales." As an initial matter forgetting the clear contradiction between these two arguments, neither statistic appears to be accurate. As documented in the Draft EIS, the northward migration of gray whales occurs in two phases with the second phase (ninety percent of which are cow-calf pairs) departing the wintering areas between late March and May and arriving in their summer feeding range from May to June. Draft EIS at 3-65. Thus while migratory whales may be traversing through	On the page cited in the comment, the 2008 DEIS states that <u>if</u> PCFG whales occurred in the Makah U&A in proportion to their numbers in the overall population, only 1% of whales in the Makah U&A prior to June 1 would be PCFG whales. The discussion on the same page notes, however, that <u>this is not the case</u>. The evidence shows they are <u>not</u> randomly mixed and in fact 17.9% of all whales present in the Makah U&A during May are PCFG whales. This discussion in the new DEIS has been modified to reduce potential confusion. The new DEIS also explores the concern raised in this comment regarding the large number of mothers and calves in the northward migration at the time the Tribe would be most likely to hunt.

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	the PCFA, ORSVI, and Makah U&A in April and May, the vast majority would seemingly be mothers with calves who cannot be legally killed by the Makah. Thus, if the Makah are allowed to whale from December 1 to May 31 but elect to only whale during the latter stages of that season due to more favorable ocean and climatic conditions then the majority of their potential target whales will either be resident whales or migratory mother whales with their calves. The former are whales that the Makah claim that want to try to avoid while the latter are whales that the Makah cannot legally pursue or kill. Consequently, if the Makah were indeed committed to avoiding or eliminating any chance of killing a resident whale and since they can't kill a mother or calf, any whaling (if allowed at all) must be conducted in the far western portion of the Makah U&A, must only target whales that are demonstrating behaviors consistent with migration, must be restricted to the southbound migration of whales, or must be completed before April 1 of each year. Furthermore, NMFS has provided no evidence that migratory and resident whales are randomly mixed within the Makah U&A during the northbound migration. The Draft EIS claims that 60, 20, and 13 percent of the first phase of the northbound migratory gray whales pass between 0.5-2, 0.1-0.5, and within 0.1 miles of the coast with 99 percent of northbound migrants passing within 0.1 mile from the shore. Draft EIS at 3-67 citing Poole (1984). This study was conducted in California, however, and it is unclear if the same percentages would apply in northwest Washington. It is also not clear if anyone has ever compared the migratory patterns (timing and distance to the shore) between known migratory and resident whales. Without such a study, it is impossible to suggest that the two groups randomly mix along the	

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	northwest Washington coastline. In addition, as reported in the Draft EIS, Green et al. (1995) reported that some portions of the ENP gray whale population may take a more direct route between Washington and the central coast of Vancouver, rather than following the longer coastal route past Cape Flattery. Draft EIS at 3-68. Indeed, according to Green et al. (1995) northbound gray whales off the coast of Washington averaged 11.8 km from shore or approximately 4 kilometers farther offshore than sightings of northbound gray whales in Oregon. Without evidence that the migratory and resident whales actually do mix randomly along the northwest Washington coast, NMFS should delete this claim from its analysis.	
AWI56	NMFS claims that there is no evidence of any genetic difference between resident and migratory whales. Draft EIS at 3-91 and 3-92. This is based on research by Ramakrishnan et al. (2001). A review of this study and its methodologies raise questions as to whether this since study is sufficient evidence to discount a potential genetic distinction between the resident whales and the migratory component of the broader population. Even if there is, in fact, no genetic difference there likely could be a behavioral difference between resident and migratory gray whales. The origins of such a behavioral difference may relate to the physical condition of individual animals (with stronger, healthier animals completing the full migration), a learned preference for only completing a portion of the migration (perhaps associated with the ability to find and exploit acceptable quantities and qualities of prey), or may be based on relationships between individual resident whales. The fact that such a large percentage of whales are documented as returning to the PCFA or smaller survey areas	The new DEIS contains an extensive discussion of new information about the genetic distinctions between PCFG whales and the larger ENP gray whale population (Subsection 3.4.3.4, Pacific Coast Feeding Group (PCFG) of Gray Whales). It also considers the potential importance of the behavior of PCFG whales in the long-term persistence of the ENP gray whale population (e.g., Subsection 4.4.3.2.1, Change in Abundance and Viability of the ENP Gray Whale Stock).

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	annually or nearly every year could demonstrate some type of relationship, even if not familial, that dictates which whales are likely to not complete the full migration. It must be emphasized, that just because a resident whale is not seen in a particular year does not mean that he/she is not present within any of the survey areas.	
AWI57	In summary, shockingly NMFS has failed to heed the advice of the court in *Anderson v. Evans* by not focusing its analysis on the resident whales contained within the Makah U&A. Instead, NMFS has elected to base its decision and analysis on the resident whales occupying the ORSVI. Thus, instead of basing a resident whale subquota associated with any whaling activity (if approved) on the number of resident whales documented in the Makah U&A, the subquota would be based on the number of resident whales in the ORSVI. Admittedly, there is overlap among the resident whales occupying the ORSVI and Makah U&A though even NMFS concedes that said overlap is only slightly more than 50 percent. In addition, NMFS has downplayed the significance of resident whale site fidelity by claiming that resident whales engage in "large-scale" movements among different resident whale survey areas. This is far from surprising given the whales' need to find available prey but it most certainly does not suggest a lack of fidelity to certain key areas. Indeed, NMFS even admits that resident whales do exhibit a pattern of returning to the same core areas annually with limited movements to other areas further to the north or the south. Ultimately, NMFS must return to the drawing in its analysis of resident whales in a supplemental EIS. It must provide a more comprehensive examination of all of the relevant resident whale data from all of the scientists who have participated in such research. It also must critically evaluate the methodologies used by	These paragraphs summarize comments made and responded to above.

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	Ramkrishnan et al. (2001) to determine if this study, by itself, is sufficient to claim that there are no genetic differences between resident whales and migratory whales. Furthermore, it must consider the possibility that behavioral factors (i.e., physical or social) may influence what whales are documented as resident whales within the PCFA, ORSVI, and Makah U&A. Finally, NMFS has failed to consider the long-term significance of the resident whale population in light of the significant changes to the ecology of the summer feeding areas as a result of climate change. In the summer feeding areas, gray whale range is expanding as the animals seek out alternative prey patches as prey density and composition in their primary feeding areas has declined or changes as a result of the warming oceans. Consequently, depending on the duration and severity of such changes in the arctic (which are ongoing), the importance of a second population of whales – resident whales – to the overall survival of the species is likely to increase. When it is considered that there was no reduction in the abundance of resident whales during the severe die-off of gray whales during 1999-2000, this would suggest that resident whales represent a type of potential buffer against the impacts of climate change to the larger migratory population. While the northwest Washington coast would not be capable of supporting the number of gray whales supported in the arctic in the past and though Washington's coast is also experiencing change as a result of climate change, it does represent habitat for a second group of gray whales of important value to the larger population.	
AWI58	**8. NMFS analysis of the environmental impacts of each alternative is confusing, contradictory, and contains a number of errors:**	This is an introductory paragraph. Specific comments and our responses are below.

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	Chapter 4 of the Draft EIS ostensibly evaluates the environmental impacts of the proposed action and its alternatives on gray whales, other wildlife, tourism, economics, social issues, and other concerns. The following discussion identifies deficiencies in this analysis, seeks clarification of certain claims or arguments, or questions certain conclusions.	
AWI59	In the introductory section of Chapter 4 under Alternative 2, NMFS states that any struck and lost whales will be assumed to be killed. Draft EIS at 4-4. For the purpose of evaluating the impacts of each alternative, it is imperative that any whale that is struck with a harpoon or shot with a bullet/grenade is assumed to be killed no matter whether the harpoon/bullet/grenade struck the whale and/or the severity of the strike.	The 2008 DEIS assumed a struck whale would die, regardless of whether it is landed or lost (Subsection 4.1.2, Alternative 2). That assumption is consistent with the assertion in this comment. The new DEIS makes the same assumption (Subsection 4.1.2, Alternative 2).
AWI60	In regard to the potential slaughter of resident whales under Alternative 2, NMFS reports on page 4-6 of the Draft EIS that the "Tribe's proposed method would result in an allowable bycatch level of 2.35 percent of the minimum estimated abundance of whales in the ORSVI survey area." Id. Considering that the tribe's proposal, as articulated previously in the Draft EIS, was to calculate an ABL based on the PBR for the number of whales estimated to be in the ORSVI, presumably the 2.35 percent figure is one-half the 4.7 percent rate of increase that NMFS has used in its PBR calculation.	The commenter correctly describes the calculation proposed by the Tribe and reported in the 2008 DEIS. For clarity, the new DEIS repeats the numbers and calculations proposed by the Tribe in its discussion of Alternative 2 (the hunt as proposed by the Tribe) (Subsection 4.1.2, Alternative 2).
AWI61	Using that figure and a minimum estimate of 102 whales (which is presumably the minimum number of whales estimated to occupy the ORSVI in 2005),[73] NMFS calculates an ABL for resident whales of 2.4 which it then rounded down to two. However, if the 78 (the corrected minimum number of previously seen gray whales in the ORSVI in 2005) is used in	The commenter presumably refers to the number of whales "seen" in 2005, as reported in Table 3-3. The estimated minimum abundance, however, is not the same as the number of whales "seen" in a given year. The 2008 DEIS contains an extensive discussion of the method used to calculate minimum abundance of whales in any given survey area (including the ORSVI), but fails to report

[73] In reality, there were 101 total resident whales seen in the ORSVI in 2005. Thus, the use of 102 as a minimum population estimate is incorrect.

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	the PBR formula with a one-half the rate of productivity set at .795 percent (one-half of the 1.59 percent rate of increase estimated for gray whales using data collected from 1967/68 to 2006/07[74] (Draft EIS at 3-72)) and a recovery factor of 0.5 (a conservative estimate given the lack of documented recovery in the overall gray whale population as well as no evidence that the ORSVI whales are "recovered" based on carrying capacity), the ABL based on this method is 0.3. Even if a recovery factor of 1.0 is used the corresponding PBR is 0.6, far lower than the 2.4 whales calculated using the 2.35 percent figure. Alternatively, if the most recent rates of increase provided by Rugh et al. (2008) are used (1.6 percent unweighted rate of increase; 1.9 percent weighted rate of increase) is used along with a recovery factor of 0.5, the resulting ABL would range from .31 to .375.[75] Even if a recovery factor of 1.0 is used the corresponding PBR (using the 1.9 percent rate of increase) is .74, far lower than the 2.4 whales calculated using the 2.35 percent figure. NMFS must explain the scientific basis for its use of 4.7 as the rate of increase for gray whales and why a smaller percentage (such as the current estimated rate of increase or the long-term rate of increase over the past forty years) should not be used given a declining rate of increase in the gray whales over the past decade.	what the most recent estimate was for the ORSVI. That oversight has been corrected in the new DEIS (Table 3-8). In its waiver request, the Makah Tribe proposed to apply the same PBR values to whales in the ORSVI that NMFS calculated for the general ENP population. Because Alternative 2 is the Tribe's proposal, it incorporates this method of calculating an allowable bycatch level. Other alternatives in the current DEIS would employ variations on the Tribe's proposed formula, including using 10% of PBR as the mortality limit for PCFG whales. Regarding the use of 4.7% as the Rmax value in the PBR calculation, Rmax is the maximum productivity rate, which is the rate NMFS uses in the PBR formula. The gray whale SAR has been updated with a new Rmax, which is what the current DEIS uses to calculate likely mortality limits.
AWI62	Furthermore, whether the ABL for resident whales is set at 2 or lower (depending on the formula used and the estimated population of gray whales within the ORSVI), NMFS concedes that up to 4 resident whales could be killed under the proposed alternative since the tribe requests that the ABL only be applied to whales who are successfully landed and not	A DEIS is not a decision document. The 2008 DEIS and the new DEIS both include as an alternative the hunt as proposed by the Makah Tribe in its request for a waiver. The analysis of this alternative provides information for the agency's ultimate decision.

[74] As discussed in another section of this comment letter, the PBR equation is not without potential weaknesses. See item 1 under Specific Comments on page 3 of this comment letter.

[75] This range was calculated using the standard PBR formula (78 x .016/2 (or .019/2) x .5).

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	whales who are struck and lost. Draft EIS at 4-7. If NMFS agrees with and allows the number of resident whales killed annually to potentially be far in excess of the limits proposed by the Makah, it must provide a rational explanation as to why it would allow such a level of mortality that even it concedes would result in adverse impacts to the resident whale population since that number of killed resident whales would not be replaced annually. The Makah are, in a sense, attempting to circumvent their own proposal by offering, on the one hand, to agree to a subquota of resident whales to reduce any potential impact to this unique group of whales but then undermining its own proposal by claiming that the ABL should apply to landed whales only. This is consistent with the proposal to use photographic evidence to determine if any killed whales are resident whales since said photographs would only be taken if the whale was landed.	
AWI63	NMFS and the Makah also underestimate the impact of any hunt on gray whales both numerically and behaviorally. The Makah claim, for example, that for every whale struck, four whales would be subject to unsuccessful harpoon attempts and ten whales would be approached. Draft EIS at 4-8. Using an estimated pod size of two, NMFS and the Makah claim that this corresponds to no more than 28 gray whales subject to unsuccessful harpoon attempts (i.e., 1 in 4 whales will be struck successfully with a harpoon and no more than seven strikes per year) in any year and 140 subject to approaches with no harpoon attempt (i.e., for every ten whales approached a harpoon attempt would be made on only one animal). Id.	In response to this and other comments we reviewed the estimates used in the 2008 DEIS and provide new estimates in the new DEIS. The basis for these new estimates is explained in Subsection 4.1, Introduction.

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	Clearly, NMFS failed to even consider the accuracy of these numbers before publishing the Draft EIS. Assuming each whale is in a pod containing two whales then for each whale struck up to eight whales would be harassed during unsuccessful harpoon attempts and up to twenty whales would be subject to approaches without any harpoon attempt. When the number of permissible strikes is included (up to seven), the total number of whales potentially harassed for each whale struck would be 56 (eight times seven) while the number of whales harassed as a result of approaches would be 140 (twenty times seven). In reporting on the harassment associated with whales that are subject to unsuccessful harpoon attempts, NMFS failed to multiply the result by two (the average pod size) though it did include this factor when calculating the number of whales approached. In reality, the number of whales subject to harassment as a result of Makah whaling, if permitted, would be far greater both because of an underestimate in the pod size used by the Makah and a failure to consider the potential harassment impacts to other gray whales in the vicinity of the hunt caused by other vessels involved in the hunt (i.e., Coast Guard, state police, NMFS, media, protest) and how a struck, wounded, and suffering whale impact whales in his/her vicinity. At a minimum, considering that more recent reported an average pod size of 2.79 (Rugh et al. 2008), assuming there were no whales indirectly harassed as a result of the hunt, the number of whales harassed for every whale struck would be approximately 78 (2.79 x 4 x 7) while the number harassed as a result of approaches only would be approximately 195 (2.79 x 10 x 7).	

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	The actual number of whales potentially harassed as a result of a Makah hunt would likely be much higher because of the number of boats potentially involved in a hunt, their distribution across the hunt area, and due to the likely, but unquantifiable, harassment impact on whales in the vicinity of a wounded and suffering whale targeted during the hunt. This number of harassed whales could be estimated if NMFS had and/or disclosed any information about the average distance between gray whale pods during migration or, for resident whales, as they feed, rest, interact, or otherwise use their summer range off the coast of northwest Washington. Similar deficiencies exist in the analysis of the potential for gray whale harassment under the other alternatives both due to the use of a pod size of two, mathematical mistakes, and a failure to account for indirect harassment. To correct such errors, NMFS must recalculate the likely impact of a Makah whale hunt on the number of whales subject to direct and indirect harassment under each of the alternatives, disclose all new calculations, and reevaluate the overall impacts of the alternatives in a new analysis.	
AWI64	Of particular importance is the need to determine how or if such a level of harassment may alter the behavior of resident or migratory whales by forcing them further offshore (less accessible to the Makah and to coastal whalewatching operations), making them more likely to flee from an approaching vessel (whether a whaling canoe/boat or not) thereby disrupting their feeding or other behaviors with potential energetic consequences, or potentially making them more aggressive around boats of any kind if they perceive a threat. This must include an assessment of the impact of repeated approaches on the same whale since the difference of behavioral impacts caused by a single approach versus	As this comment reveals, there is limited information available to support an analysis of how gray whale behavior might change over time in the Makah U&A if the Tribe commences a regular hunt. Based on the limited available information, the 2008 DEIS concluded that gray whale distribution and habitat use was not likely to change in the event of a Makah hunt (Subsection 4.4.3.2.3, Change in Distribution or Habitat Use). The discussion in the new DEIS more clearly identifies this as an uncertainty (e.g., Subsection 4.4.3.2.4, Change in Numbers of Gray Whales in the Makah U&A and OR-SVI Survey Areas).

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	potentially multiple approaches over the whaling period (if whaling were permitted) could be significant. NMFS has failed to consider the impact of multiple approaches on a single whale and, for that matter, its analysis of the impact of any hunt on gray whale behavior is weak. NMFS basically claims that it doesn't expect any behavior impact because of the relatively short duration of any potential Makah hunt (if a hunt is allowed and depending on the structure of the hunt), because no long-term behavioral impacts have been documented as a result of whale-watching operations, and because the Chukotkan natives who kill dozens of gray whales each year have not documented any behavioral response. Comparing the impact of whale-watching operations to a Makah whale hunt is like comparing apples to oranges. In the former instances vessels are legally required to remain at a distance from the whale for fear of violating the MMPA. Conversely, a Makah whale hunt (if permitted) would include the direct and purposeful approaches by a canoe full of whalers (following by an armada of other vessels) to point blank range so that a harpoon and bullets can be used to kill the animal. There is no comparison between these two scenarios. Similarly, without comparing the behavior of whales pursued during the Chukotkan hunt with the reactions of whales potentially pursued by the Makah is also difficult since the whales in the two areas may be subject to entirely different levels of harassment. Off the coast of Washington, whales may exhibit more adverse reactions to such a hunt because of different characteristics that influence the whales compared to whales within the Chukotkan hunting areas. Whales along the Washington coast have been protected from hunting for	

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	decades potentially making them more likely to alter their distribution and movement patterns if subjected to a hunt. Whales on their summer feeding grounds pursued by Chukotkan natives are less likely to alter their distribution or movement patterns in response to hunting given their need to feed compared to migrating whales off the coast of Washington who could more easily alter their migratory routes in response to a hunt. Similarly, though resident whales tend to use a core area, they may move to alternatives sites in response to whaling. Given the different stressors on the whales using or inhabiting the Makah U&A and the Chukotkan hunting grounds suggesting that the behavior of the whales hunted by the Chukotkans will be the same as any whales potentially hunted by the Makah is sheer speculation.	
AWI65	Though much is made in the Draft EIS about the Makah's alleged need for gray whale meat/blubber to improve their diet and health, NMFS concedes that there is insufficient information available about the health of the Makah people, the link between health and diet in the Makah people, and the current nutritional components of the Makah diet in order to draw any conclusions about this alleged need for edible gray whale products. For example, NMFS includes the following statements in the Draft EIS: "Whether consuming freshly harvest gray whale food products would affect the level of nutrition available to Makah tribal members would depend largely o the types and levels of nutrition present in an individual tribal member's existing diet relative to several factors: (1) what part(s) of the whale and how much of each would be consumed, (2) what currently consumed food items (and associated nutritional levels) would be replaced by gray whale food products, and (3) how each	Comment noted.

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	food item would be collected, stored, and prepared for consumption." "There are no data to compare the amount of contaminants currently being consumed by the Makah Tribe from its normal food sources with the amount of contaminants found in fresh whale products, making it difficult to determine the net change in contaminants to which tribal members would be exposed." "… data do not exist to indicate the amount of fresh whale food product an individual Makah member may consume in lieu of other food sources normally consumed by the same individuals." "As a result of this lack of data, it is not possible to discern risk levels based upon the existing best available information addressing the rate of consumption and method of cooking fresh whale tissues by Makah tribal members." "Whether consuming freshly harvested gray whale food products would affect contaminant exposure in Makah tribal members would depend largely on the types and levels of contaminant present in an individual tribal member's existing diet relative to several factors: (1) what part(s) of the whale and how much of each would be consumed, (2) what currently consumed food items (and associated contaminants) would be replaced by gray whale food products, (3) the age and sex of the whale, (4) possibly the time of year and body condition of the whale, and (5) how each food item would be collected, stored, and prepared for consumption."	

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	"The continued absence of freshly harvested gray whale food products in the diet of the Makah (if Alternative 1 were selected) would continue to preclude them from realizing the added nutritional benefits (e.g., minerals and omega-3 fatty acids) associated with consuming them, but there are not data to suggest that current diets of individual Makah members sufficiently lack these nutritional benefits." "… it is difficult to compare essential nutrients and minerals of whale products directly to other protein sources because the former have not been studied extensively." Consequently, NMFS concludes that "there are too many uncertainties, however, to quantify either type of effect or to predict whether any of the alternatives would result in a net positive or negative effect on human health." Draft EIS at 4-193. As a consequence of this uncertainty, NMFS must not base its final decision on any consideration of any perceived or alleged dietary benefits associated with the consumption of whale products since, as NMFS concedes, there is no evidence to prove such a benefit given the lack of baseline data on the diet and nutritional status of the Makah people.	
AWI66	**<u>Specific Comments:</u>** **1. Deficiencies in the use of the Potential Biological Removal (PBR) formula to determine the "sustainable" level of killing of gray whales:** The Makah and NMFS propose to use the PBR to calculate the number of gray whales that can allegedly be removed from the population each year without jeopardizing the stock's ability "to reach or maintain its optimum sustainable population	This comment correctly notes that the Makah Tribe has proposed to use a formula based on PBR to establish an acceptable level of removal of PCFG whales. At this time NMFS has no proposed action.

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	level." Draft EIS at 11. NMFS has historically used the PBR for gray whales to demonstrate that the current level of killing (not including natural mortalities) is well below the number of whales who could be removed without affecting the stock's optimum sustainable population. Indeed, based on NMFS' estimated gray whale population size and using the standard PBR formula, there appears to be a significant cushion between the number of whales killed (not including natural mortalities) and the PBR. As a consequence, most observers would dismiss the possibility that the actual level of killing is in excess of what is "sustainable" despite the multitude of threats to the species and the fact that such threats are increasing, not decreasing, in severity. As defined in the Draft EIS, the PBR is calculated by taking the minimum population estimate of the stock, multiplying that by one-half the maximum theoretical or estimated net productivity rate of the stock, and then multiplying the result by a recovery factor between 0.1 and 1.0. Draft EIS at 11. A second PBR is calculated based on the number of previously seen resident whales in the ORSVI to create what amounts to a resident whale subquota under the proposed action (Alternative 2). Based on the 2005 resident gray whale data, NMFS claims that the PBR for the ORSVI was 2.49 which, as demonstrated above, is far higher than what the PBR would be if the correct statistics were used when making the calculation. There are a number of problems with the use of the PBR formula for gray whales and for its use when attempting to define a subquota of resident whales. The PBR is defined as the "maximum number of animals, not including natural mortalities, that may be removed from a marine mammal	

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	stock while allowing that stock to reach or maintain its optimum sustainable population." Draft EIS at 3-54. As an initial matter, the concept of a PBR was originally developed as a fisheries management tool and then altered to be applied to marine mammals. The fact that the PBR does not include any adjustment to take into consideration natural mortalities is a significant deficiency in the value of this tool. If the purpose of calculating PBR is to ensure that no stock cannot reach or maintain its optimum sustainable population, the impact of natural mortalities on the population must be considered when calculating the PBR. If not then limiting slaughter to a level below the PBR is no guarantee that the target population can reach or maintain its OSP since the proportion of the population succumbing annually due to natural mortality events could reduce the population below OSP. NMFS fails to explain how or if natural mortalities are considered in conjunction with or separately from the PBR to ensure that a species can reach or maintain its OSP. For gray whales, NMFS has not included in the Draft EIS any data on age or sex-specific natural mortality rates. Such mortalities could be due to old age, disease, starvation (though climate change induced impacts to the gray whales primary prey species likely results in mortality that is entirely caused by anthropogenic impacts), and predation. It has been documented that killer whales or orcas do predate gray whales, particularly calves, and the impact of such predation can be significant. There are some estimates that upwards of 30 percent of calves may be killed by orcas (Mizroch and Rice 2006 citing Black 2001, Black 2003, Ternullo & Black 2002) It has also become evident that, due to ecosystem regime shift in the Arctic and its impact on gray	

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	whale ecology, a larger proportion of gray whale births are occurring in the open ocean as far north as the Carmel/Monterey, CA area. Draft EIS at 3-65. As a consequence, the protections afforded gray whales calves born in or near the birthing lagoons in Mexico are not present in the open ocean. Calves, therefore, are likely more susceptible to mortality due to thermal stress (a product of the colder water in northern California compared to Mexico) and killer whale predation. While we may not have a solid understanding of age and sex specific mortality rates for gray whales, no one can dispute that natural mortality does occur, that it can be significant particularly among gray whale calves, and that adult gray whale mortality rates may be increasing due to ecosystem regime shifts attributable to a warming climate/ocean. This latter category of mortality, though originally caused by anthropogenic factors, would be considered, under the PBR calculation, a natural form of mortality. As even NMFS concedes in the Draft EIS, the significant number of mortalities recorded in 1999 and 2000 "did not exceed expected levels of natural mortality." Draft EIS at 3-108 citing Moore et al. 2000). The only mortality events that would be applicable to any PBR events would be those with a known direct human nexus such as the killing of gray whales by aboriginal groups, ship strikes, or net entanglements. A PBR is a product of three factors multiplied together (i.e., minimum population estimate, one-half the maximum theoretical or estimated net productivity rate of the stock at a small population size, and a recovery factor between 0.1 and 1.0). Draft EIS at 3-54. Each of these components of a PBR calculation requires additional discussion and analysis.	

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	First, while the use of a minimum population estimate would appear to be conservative, it depends on the validity and accuracy of the population estimate. If a population estimate is an overestimate (as is likely the case with gray whales) then the minimum population estimate is also likely to be an overestimate resulting in a PBR that is higher than what is appropriate. Second, the maximum theoretical or estimated net productivity rate of a stock are different measures. The difference between the maximum theoretical or estimated net productivity rate can be and likely is large since the first option refers to a rate of productivity that is theoretically the highest possible while the second option refers to a productivity rate that is likely lower and which presumably is based on empirical data. Allowing either rate to be used, given the potential differences in such rates, could result in substantial differences in the PBR. While the validity of either of these estimates is also of concern, providing the option of using one over the other without any explanation as to when the maximum theoretical productivity rate should be used instead of the estimated net productivity rate and vice versa introduces the potential for considerable statistical manipulation to achieve a PBR that may be larger than is appropriate. In addition, the requirement that the rate of productivity be based on said rates when the stock is at a small population size is also problematic and confusing. How is “small population size” defined? At certain sizes the productivity rates could be severely depressed due to difficulties in finding mates and/or a lack of breeding success or other factors that are keeping the population depressed. At other so-called “small” sizes,	

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	productivity could be maximized if the species is in the process of recovering from a past decline in abundance and is experiencing high productivity as it attempt to fill all available niches within its habitat. For the gray whale, does NMFS believe that the current population is "small" since it is smaller by some 9,000 whales compared to the estimated gray whale abundance in 1997/98 or because it is as much as six times lower than the pre-exploitation estimates calculated by Alter et al. (2007)? Or does NMFS use a productivity rate estimated for gray whales when the population was smaller than its current size? Since productivity rates can change dramatically depending on the population size and since such rates are crucial for the determination of PBR, a far more detailed explanation as to the origin, basis, and applicability of the PBR concept to whales and to gray whales in particular is needed in the Draft EIS. Finally, NMFS uses a recovery factor of 1.0 when calculating the PBR for the gray whale. This is the highest recovery factor possible which signifies that the population is recovered. Considering that Alter et al. (2007) recommended that the gray whale be designated as a depleted species under the MMPA since the current population is much smaller than its estimated pre-exploitation size, a recovery factor of 1.0 is too high and must be replaced with a recovery factor of 0.5 or lower to both be more accurate and to ensure that sufficient precaution is employed in calculating the gray whale's PBR. Moreover, if the PBR is used to determine the amount of human-caused mortality that a smaller subset of the gray whale population (i.e., the PCFA, ORSVI, or Makah U&A whales) can sustain, the use of a 1.0 recovery factor would also appear to be misplaced since we have no evidence that these smaller groups of whales are "recovered."	

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	Recognizing, based on existing data, that not all resident whales occupy the same summer habitat each year (i.e., some don't show evidence of summer habitat site fidelity) and that the number of whales in these smaller groups may vary throughout a summer and interannually, the use of a recovery factor of 1.0 suggests that the whale groups are at carrying capacity for their occupied areas. There is, however, absolutely no data or evidence to suggest that the whales are at carrying capacity within these smaller geographic areas (which are politically not biologically or ecologically defined). Indeed, there is no evidence that the "carrying capacity" for gray whales within the PCFA, ORSVI, and/or the Makah U&A has been defined.	
AWI67	For the entire ENP gray whale population, NMFS claims that the PBR is 417 whales. Draft EIS at 3-109. This was calculated using a minimum population size of 17,752 (derived from the mean of the 2000/01 and 2001/02 population estimates, a maximum theoretical or estimated net productivity rate of the stock at a small population size of 0.047 divided by 2 to obtain 0.0235, and a recovery factor of 1.0. This calculation is wrong. First, the first statistic used in a PBR calculation is supposed to be a minimum population size. Based on the data contained in Table 3-6 on page 3-98 of the Draft EIS, the minimum gray whale population estimates for 2000/01 and 2001/02 were 16,097 and 15,011, respectively. Consequently, the mean of these minimum estimates is 15,554 not the 17,752 used by Angliss and Outlaw (2005) as reported in the Draft EIS (page 3-109). Moreover, the minimum population estimate used in a PBR formula is traditionally calculated using the formula Nmin = $N/\exp(0.842x[\ln(1+[CV(N)]^2)]^{½}$. See Draft 2008 gray whale	The commenter incorrectly equates the confidence intervals used in the annual abundance estimates reported in Table 3-6 with the calculation of Nmin (minimum abundance) as estimated for the PBR calculation. The commenter further asserts that the Nmin values reported in the 2008 DEIS are not consistent with the formula used in the agency's stock assessment reports. Finally, the commenter disagrees with the use of the maximum productivity rate (Rmax) used in the PBR calculation. The formula for estimating Nmin is described in Barlow et al. (1995). We use this formula in establishing Nmin for purposes of calculating PBR in our stock assessment reports. The confidence intervals reported in Table 3-6 of the 2008 DEIS were calculated by Rugh et al. (2005) and Rugh et al. (2008) based on a different formula. The two calculations serve different purposes. Regarding the commenter's point that the PBR calculation is not sufficiently conservative for setting a harvest threshold, the new DEIS includes an alternative that would set a mortality limit for PCFG whales at 10% of PBR. With respect to Rmax, we relied on the value developed in the analysis by Punt and

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	stock assessment report. There is no evidence that NMFS utilized this formula when estimating the population minimums used in any of the PBR calculations contained in the Draft EIS. NMFS must either use that traditional formula (as it has in the past) or it must explain why the formula is not relevant in this case. Second, it is unclear where NMFS (citing Angliss and Outlaw 2005) gets the 0.047 maximum theoretical or estimated net productivity rate for gray whales. As previously explained, the maximum theoretical and the estimated net productivity rates are entirely different measures with the theoretical maximum rate of productivity higher than any net productivity rate. NMFS fails to indicate whether the 0.047 rate is the former or the latter. To be conservative, and considering the decline in the gray whale productivity rate over time (i.e., an average productivity rate of 2.52 from 1967/68 to 1995/96 compared to an average productivity rate of 1.59 from 1967/68 to 2006/07),[76] the use of the lower rate to calculate the PBR would be more appropriate. Alternatively, the most recent estimate of gray whale productivity of 1.6 or 1.9 percent unweighted and weighted, respectively (Rugh et al. 2008) should be used. Finally, as previously explained, it is difficult to justify the use of a recovery factor of 1.0 since there is compelling evidence, provided by Alter et al. (2007) that the gray whale population has not recovered to its pre-exploitation size and given their conclusion that	Wade (2012) and used in our most recent stock assessment report (Carretta et al. 2014).

[76] If the 2.52 or 1.59 productivity rates were used in the PBR calculation the corresponding values would be 0.0126 and 0.00795, respectively.

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	the ENP gray whale should be designated as a depleted species under the MMPA. Consequently, a more conservative recovery factor would be at least 0.5. If some of these corrected or more accurate statistics are plugged into the PBR formula several of the resulting PBR values for the entire ENP gray whale population would be far lower than the current level of 417 and would also be lower than the known current human caused mortality level of an estimated 141 whales per year (Draft EIS at 5-4). For example, using some of the various statistics identified above several potential PBR values could be calculated. 1) 15,554 x 0.0235 x 1 = 366 2) 15,554 x 0.0235 x .5 = 183 3) 15,554 x 0.0126 x 1 = 196 4) 15,554 x 0.0126 x .5 = 98 5) 15,554 x 0.00795 x 1 = 124 6) 15,554 x 0.00795 x .5 = 62 7) 15,554 x 0.0095 x 1 = 148 8) 15,554 x 0.0095 x .5 = 74 9) 15,554 x 0.008 x 1 = 124 10) 15,554 x 0.008 x .5 = 62 The use of an accurate minimum population estimate, a lower productivity rate consistent with recent productivity estimates, and a recover factor of .5 would reflect a more conservative management strategy that would theoretically lessen the impact of a potential human-caused decline in gray whales. However, considering the significant problems with the entire PBR concept, namely its failure to incorporate natural mortalities into its formula, a more conservative PBR which includes potential losses due to natural mortalities,	

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	must be set considerably lower in order to protect the health and viability of the population. Precisely how low such a PBR would have to be set is unknown since data on gray whale natural mortality is not disclosed in the Draft EIS or is unknown.	
AWI68	**2. Use of Allowable Bycatch Level calculation to determine subquota of resident whales that can be killed by the Makah Tribe:** Pursuant to its MMPA waiver application, the Makah propose to set an allowable bycatch level (ABL) based on the calculation of the PBR level using the "number of previously seen whales in the Oregon-Southern Vancouver Island survey area" as the minimum population estimate for use in the PBR equation. Draft EIS at 1. In effect, the Makah and subsequently NMFS have proposed establishing a subquota of resident whales which, if met, would terminate the hunt for the remainder of the year. The logistics of establishing this subquota, however, will not work and will lead to the potential slaughter of up to four resident gray whales[77] per year far in excess of the PBR calculated for resident whales in the ORSVI for 2005 as delineated in the Draft EIS. The logistical and mechanistic problems with the establishment of a resident whale subquota as described in the Draft EIS are in addition to the deficiencies with the PBR process discussed previously. First, unless a new research methodology is established to identify and monitor resident whales within the PCFA, ORSVI,	As noted previously, Alternative 2 in the 2008 DEIS represents the proposal of the Makah Tribe, not the agency. The Tribe's proposal is to use the 3-year average minimum abundance estimate to establish the allowably bycatch level of PCFG whales. This is the protocol NMFS follows in establishing PBR in the stock assessment reports. Within a 3-year period, the estimated annual abundance may vary, either because population numbers actually vary or because of the imprecision of the estimates. The commenter notes a further concern that PCFG whales move among different survey areas. The Tribe's proposal implicitly addresses this concern in that the Tribe would calculate the allowable bycatch limit based on the minimum abundance of whales in the OR-SVI survey areas, but count against that limit any whale identified anywhere within the PCFG area.

[77] In reality, the number of resident whales that could be killed in any single year if the proposed action is selected and implemented is seven which is the limit on the number of strikes that would be permitted per year. Since NMFS, for the purpose of this analysis, assumes that a struck whale is a dead whale and since it concedes that not all resident whales have been photographically identified, it is possible that the Makah could kill a resident whale which would be classified as migratory since it was never previously photographed and cataloged.

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	and the Makah U&A to provide regular, instantaneous data on the number of resident whales within the ORSVI, the resident whale subquota calculated for a particular year may allow for more resident whales to be killed than is biologically appropriate. This is a product of the inevitable delay in surveying the ORSVI, locating and photographically identifying returning or new resident whales, and then determining how many previously seen resident whales are present within the ORSVI at any one time. Such data collection and calculations are not done overnight. Indeed, as evidenced by the data included in the Draft EIS, the most recent resident whale data for the ORSVI is from 2005 suggesting that there is a delay of a couple of years in assessing and publishing resident whale data. While returning resident gray whales tend to utilize the same core areas each year, they are not always founds in the specific sites where they had been documented previously. Considering their need to find prey resources, not surprisingly resident whales demonstrate movements within their range though as you move further northward or southward from the core area the movements become more limited. As a consequence there is some, but not sizeable, variability in the number of whales seen in the PCFA, ORSVI, and Makah U&A each year. Moreover, considering the inevitable delay in determining and publishing the estimated number of resident whales within the ORSVI, the calculation of a subquota of resident whales that can be killed by the Makah may be based on a number of whales that is well over or under the actual number of resident whales within the ORSVI in the particular year of the hunt.	

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	NMFS fails to address this deficiency in the logistics of calculating a subquota of resident whales that the Makah could be permitted to kill. Specifically, what is the delay (in years) in reporting the number of resident gray whales estimated to be within the ORSVI? Will NMFS devise a new research methodology in conjunction with its research partners (e.g., Cascadia Research) to more rapidly collect, analyze and report on resident whale data obtained within the ORSVI? Will the number of previously seen resident whales within the ORSVI be based on an annual average, a running average over the course of two or more years, or on the previous year's data?[78] If NMFS uses resident whale data collecting during the year prior to the hunt, will the "minimum population estimate" used in the PBR equation be the sum total of the maximum number of previously seen resident whales estimated to inhabit the ORSVI at any particular time during the previous year? Or, will it, recognizing that resident whales may move in and out of the ORSVI, be based on a minimum or average estimate of previously seen resident whales within the ORSVI?	
AWI69	Second, though NMFS claims that it intends to utilize the "National Marine Mammal Laboratory's photographic identification catalog," DEIS at 6, as its reference for identifying potential resident whales, there is no evidence that such a catalog actually exists at NMML. Indeed, there have been reports that NMML does not even possess the resident gray whale photographic catalog. This raises a number of questions which NMFS must answer. Does the NMML possess a resident gray whale photographic identification catalog? If so, does it contain a photograph of all resident gray whales documented since research on this unique group of whales	The commenter is correct that the 2008 DEIS erroneously referred to a gray whale photo identification catalog maintained by the National Marine Mammal Lab. The catalog is in fact maintained by Cascadia Research Collective. The new DEIS corrects this error.

[78] The definition of "identified whale" in the Draft EIS refers to whales within the PCFA and ORSVI survey areas "in a prior summer feeding period," Draft EIS at 6, but does not specify what is meant by "prior summer feeding period."

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	was initiated? If NMML does not possess such a catalog, who does possess and maintain said catalog? Has NMFS negotiated a contract with that person/organization to ensure that he/she or it will provide the required analytical services to compare pictures of gray whales killed by the Makah with resident gray whale photographs contained in the catalog or to permit a NMFS official to engage in such an analysis? What mechanism is in place to ensure that all gray whale scientists who study and photograph resident whale share their photographs with a person or organization to ensure their insertion into the resident gray whale catalog? These questions must be answered by NMFS before any further action is taken on the Draft EIS. NMFS cannot assert that NMML has a resident gray whale photographic catalog as a tool to use in determining if the Makah have exceeded the proposed resident gray whale subquota if such a catalog does not, in fact, exist at NMML and/or if NMML has no access to said catalog or if said catalog is incomplete.	
AWI70	Third, the proposed action (Alternative 2), if implemented, would limit the Makah to seven struck whales per year, three struck and lost whales, and the killing of an average of four whales per year (with a maximum of five in any one year). Draft EIS at ES-1 and ES-2. In order to determine if any of the whales killed were resident whales each whale would be photographed with the photograph being sent to NMFS and/or other specialists for comparison with a catalog of existing resident whale photographs.[79] This process is replete with problems.	As noted previously, we have not adopted or endorsed the Tribe's proposal. The DEIS evaluates the Tribe's proposal along with alternatives. The 2008 DEIS discloses the possibility that under the Tribe's proposal, a struck and lost whale could be a PCFG whale, but would not be counted against the allowable bycatch limit (Subsection 4.1.2, Alternative 2). The analysis in the 2008 DEIS therefore considers both a worst case and a likely scenario, based on the possibility that all struck and lost whales are PCFG whales, and based on the probability that a struck whale would be a PCFG whale according to their proportion in the Makah U&A (Subsection 4.1.2, Alternative 2).

[79] Although, in the tribe's waiver application, it claims that "as soon as practicable after a successful hunt, in consultation with scientists from NOAA's National Marine Mammal Laboratory (NMML) the Tribe will compare photographs of landed whales with the NMML photo-identification catalog for the Pacific Coast Feeding Aggregation (PCFA)… ." Waiver application at 2. If the Makah are responsible for comparing the photographs of a landed whale with existing photographs of residents whale to determine if it had killed a resident whale which could potentially limit future whaling opportunities this would create an

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	For example, according to the information presented in the Draft EIS, a minimum to moderate percentage of resident whales identified in any one year have not been identified or photographed previously. Thus, even if a whale killed and photographed cannot be matched to any resident whale photograph in the resident whale catalog, the whale may still be a resident whale. Of equal or greater concern is the fact that, as specified in the Draft EIS, the killed whales will only be photographed when landed. At that time, even if the killed whale is determined to be a resident whale, the whale is already dead. More importantly, since whales that are struck and lost (up to three per year under the proposed action) will never be photographed it will never be known if they were or were not resident whales. As a consequence, even if a resident whale subquota was set at, for example, two, up to four resident whales could potentially be killed before the subquota is met and the hunt is terminated if the first two whales struck are lost and if both were resident whales. Remarkably, though NMFS concedes that this is a possibility and that such a high rate of slaughter of resident whales would be in excess of any annual ABL for resident whales calculated using the PBR formula, it continues to endorse this proposal. Considering the Makah's likely predilection for pursuing those whales closest to shore to reduce the amount of time and effort required to kill a whale and tow its carcass to shore, there is a high likelihood that, if permitted to engage in whaling as described in Alternative 2, the Makah will pursue resident whales.	The commenter notes that a landed whale could also be a PCGF whale that had not yet been photographed or identified and therefore would not be counted against the bycatch limit. This would lead to a higher level of mortality for PCFG whales than the "worst case" scenario assumed in the 2008 DEIS. We have accounted for this possibility in the new DEIS (Subsection 4.1.2, Alternative 2).

inappropriate conflict of interest. Though this entire proposal is fraught with problems, it must be made clear how the process would work if it is employed in the event that NMFS authorizes the Makah to whale.

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	Even if NMFS altered its proposal to require that photographs be taken of each pursued whale, a Makah participating in the hunt would have to be trained to take the required pictures or a person already trained in obtaining such photographs (i.e., ensuring that the whale is photographed from the correct angle, that the most identifiable part of the whale is photographed) would have to accompany each Makah hunting party. Even if this were possible, there is no instantaneous way to determine if the pursued whale is or is not a resident whale. Even if the photographs could be transmitted from the canoe to a person with access to a resident whale catalog it would still take potentially hours to determine if the photographed whale was a resident whale. Requiring appropriate photographs be taken by a qualified/trained technician prior to any attempt to strike and kill the whale would, however, reduce the possibility of up to four resident whales being killed in any one year.	
AWI71	Finally, NMFS provides no explanation as to why the resident whale subquota would be calculated based on the estimated number of previously seen resident whales within the ORSVI versus using the Makah U&A as the geographic area for analysis. Since the Makah can only whale, if permitted, within their U&A, the only whales who could be potentially killed would be migratory or resident whales within the U&A. While there would always be some movement of whales both into and out of the Makah U&A, if the ABL were calculated using the PBR formula based on the estimated number of resident whales within the U&A, the resident whale subquota would be smaller and, thus, more precautionary reducing the likelihood of any short or long-term adverse impact on resident whales. For example if the number of previously seen whales in the	As explained in the Tribe's request, and in the 2008 DEIS, the Tribe's proposal to establish an allowable bycatch level based on the minimum abundance of whales in the OR-SVI is based on the recommendation of Calambokidis et al. (2004a), who noted the relatively high rate of interchange of whales seen within the Makah and the other OR-SVI survey areas (Subsection 3.4.3.3.1 Summer Range Distribution and Habitat Use; Subsection 4.4.2.2, Change in Abundance of Gray Whales Using the Makah U&A or OR-SVI Survey Areas).

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	Makah U&A in 2004[80] (Draft EIS at 3-90) is used (7) along with a one-half the net productivity rate of 1.9 (weighted rate of increase as reported by Rugh et al. 2008 based on 2006/07 gray whale census data), and a recovery factor of 0.5 the PBR value for whales within the Makah U&A would be .03 gray whales. Even if the 0.0235 factor is used along with a recovery factor of 1 then the PBR would be .1645 gray whales far lower than the 2.4 resident whale subquota presented by NMFS. Conversely, basing the ABL on the estimated number of resident whales within the ORSVI, increases the resident whale subquota even though many of the resident whales within the ORSVI may never enter the Makah U&A. Given all that remains unknown about the resident whales, AWI believes that NMFS should prohibit all whaling in order to ensure protection of all resident whales. If NMFS elects to issue the waiver and allow the Makah to whale then, at a minimum, it must adopt precautionary measures to limit the subquota or resident whales killed by the Makah by basing that subquota on the estimated number of resident whales within the Makah U&A.	
AWI72	Even assuming that the ORSVI is the appropriate management unit, the ABL for resident whales within the Makah U&A calculated using the PBR formula is in error. Draft EIS at 4-37. First, as the minimum abundance estimate for ORSVI whale, NMFS uses 106. The origins of this number are unknown and no reference or citation is offered in the Draft EIS. A review of Table 3-3, the total number of resident whale seen in the ORSVI is 101 not 106. However, as explained in several places in the Draft EIS, the minimum number that is supposed to be used to calculate the ABL for the Makah U&A is the number of	The 2008 DEIS fails to cite the source of the minimum abundance estimate of 106 used in the PBR calculation. It came from Calambokidis et al. (2004a).

[80] No data on the number of previously seen whales were provided for 2005 for the Makah U&A. Draft EIS at 3-90.

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	resident whales that have been seen in two or more years within the ORSVI. So, again using the data from Table 3-3 for 2005, the total number of previously seen resident whales in the ORSVI is 78.	
AWI73	Second, NMFS again uses 2.35 percent figure presumably as one-half the estimate net productivity rate. This would correspond to a 4.7 percent actual rate of increase which is far higher than the average rate of increase documented using data from 1967/68 to 2006/07 (1.59 percent) or the rates of increase provided by Rugh et al. (2008) (1.6 or 1.9 percent). NMFS fails to explain why it believes using the 4.7 percent rate is appropriate versus using the 1.59, 1.6, or 1.9 percentages or some alternative percentage between the 4.7 and 1.59 percent rates of increase. Considering that the recent estimated rates of increasing are in decline, the 1.59, 1.6, or 1.9 percent rates of increase would seemingly be the more appropriate statistic to use in calculating the ABL for resident whales in the Makah U&A since the objective is to reduce or eliminate the killing of these unique animals.	The PBR formula relies on the *maximum* net productivity (Rmax) level. The theory and rationale underlying the PBR formula is summarized in the 2008 DEIS and described in detail in references cited in the 2008 DEIS (in particular, Barlow et al. 1995 and Wade 1998). The Rmax productivity level used by the Makah Tribe in its proposal and in the 2008 DEIS evaluation criteria is based on the Rmax NMFS identified for ENP gray whales in its stock assessment report (Angliss and Outlaw 2008). Carretta et al. (2014) has an updated estimate of Rmax, which is used in the new DEIS.
AWI74	Third, and finally, NMFS continues to incorrectly use the 1.0 recovery factor when, since the current gray whale population size is no where near its pre-exploitation size and since Alter et al. (2007) recommended the species being designated as a depleted species, the recovery factor should be no more than 0.5. Using these corrected statistics, the new ABL for resident whales in the Makah U&A would be 0.3 – 0.37 per year, far lower than the 2.49 resident whales reported by NMFS. Draft EIS at 4-37.	The recovery factor used by the Makah Tribe in its proposal and in the 2008 DEIS evaluation criteria is based on the recovery factor NMFS identified for ENP gray whales in its stock assessment report (Angliss and Outlaw 2008). Carretta et al. (2014) calculated a PBR for PCFG whales separate from the calculation for the ENP stock, using a recovery factor of 0.5.
AWI75	**3. Use of powered chase boats to tow struck and killed whales to shore:**	The 2008 DEIS, Subsection 2.4.5.1, Hunt Using Only Traditional Methods, explains why the alternative proposed here was not analyzed in detail: "The use of powered vessels . . . to chase and tow whales represent reasonable efforts to

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	A portion of Makah tribal membership have advocated a resumption of whaling to revitalize Makah culture. They believe that a return to whaling will help restore the tribe's cultural past, its language, its ceremonies, and will lead to a spiritual reawakening. For individuals selected to be members of Makah whaling teams, rigorous training and spiritual preparations will be expected by them and their family members consistent with the reported traditions of their ancestors. Despite these training standards and seemingly inconsistent with the methods employed by their ancestors when pursuing whales, the Makah have proposed to use motorized chase boats to, among other things, tow killed whales back to shore. Draft EIS at 2. While AWI strongly opposes any whaling by the Makah, if whaling is permitted then both international and national treaties or laws require that it be done in the most humane manner possible to reduce the suffering of the struck whale. To accomplish this, the use of a chase boat to ensure that a rifleman can fire one or more shots at a harpooned whale to (hopefully) end the whale's suffering as rapidly as possible is entirely appropriate. Using the chase boat to then tow the struck whale to shore would, however, be inconsistent with the traditional practices that the Makah are trying to recreate by whaling. If the Makah historically relied on physical preparation and prowess in order to successfully kill and land a whale, modern day Makah whalers should, out of tradition, desire to emulate their ancestors. The Draft EIS suggests that, historically, Makah whalers used to go far out to sea to hunt gray whales and used to tow dead whales behind their canoes back to their ancestral lands. Sometimes it would take days for the Makah to tow the dead	retrieve any stricken whale and are more likely to meet WCA regulatory requirements than hunting using only traditional vessels."

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	whale back to land. Reportedly, when steam-powered ships became available, the Makah then relied on those ships to tow the whale carcasses to shore. It is doubtful that the companies owning those ships or the individual ship captains agreed to tow the whale carcass to shore as a simple gesture of goodwill rather, it is likely that goods (i.e., whale oil, seal oil, skins/pelts, or other products) were exchanged as payment. NMFS claims that the use of a chase boat to tow the whale carcass back to shore is needed to prevent the spoilage of the carcass. This excuse seems to conflict with reports that historically it could take the Makah whalers days to tow a whale back to land when using their traditional canoes and their own strength. Either there was significant spoilage of the whale historically (which calls into question the distance the Makah would travel out to sea to pursue whales and/or indicates that whale oil and not meat/blubber was the principal tradable resource obtained from whales historically), the Makah were far more proficient paddlers than they are today, or the Makah historically either utilized all whale products (spoiled or not) or there was significant wastage of a whale once landed. AWI is not advocating for a complete return to all traditional tactics to kill whales. Indeed, it would be in violation of international standards and domestic laws for the Makah to employ only traditional harpoons to kill gray whales given the inefficiency of such killing methods and the immense suffering that would result. Requiring the Makah to rely on traditional methods to tow a whale carcass to land, however, would be consistent with the tribe's desire to revitalize its cultural, spiritual, and physical relationship to whaling.	

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AWI76	**4. NMFS has not provided a legal description of the Makah's usual and accustomed grounds and stations:** An examination of the Treaty of Neah Bay reveals that the treaty itself does not set aside any ocean areas as part of the Makah's usual and accustomed grounds and stations. The description of the lands set aside in Article 2 to represent the Makah reservation does not extend into the ocean. In addition, as indicated above and in Article 4, the Makah's right of taking fish and of whaling or sealing is for its usual and accustomed "grounds and stations." While it is unclear what is meant by stations, the term grounds may not imply any area of the ocean. Admittedly, it is impossible to harvest marine fish or whales anywhere but in the ocean though freshwater fish can be killed in streams, tributaries, and creeks within the Makah's reservation. NMFS claims in the Draft EIS that the courts have defined the area of the ocean reserved for the Makah. Due to the inadequacy of the comment period on this Draft EIS, this claim could not be confirmed nor could any legal description of the boundaries of the Makah U&A, if articulated by the court, be mapped to determine the true extent of the U&A. This criticism is not meant to suggest that the Makah's U&A does not include areas of the ocean but it would be useful and informative if NMFS provided the legal description of the Makah U&A – at least the portion that includes the Pacific Ocean – so that interested stakeholders can better understand the boundaries of this area.	The Makah Tribe's request is that whaling be authorized in its fishing U&A, which has been adjudicated under *U.S. v. Washington* (Makah 2005).
AWI77	**5. The Makah tribe has not demonstrated the ability to engage in whaling in a manner consistent with the WCA's prohibition on waste:**	If we authorize a gray whale hunt by the Makah, we would evaluate the issue of waste in developing any applicable regulations.

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	The Draft EIS defines "wasteful manner" as "a method of whaling that is not likely to result in the landing of a struck whale or that does not include all reasonable efforts to retrieve the whale." Draft EIS at 14. NMFS has interpreted this standard to apply both to the process of whaling and of butchering the whale. Indeed, in its 1996 final rule amending the WCA, NMFS indicated that the waste provision in the WCA applies to the butchering process as well as to the killing and landing of the whale. Therefore, not only would a struck and lost whale constitute a violation of the "waste" standards in the WCA but so would the inefficient butchering of a landed whale resulting in the spoilage or waste of whale meat, blubber, or other whale products. Though NMFS suggests that Makah tribal members "removed almost all edible portions of the meat and blubber from the whale (killed during the 1999 hunt) by midnight," Draft EIS at 1-38, videotape footage of the butchering of the whale demonstrates that the Makah had little idea how to butcher the whale and that, consequently, much of the whale was wasted. This footage, appended to this comment letter and also available for viewing on the AWI website (http://www.awionline.org/oceans/whaling/makah_video.htm), was obtained by a eyewitness who was present at the beach where the 1999 whale was landed and who witnessed the butchering process. Her written description of the butchering process that she captured on videotape provides compelling evidence of the incompetence of the Makah whalers in butchering the whale, their need for assistance from an Alaskan native and NMFS personnel to butcher the whale, and their decision to forego completing the butchering process to maximize the collection of all blubber and meat from the	

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	whale and to avoid wastage as is required by the WCA. Specifically, she writes: This video footage shows an Alaskan Inuit (unnamed for his protection) who was brought in by the Makah whaling commission to show them how to cook whale. He's shown here with National Marine Fisheries Service (NMFS) Joe Scordino and his colleges after reporters and whalers have left the beach they are seen trying desperately to keep the whale from going out with the tide. I showed up at the reservation shortly after the 10pm news had aired, something about that coverage made me uneasy so I grabbed a video camera and the only two people who would go with me (Andy and Jonathon) neither of whom had been involved in any of the protests, this would make it easier to slip onto the reservation unnoticed. Much went through my mind on that journey to Neah.... but mostly I wanted to see what would happen with the whale when the eyes of the world had left. As you will see the scene I embarked on was truly horrific... The tide was rushing in trying to reclaim the whale named Yabis. Joe Scordino of NMFS and the Inuit man (teaching cook;) worked feverishly to lighten the whale which was only one third of the way butchered at this time. They removed as much blubber as possible, throwing it onto a sandy, dirty blue tarp after onlookers refused to take it. In this clip you will hear an annoying background noise which is the sound of the Army truck used to eventually pull Yabis up from the tide... this exercise took several hours in real time and has been edited down.	

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	The canoe and whale where almost taken by the sea several times and a clearly unhappy crew from National Marine Fisheries Service grumble that they should not have to be doing this. The Inuit man calls for The Makah and their captain. (Wayne Johnson.) A boy who was one of three children on the beach offered his assistance but the ordeal clearly makes him ill. He asks the Inuit man "do you have to do this often?" The man replies "yea but we cut up our own whales". If the Makah wanted this whale so badly.. why where they so obviously absent here? And why was this two year old whales life to be wasted, her flesh left to rot into the next afternoon.. baking in the morning sun under a blue plastic tarp on a beach in Neah Bay as later reported by Whaleman. _____ Indeed, according to NMFS, the gray whale killed in 1999 generated 2000-3000 pounds of meat and 4000-5000 pounds of blubber. Draft EIS at 3-236, 4-145. According to Yablokov, however, a 44 foot gray whale killed in the Bering Sea in 1936 produced 20,020 pounds of blubber and 14,804 pounds of meat. This yield is far higher than that reported by the Makah though it is understood that the whale killed by the Makah may have been a juvenile. Nevertheless, the fact that the Makah obtained 2000-3000 pounds of meat and 4000-5000 pounds of blubber from the whale killed in 1999 is meaningless in regard to determining waste without disclosure of, at least, the total weight of the whale. Anecdotal reports, however, suggest that the Makah did waste a considerable amount of meat/blubber due to their inefficiency in	

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	butchering the whale killed in 1999 or because of their unwillingness to complete the butchering process in a timely manner. In addition to the data provided by Yablokov, NMFS must disclose any additional data that document the yield estimates of meat/blubber from gray whales so that the efficiency of the Makah in butchering this whale can be compared against such data so that both NMFS and the public can assess whether the Makah violated the WCA by wasting whale product due to the inefficiency in the butchering process. In addition, reports obtained from members of the Makah tribe document that the dead whale carcass was hauled to the tribe's landfill shortly after the kill with considerable meat and blubber remaining attached. While it is likely that scavenging birds, dogs, and other animals may have benefited from this unexpected food source, it is indisputable that the Makah violated the prohibition against waste contained in the WCA by allowing so much of the potential whale product from the killed whale to be discarded at the tribe's landfill. The inability of the Makah whaler's to efficiently butcher the killed whale and subsequent waste of whale products provides additional evidence that the Makah can't meet the standards for ASW under the IWC.	
AWI78	**6. Makah whaling will violate the conservation purposes of the MMPA:** As explained in the Draft EIS, the court in *Anderson v. Evans* defined the conservation purpose of the MMPA as "to ensure that marine mammals continue to be significant functioning	If we ultimately authorize a Makah whale hunt, we must make certain determinations under the MMPA, including a determination that the proposed taking will be in accord with the purposes and policies of the MMPA. The 2008 and new DEIS evaluate the potential effect of a hunt on the ENP gray whale stock as a whole and at various scales. This evaluation will provide the necessary information to the decision-maker in making any required MMPA

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	element[s] in the ecosystem" and not "diminish below their optimum sustainable population." DEIS at 1-18. NMFS fails to define, geographically or otherwise, the ecosystem of relevance in determining whether Makah whaling could or would violate the conservation standards within the MMPA. NMFS reports that the Makah Tribe claims that NMFS cannot deny the tribe's MMPA waiver application since tribal whaling "would not cause the ENP stock of gray whales to fall below its optimum sustainable population or to cease to be a significant functioning element of the marine ecosystem." DEIS at 1-19 citing Makah Tribe 2005a and Makah Tribe 2006a). If, as the Makah have done, the ecosystem is defined as the entire "marine ecosystem" inhabited by the ENP stock of gray whales it is not surprising that the Makah would conclude that its whaling could not violate the MMPA conservation standard. Considering the significant and increasing anthropogenic threats to the gray whale, however, it is not guaranteed, even at this extraordinarily broad scale of the entire "marine ecosystem," that Makah whaling may not adversely affect the gray whale over time. If, however, the "ecosystem" is defined more specifically, there is no question that Makah whaling could violate the MMPA conservation standard. In the context of the species, the gray whale occupies or uses a substantial area of ocean ranging from portions of the Beaufort Sea in the north to the protected lagoons of Baja California along the Mexican coast. This area does not constitute a single ecosystem but a series of ecosystem distinguished by physical, biological, oceanographic, and other characteristics. The composition of the substrate, prey species	determinations regarding the functioning of ENP gray whales as elements of their ecosystem. As noted previously, the purpose of an EIS is not to draw legal conclusions, but to evaluate the effects of a proposed action and alternative actions on the human environment.

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	and density, water temperature, water chemistry, and productivity of the feeding areas and migratory habitat used by gray whales is very different throughout the range of the species. Simply put, the characteristics of the habitat occupied by resident whales off the northwest coast of Washington differs from that in the arctic and in Mexico. Though NMFS repeatedly references the MMPA conservation standard that marine mammals continue to be significant functioning elements in the ecosystem, it never defines the ecosystem in which this standard applies. Considering that there are several different ecosystems occupied or used by gray whales, for the MMPA conservation standard to be meaningful NMFS must define the individual ecosystems and determine if the Makah were allowed to whale whether the impacts of said whaling would violate the conservation standard. For example, in this case, is the MMPA conservation standard applicable to the area occupied by the entire group of whales that comprise the PCFA (i.e., is the area occupied by whales within the PCFA considered a single ecosystem)? Alternatively, is the area defined as the ORSVI or the Makah U&A considered ecosystems in which the MMPA conservation standard would apply? Beyond defining the "ecosystem" in question, NMFS must also determine if a Makah whale hunt would impair the ability of gray whales to be a significant functioning element within the ecosystem. To make this determination, NMFS must understand the ecological and biological significance of gray whales within the ecosystem. Though our knowledge of resident gray whale movements, distribution, habitat use patterns, and behavior has improved over the decades since resident whales were first subject to study, our knowledge of	

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	their biological and ecological significance within the occupied areas remains paltry. If we don't understand the basic function of resident gray whales within an occupied ecosystem (regardless of how that ecosystem is defined), it is impossible to determine if the removal of resident whales through whaling will affect the gray whales ability to be a significant functioning element within the ecosystem. Thus, beyond simply identifying the ecosystem or ecosystems in question, NMFS must also both disclose the functional significance of resident whales within the ecosystem as well as assess the impact of Makah whaling on the gray whales' role within the ecosystem. Considering the likelihood that the Makah, if permitted to whale as described in the proposed action, will slaughter resident whales and that up to four resident whales could potentially be killed in a single year, the potential impacts to the functioning of the resident whales within the ecosystem could be significant. The fact that 77 percent of resident whales in the ORSVI in 2005 were documented in the area in previous years (i.e., indicative of some level of site fidelity) only increases the potential impacts associated with removing a proportionately large number of resident whales potentially far in excess of the calculated PBR.	
AWI79	**7. NMFS must clarify how and to whom the Makah, if permitted to whale, can share whale products:** The IWC defines "subsistence use" to include the "personal consumption of whale products for food, fuel, shelter, clothing, tools, or transportation by participants in the whale harvest," "the barter, trade, or sharing of whale products in their harvested form with relatives of the participants in the	As noted previously, the purpose of an EIS is not to evaluate legal issues. If we approve a Makah whale hunt, regulations would address this issue.

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	harvest, with others in the local community or with persons in locations other than the local community with whom local residents share familial, social, cultural, or economic ties" though "the predominant portion of the products from each whale are ordinarily directly consumed or utilized in their harvested from within the local community," and "the making and selling of handicraft articles from whale products… ." Draft EIS at 1-22. Though this definition is not contained in the ICRW or in the Schedule it was reportedly agreed to by the contracting governments of the IWC in 2004. Draft EIS at 1-22. NMFS interprets such language to mean that the Makah "could share whale products from any hunt within the borders of the United States with … relatives of participants in the harvest, others in the local community (both non-relatives and relatives), and persons in locations other than the local community with whom local residents share familial, social, cultural, or economic ties." Draft EIS at 1-23, 2-15, 4-100. This interpretation is so broad that the Makah could literally share whale products with anyone living in the United States including in Alaska, Hawaii, and potentially the U.S. territories. For example, "relatives of participants in the harvest" could live anywhere in the U.S. and persons with whom a Makah tribal member may share social, cultural, or economic ties could include virtually anyone including a friend, acquaintance, colleague, or business associate. It is improbable that the IWC intended for whale products taken from whales slaughtered in aboriginal hunts to be broadly distributed to virtually anyone within the country that allows the aboriginal whaling. Indeed, the IWC's definition of "subsistence use" specifies that the "predominant portion of the products from each whale are ordinarily directly consumed	

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	or utilized in their harvested from within the local community." Draft EIS at 1-22. Other definitions provide additional evidence that the NMFS interpretation of how the Makah can use/share any potential products from a whale (if the tribe is allowed to whale) is far too liberal. For example, the definition of "aboriginal subsistence whaling" adopted in 1981 by the Ad Hoc Technical Working Group on Development of Management Principles and Guidelines for Subsistence Catches of Whales by Indigenous [Aboriginal] Peoples, refers to whaling "for purposes of local aboriginal consumption" while the definition of "local aboriginal consumption" adopted by the same Ad Hoc group means the "traditional uses of whale products by local aboriginal, indigenous or native communities… ." Draft EIS at 1-30. The gray whale catch limit language in the IWC Schedule also specifies that the "taking of gray whales from the Eastern stock in the North Pacific is permitted … only when the meat and products of such whales are to be <u>used exclusively for local consumption by the aborigines</u>." IWC Schedule, paragraph 13(b)(2) and Draft EIS at 1-35. Finally, even the Makah, in its waiver application, make clear its intent to adopt tribal regulations that "will restrict the use of whale products to local consumption and ceremonial purposes.." which indicates that the Makah do not desire to have the ability to share whale products with anyone in the country with which they may have familial, social, cultural, or economic ties. Given these definitions and the Schedule language, the NMFS interpretation is far too broad and is destined, if the Makah were allowed to initiate whaling, to potentially lead to enforcement and other problems as whale meat could theoretically be shared with people living from Los Angeles to	

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	Miami and from New York City to Las Vegas. Though there is no legal basis for NMFS to permit the Makah to whale, if it chooses to do so it must tighten up its interpretation of how and to whom whale products can be distributed and/or promulgate new regulations or standards to limit the distribution/use of said whale products to the Neah Bay reservation. This would not prevent Makah or non-Makah who live off of the reservation from traveling to the reservation to partake in any potlatches but it would prohibit any whale meat or other whale products from being transported beyond the borders of the reservation. If the Makah are genuinely only interested in whaling to ostensibly revive their traditional and cultural practices, it should have no objection to such restrictions. In addition to imposing restrictions on the distribution/sharing of whale products, NMFS should also explicitly prohibit the sale of any whale product by anyone who participates in a whaling event and/or anyone who may receive whale products as the result of such an event. Though the Makah have agreed that any whaling would be non-commercial (i.e., no sale of whale products except for native handicrafts manufactured using parts/products from the whale), the Makah have consistently claimed a right to commercially profit from the sale of whale products as they did through trading of whale products historically. See Draft EIS at 3-330 ("…their original 1995 formal request to resume hunting of ENP gray whales stated that the Makah were reserving what they consider their treaty-secured right to whale for commercial purposes"). If NMFS, despite the evidence to the contrary, elects to issue an MMPA waiver to the Makah tribe, establish regulations to restrict any hunt, and to issue the required MMPA permits, it absolutely has and should use its authority to impose more	

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	stringent conditions on the Makah regardless of the opinions, arguments, or claims of the tribe. Finally, though NMFS has consistently held that native groups (Alaskans and the Makah) can create and sell native handicrafts from the inedible portions of slaughtered whales, it is unclear if this sale authority is legal. NMFS cites to the regulations implementing the WCA as authority for such sales (50 CFR 230.4 (f)) yet there is no explicit authority in the WCA itself to allow such sales. While the IWC has accepted one or more definitions relevant to aboriginal subsistence whaling that allows for the sale of such handicrafts, the WCA is the U.S. statute that implements the ICRW and, therefore, would presumably take precedence over the ICRW. Moreover, the MMPA does not permit the sale of native handicrafts produced from the inedible portions of whales as the MMPA authority to sell native handicrafts is limited to handicrafts made from fur seals. See 50 CFR 216.3. This must explain why the Makah requested, in its waiver application, limited authority to sell such traditional handicrafts. Therefore, if NMFS believes that the Makah have the legal right to sell native handicrafts manufactured from the inedible products of whales it must provide evidence that such authority exists in the law.	
AWI80	**8. NMFS is obligated to comply with NEPA when attempting to obtain IWC acceptance of catch limits for aboriginal subsistence whaling:** NMFS claims that its positions on issues subject to debate within the IWC are not "final agency action" and, therefore, NEPA review is not required since such positions are subject to change during IWC negotiations making any review of the	As noted in the 2008 DEIS (Subsection 1.2.4.1.4, United States' IWC Interagency Consultation): Negotiating positions advocated by the United States are not final agency actions; these positions may change during the negotiations. The United States' negotiating positions advocated before the IWC, moreover, may or may not be adopted by the IWC, and any attempt to analyze effects on the human environment would be speculative.

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	environmental impacts "speculative." Draft EIS at 1-24, 4-200. In regard to positions taken or decisions made about aboriginal subsistence whaling by a U.S. indigenous group, NMFS' interpretation of the applicability of NEPA is entirely inaccurate. Prior to any IWC meeting where a U.S. aboriginal whaling catch limit is to be discussed, the U.S. makes a decision whether to seek such a catch limit and what number of whales it intends to request as part of the catch limit based on the alleged needs of the aboriginal group. This decision is not made on the fly nor is it formulated at the IWC meeting itself, rather there is a review and decision process undertaken well before the IWC meeting. As a consequence, such a decision is a final agency action subject to NEPA review prior to an IWC meeting. Such a review requires the U.S. to disclose the environmental impacts of its decision and, perhaps more importantly, provides the public with an opportunity to participate in the decision-making process and to possibly alter the decision to be made by NMFS either by convincing the agency to forego seeking a quota at all or to modify that quota (up or down) based on evidence presented regarding either the status of the stock in question or as to the alleged need of the aboriginal group. In a June 2007 letter to NMFS, Friends of the Gray Whale and other groups criticized NMFS for failing to comply with NEPA prior to seeking a gray whale and bowhead whale quota for the Makah and Alaskan Inupiats, respectively, prior to IWC/59 in 2007. That letter (which is included among the attached documents) provides a detailed analysis of the applicability of NEPA to such decisions and counters the ongoing claims by NMFS that such decisions are not final agency actions.	

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AWI81	**9. The stated purpose and need for the proposed action are not legitimate:** NMFS asserts that the purpose of its proposed action is "to respond to the Makah's request to hunt ENP gray whales for ceremonial and subsistence purposes" and that the alleged need is "to address (its) federal trust responsibilities to the Makah." Draft EIS at 1-27. Strangely, since NMFS is the federal agency responsible for NEPA compliance, it also discloses that the Makah's purpose is "to resume its traditional hunting of gray whales under its treaty right" and its need is "to exercise its treaty whaling rights to provide a traditional subsistence resource to the community and to sustain and revitalize the ceremonial, cultural, and social aspects of its whaling traditions." Id. Contrary to the claims contained in the alleged need for the action that it is, in part, to revitalize Makah whaling ceremonies and social aspects of its whaling traditions, the IWC does not permit aboriginal subsistence whaling for "ceremonial purposes" or to advance any "social aspects" of a whaling tradition. Thus, such references must be deleted from the Draft EIS. Aboriginal whaling is only permitted when an aboriginal/indigenous group can demonstrate a "continuing traditional dependence on whaling and on the use of whales," Draft EIS at 1-30 and when whale products are needed to meet an aboriginal group's "nutritional, subsistence, and cultural requirements." Id.[81] The use of the conjunctive "and" in that	Comment noted.

[81] These criteria are included in the definitions of "aboriginal subsistence whaling" and "local aboriginal consumption" adopted in 1981 by the Ad Hoc technical Working Group on Development of Management Principles and Guidelines for Subsistence Catches of Whales by Indigenous [Aboriginal] Peoples. See Draft EIS at 1-30.

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	definition indicates that cultural needs alone are not a basis for qualifying for an aboriginal subsistence whaling quota as there must also be a nutritional and subsistence need. Furthermore, in IWC Resolution 1994-4 which established three broad objectives for evaluating aboriginal whaling requests from contracting governments, any alleged cultural need is directly tied to "nutritional requirements." Draft EIS at 1-21. Again, the use of the conjunctive "and" when referencing so-called "cultural and nutritional requirements" makes it clear that cultural needs alone are not a sufficient basis for either seeking or being granted an aboriginal subsistence whaling quota. Thus, the fact that some Makah have an interest in resuming whaling to enhance traditional ceremonies, to allegedly spur interest in their traditional language, to enhance traditional values, or to give more meaning to traditional whaling songs is irrelevant. The "nutritional requirements" of the aboriginal group is the key factor in determining if the group qualifies for an aboriginal subsistence whaling quota.[82] To be consistent with the concept of "subsistence use," however, the alleged nutritional need for whale products must be based on a	

[82] The claim by NMFS that "nutritional need is a factor in considering and setting aboriginal subsistence whaling catch limits, but not a threshold requirement," Draft EIS at 1-31, is simply wrong based on the various definitions referred to in this analysis. The fact that a Nutrition Panel in 1979 concluded that the nutritional needs of Eskimos could be met through local subsistence or western-type foods does not alter the importance of nutritional need in determining if a group qualifies for an aboriginal subsistence whaling quota. Unlike the Makah, in the case of the Alaskan Inupiats there was a demonstrable continuation in their consumption of whale products over time which is the other key criteria in authorizing aboriginal use. Finally, the claim that the Makah do indeed have a "nutritional need based on poverty and economic conditions on the … Reservation," Draft EIS at 1-32 is inconsistent with the available evidence that demonstrates that the Makah have subsisted fine without reliable access to whale products for over eighty years. Moreover, for reasons articulated in this comment letter, relying on any document produced by Renker, given her clear conflict of interest, to justify any alleged cultural or nutritional need of the Makah is inappropriate.

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	demonstrable need to include whale products in the diet for health reasons and/or to ensure the survival of the group. Simply enjoying the taste of whale meat/blubber and/or a preference for whale meat/blubber over venison, domestic beef, chicken, or fish is not an appropriate justification for an aboriginal subsistence whaling quota. In this case, neither the Makah nor NMFS has provided any evidence that the Makah must have access to gray whale meat, blubber, or other products in order to subsist. Indeed, over the past eighty years during which time the Makah have killed a single whale, there is no demonstrable evidence that the tribe's lack of access to whale meat, blubber, or other products has adversely affected its ability to subsist. If anything, evidence presented in the Draft EIS indicates that the Makah have no compelling need to access and consume whale meat/products to address any dietary deficiency. Similarly, the mere fact that the Makah claim to have a treaty "right" allowing it to whale has no bearing on whether the Makah have a legitimate subsistence need to whale. As previously mentioned, the fact that Congress failed to provide an exemption for the Makah or other mainland Native American groups to permit their killing of marine mammals as it did for Alaskan Natives when promulgating the MMPA is evidence that the Makah's treaty rights relevant to whaling and sealing have been abrogated. If there is no treaty right than the Makah can't rely on this claim in attempting to secure U.S. approval to whale and the U.S. has no federal trust responsibility to the Makah. Even if this treaty right remains intact, a treaty right is not one of the criteria used by the IWC to determine subsistence need.	

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	While such a treaty right may be of relevance domestically, since U.S. law recognizes the IWC as the preeminent authority in the management of whales, a treaty right has no bearing on whether the IWC's criteria for aboriginal subsistence whaling can or has been met. If the IWC's criteria has not been met then, under U.S. law, even if the IWC were to set a catch limit, NMFS cannot allocate the catch limit to the aboriginal group. Since neither NMFS nor the Makah have provided demonstrable evidence as to the tribe's subsistence need for gray whale meat/products, since any alleged cultural need to whale is tied to "nutritional requirements," since "ceremonial" or "social aspects" of aboriginal whaling are not relevant IWC criteria, and since any treaty right has no bearing on whether a group meets the aboriginal subsistence whaling standards imposed by the IWC, NMFS has failed to identify a legitimate purpose or need for the proposed action. Furthermore, if the existing purpose and need statement is deemed to be acceptable by NMFS then each and every time the Makah decide to request a modification to any gray whale MMPA waiver it may receive, NMFS will be obligated to engage in a new NEPA and waiver process. Such a waiver would also set a precedent for the Makah that may promote its submission of an application seeking an expansion of its whaling program to include the killing of other whale species, particularly humpback whales. If NMFS does not deny the present application it will be hard pressed to reject a future application and again, will have created a precedent requiring it to engage in both the NEPA and waiver processes. Considering the allegations that the Makah historically killed humpback whales with nearly the same frequency as gray whales and since the products of the humpback whale are believed to be of higher quality, it is likely that the Makah will seek an expansion of its	

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	whaling program in the future if it is given the permission to whale now. If NMFS would set the bar higher and develop or force the Makah to meet a higher standard in regard to the alleged purpose and need for whaling – as is required by NEPA – it could avoid problems in the future with the Makah attempting to expand and escalate any whaling activities if NMFS errs by authorizing a gray whale hunt at this time. Without a legitimate purpose and need, the Draft EIS is incomplete, illegal, and no further action should be undertaken pending, at a minimum, the development of a credible purpose and need statement.	
AWI82	**10. NMFS has failed to adequately articulate the jurisdictional issue relevant to the proposed whaling and has not provided an adequate discussion of the agency-specific statutes and regulations and their relationship to any proposed whaling:** The jurisdictional issues off the northwest coast of Washington are complicated. In addition to the Makah Reservation and its U&A, much of the marine zone is dominated by the Olympic Coast National Marine Sanctuary (OCNMS), the Washington Islands National Wildlife Refuges managed by the FWS, and the Olympic National Park under the management responsibility of the National Park Service. To complicate matters further the U.S. Coast Guard has established a regulated navigation area surrounding the Makah reservation and extending south along the coast, see map in Draft EIS at 3-3, and the U.S. military uses much of the area for training and other activities given the presence of dozens of military bases in the Seattle/Puget Sound area.	Comment noted.

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	NMFS attempts to provide a summary of the statutory and regulatory authority of most of the agencies who manage or use land or marine areas in northwest Washington. Its analysis, however, is woefully inadequate. As an initial matter, the map contained in the Draft EIS at 3-3 is likely inaccurate. For example, it is unclear if the map is actually drawn to the correct scale. If it is, the map suggests that the jurisdiction of the Washington Island National Wildlife Refuges extends out approximately 10 miles from shore. Interestingly, the boundary of the Refuges delineated on the map in the Draft EIS is similar to the boundary as indicated on maps contained in the Washington Island National Wildlife Refuges Comprehensive Conservation Plan which, as discussed below, potentially raises a number of questions about the applicability of other FWS statutes and regulations to any proposed whaling. However, AWI understands that not only is this depiction of the external boundary of the refuge complex inaccurate but that the ten-mile wide strip of coastal waters delineated on the map as being part of the refuge complex does not correctly depict the FWS's area of jurisdiction. Indeed, the FWS only has jurisdiction on the coastal islands that are part of the refuge complex from the mean high tide line and up or toward the terrestrial habitat. The NPS has jurisdiction along the portion of the coastal area occupied by Olympic National Park from the mean low tide mark and up or toward the terrestrial habitat. The NPS also has jurisdiction from the mean low tide to the mean high tide lines around each of the islands within the Washington Island Refuges. The actual marine or aquatic habitat is under the management jurisdiction of the OCNMS.	

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	Assuming AWI's understanding of these jurisdictional issues is accurate, NMFS must replace the map on 3-3 with a map that more accurately depicts that actual jurisdiction of the OCNMS, FWS, and NPS. OCNMS was designated in 1994 pursuant to the National Marine Sanctuaries Act, Draft EIS at 3-4, due to its "highly productive, nearly pristine ocean and coastal environment that is important to the continued survival of several ecologically and commercially important species of fish, seabirds, and marine mammals." Id. According to NMFS, regulations governing the management of the OCNMS "prohibit taking any marine mammal … except as authorized by the Marine Mammal Protection Act, … or pursuant to any treaty with an Indian tribe to which the United States is a party." Draft EIS at 3-6. If a tribal treaty is applicable then any "taking" of a marine mammal must be exercised in accordance with the MMPA and other relevant federal statutes. Id. and Draft EIS at 2-23. The Makah cannot satisfy this standard and, therefore, cannot be permitted to engage in whaling within the OCNMS. As previously explained, NMFS has failed to demonstrate that the conservation standard within the MMPA can be met if the Makah are allowed to whale since it has not defined the ecosystem in play. It also has not determined if the slaughter of whales within that ecosystem will significantly impair their function within that ecosystem. Moreover, since the Makah's treaty was effectively abrogated when Congress promulgated the MMPA and provided an exemption only for Alaskan natives, the treaty is no longer a relevant defense to allow the Makah to whale within the OCNMS. Without a valid treaty right, the OCNMS has no obligation to allow whaling within its	

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	borders and it, or NMFS its parent agency, should refuse to allow this activity within boundaries of the sanctuary. The Washington Island National Wildlife Refuges include the Quillayute Needles, Flattery Rocks, and Copalis refuges. These refuges are comprised of more than 870 islands, rocks, and reefs extending for more than 100 miles along the coast of WA. Draft EIS at 3-8. If the map in the Draft EIS on page 3-3 accurately depicts the area of jurisdiction for the FWS as including all islands and water from the coast to approximately 10 miles (based on the scale provided on the map), other laws governing the management of wildlife within the National Wildlife Refuge system would be applicable. For example, if whaling were to be permitted within this area, the FWS would have to, in addition to the completion of Comprehensive Conservation Plan, publish a compatibility determination for whaling, a whaling hunt plan, subject any whaling program within the refuge areas to NEPA compliance, and promulgate refuge specific regulations to authorize whaling. Based on a review of the Final CCP for the refuge published in 2007, no such analyses or regulations have been conducted or promulgated. The Final CCP specifies that the FWS goals for the Washington Island refuges "are to minimize or eliminate disturbance to wildlife." Final CCP at 1-22. To accomplish this the FWS has adopted as part of its proposed action evaluated during its CCP process the creation of a voluntary 200-yard boat-free zone around each of the refuge islands. Final CCP at 2-4, 2-22. In regard to tribal use of refuge islands, the FWS intends to develop agreements with each tribe which would be done separately from the CCP process. Final CCP at 2-2. The status of these agreements is unknown.	

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	Despite the FWS decision to establish such a boat-free zone which had to be known to NMFS when it was preparing the Draft EIS, NMFS' proposed action (Alternative 2) would allow the Makah to hunt and kill whales within this 200-yard boat-free zone. NMFS, as a sister federal agency to the FWS, should not promote an alternative whaling plan that would directly violate a management decision made by the FWS in order to protect wildlife species that utilize refuge islands. The fact that the boat-free zone is voluntary (since FWS does not have jurisdiction over the water surrounding its islands) is irrelevant given the FWS' stated conservation need for establishing said zone. Alternative 4 is largely mimetic of Alternative 2 except that it prohibits whaling within the 200-yard zone around each island consistent with the FWS management decision. Though the FWS claims that it will enter into agreements with the tribes, presumably including the Makah, to determine when and under what circumstances the tribes may have access to the islands, it is entirely unclear if the Makah can be legally permitted to land and butcher a whale on any of the refuge islands without the FWS having to engaged in additional analysis and/or publish additional regulations to permit such activities. Moreover, considering that the refuge islands are designated as Wilderness Areas, Draft EIS at 3-260, additional restrictions on the use of such islands and on the operation of motorized vehicles or equipment on or potentially near such islands (depending on the established boundary of the Wilderness areas) would apply. These same restrictions would also be relevant to other federal lands that are designated wilderness including within Olympic National Park.	

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	This is further complicated by the fact that the NPS manages a portion of the islands from the mean low-tide mark to the mean high-tide mark. Within these areas, the NPS Organic Act would be applicable. This statute and its implementing regulations provide some of the most protective standards for the management of any federal land areas. Among other things, the NPS must determine if any activity constitutes an impairment of NPS resources including wildlife, air quality, water quality, the viewshed (or the scenic quality), and the natural quiet or the values of serenity/solitude found in national parks. Beyond determining if an activity will cause an impairment, NPS Policies also require the agency to determine if the activity creates an "unacceptable impact." If an activity causes an impairment, the activity must be altered so as to mitigate its impact to avoid an impairment or it must be prohibited. The determination of an "unacceptable impact" is, in effect, a buffer to prevent the NPS permitting any actions that are likely to cause an impairment by avoiding activities that cause unacceptable impacts. Moreover, in nearly all national parks, including Olympic National Park, the intentional killing or slaughter of any park wildlife is prohibited. Thus, if the Makah were permitted to whale and NMFS did not prohibit such whaling within the 200-yard boat-free zone established by the FWS, the Makah could not legally pursue, kill, or finish off a wounded whale, or butcher a whale within the low-tide to high-tide zone around the refuge islands that is under the jurisdiction of the NPS. These same restrictions would apply if the Makah attempted to pursue, kill, dispatch a wounded whale, or land and butcher a whale on any land/water areas under the jurisdiction of the	

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	NPS within that portion of the Olympic National Park which is located along the northwest Washington coast. NMFS has entirely failed to disclose or discuss the jurisdictional issues raised above within the Draft EIS. While some discussion of the responsibilities of the different agencies is provided, the analysis is weak at best and is often confusing and inaccurate. The NMFS must not promote any alternative that would violate the FWS's decision to establish a voluntary 200-yard boat-free zone to protect refuge wildlife. Moreover, it has to disclose and discuss the relevant FWS and NPS laws that are applicable to the pursuing, slaughtering, killing a wounded whale, and/or butchering a whale on lands under the jurisdiction of the NPS or FWS.	
AWI83	**11. NMFS' claims that Alternative 1 would not result in any reduction in gray whale mortality is purposefully intended to dissuade the public from supporting this alternative and is in error:** Throughout the Draft EIS, particularly in Chapter 4, NMFS claims that if it "does not authorize a Makah gray whale hunt, or authorizes a hunt for fewer whales than provided in the bilateral agreement, the Russian Federation could authorize the Chukotka Natives to take any of the unused catch limit." Draft EIS at 4-4, 4-32, 4-44, 4-46. In other words, NMFS is claiming that selection of the no-action alternatives will provide no measurable benefit to gray whales by reducing the numbers slaughtered since whatever number of whales the Makah do not kill can be killed by the Chukotkan natives in Russia. This is a deliberate effort intended to downplay the benefits of Alternative 1 for gray whales thereby biasing public	Our purpose in the 2008 DEIS and the new DEIS is to present factual information, not to persuade. Both describe the likely impacts of proposed action. The practice of Russia over the past several years demonstrates that aboriginal hunters are capable of taking the entire IWC quota and have taken the entire IWC quota in those years when the Makah Tribe has not hunted.

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	opinion against this alternative since it will, according to NMFS, result in no net benefit for the gray whales. At the same time, NMFS may be attempting to set itself up to make a legal argument to counter any lawsuit that may be filed to challenge its decision to permit the Makah to whale by claiming that there is no legal remedy available to provide relief to the harms claimed by any plaintiffs since the same number of gray whales will be killed whether the Makah kill them or not. Such a purposeful effort to bias public opinion against Alternative 1 or to make false claims to bolster some future legal argument is entirely inappropriate and, of course, inaccurate. As an initial matter, the NMFS claim that any whales not killed by the Makah could be killed by Russian natives assumes that only migratory whales would be killed by the Makah. This is a risky assumption considering the behavioral characteristics of resident whales who tend to occupy areas close to the coast and who remain in the area for an extended period of time increasing the likelihood that they would be targeted in a hunt. Migratory whales, though also potentially traversing habitat close to the coast, would not remain within the Makah U&A for as long and, therefore, would not be as susceptible to being hunted. Any resident whales killed by the Makah would not and could not be accessible to the Russian natives. Second, the Chukotkan natives have not taken their full quota of gray whales in recent years if ever and there is no reason to believe that if NMFS rejects the Makah's bid to whale that the Chukotkans will suddenly increase their slaughter of gray whales to compensate for the whales the Makah are not permitted to kill.	

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	Finally, the claim that failure to authorize the Makah whale hunt would, under the terms of the bilateral agreement with Russia, allow the Russian natives to kill any of the unused gray whale catch limit assumes that neither the U.S. nor Russia would seek an amendment to the catch limit quota to reduce it by the number of strikes and whales allocated to the Makah by agreement between the U.S. and Russia. Indeed, if the U.S. denies the Makah's MMPA waiver application and/or if a court were to again rule that U.S. actions were illegal, the U.S. would be obligated to report such developments to the IWC and adjust the catch limit accordingly since, among other reasons, the Russians do not have a legitimate demonstrable need for additional gray whales.[83] If under such a scenario, neither the U.S. nor Russia acts to amend the catch limit, another IWC contracting government could do so in order to ensure that any catch limit accepted for the Russian Federation is consistent with the needs of its native peoples. For the foregoing reasons, NMFS must amend any language contained in the Draft EIS that suggests that the selection of Alternative 1 will not result in a single gray whale being spared slaughter and must reevaluate the environmental impact of Alternative 1 recognizing that its selection would, indeed, save a certain number of whales from human-caused slaughter.	

[83] The current gray whale catch limit authorized by the IWC was obtained prematurely and illegally by the U.S. By seeking a catch limit (jointly with the Russian Federation) in 2007 before complying with its domestic legal obligations as ordered by the court in *Anderson v. Evans*, the U.S. acted prematurely. At that time the Russian Federation should have submitted its own request for a catch limit independent of the U.S. with the possibility that, pending U.S. fulfillment of its domestic legal obligations, the U.S. would submit a separate request or the two countries would submit a supplementary joint request. The failure of the U.S. to withdraw its 2007 request is due to the mistaken belief that it acted legally and may be indicative of a predetermined outcome of the current process which is illegal.

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AWI84	**12. NMFS has failed to adequately address welfare concerns associated with the proposed hunt:** Both US domestic laws and the IWC require that whaling be conducted humanely. Under the MMPA, NMFS must make a finding that any whaling is humane which is defined as inflicting the least possible degree of pain and suffering practicable. Draft EIS at 3-111 citing 16 USC 1362(4); 50 CFR 216.3. The IWC definition of humane killing is "death brought about without pain, stress, or distress perceptible to the animal…" Id. NMFS downplays the significance of welfare concerns associated with the proposed whale hunt based primarily on the alleged relatively rapid kill (8 minutes) of the gray whale slaughtered by the Makah in 1999. Draft EIS at 4-41. Even assuming that this time to death is accurate, NMFS concedes that the whale targeted during the 2007 illegal whale hunt was hit with at least four harpoons and shot 16 times with high caliber weapons but still did not die for some ten hours after being struck with the initial harpoon.[84] The fact that four of the five Makah whalers involved in this incident trained for and participated in the 1999 hunt and that one, Wayne Johnson, was the captain during the 1999 hunt suggests that the reported results of the 1999 hunt may be an anomaly and that future hunts will likely involve significantly more suffering by the targeted whales. While the weapons and munitions used in the various aboriginal hunts differ, the fact that times to death for whales pursued and killed by Chukotkan natives, by Greenland	Comment noted.

[84] While the initial illegal act of pursuing and harpooning the whale was entirely the fault of the five Makah whalers involved in the incident, the significant suffering of the wounded whale and the failure of any agency to humanely euthanize this whale to prevent his/her suffering was entirely the fault of NMFS who, in a graphic display of incompetence, could not make a decision to end the suffering of this whale thereby allowing the whale to endure presumably immense pain for over ten hours.

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	subsistence hunters, and by Alaskan natives are much higher than that reported by the Makah for the 1999 hunt provides additional evidence that the 1999 results may be anomalous and not predictive of future hunt results. In Greenland, for example, where the subsistence hunters have far more experience killing whales than do the Makah, the average time to death for minke whales was 21 minutes with a maximum time to death of 90 minutes. Draft EIS at 3-117. Admittedly, the rifles used by Greenland's subsistence hunters are smaller caliber than the weapons used by the Makah but minke whales are also smaller than gray whales. In Chukotka, where only rifles were used as the killing weapon, the reported average time to death for 40 whales was 47 minutes (minimum 5 minutes, maximum 3 hours and 20 minutes). For Alaskan native whalers reported times to death were also high. Considering the much longer times to death documented in other aboriginal hunts, including the Alaskan bowhead hunt, NMFS fails to consider the possibility that the reported time to death of the whale killed by the Makah in 1999 was an anomaly (though eight minutes can by no means be considered instantaneous) and that future kills will not be so rapid. Consequently, NMFS must assume, for the purpose of its analysis and in regard to its mandate under the MMPA to determine if whaling is humane, that the time to death in future Makah whale hunts is likely to be higher raising significant animal welfare concerns.	
AWI85	**13. NMFS has failed to adequately evaluate the potential health impacts associated with contaminant loads in gray whales:**	Comment noted.

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	The issue of so-called "stinky whales" has been a subject of discussion at the IWC for years based on concerns raised by the Russian Federation over its identification of a small number of whales that emit a medicinal odor and whose meat and blubber is inedible if the whale is killed. Efforts have been made by a number of governments, including the Russian and US governments, to determine the cause of this odor for years yet any laboratory findings or conclusions from such studies either are not being released to the public or have not been completed. There have also been, rather surprisingly, difficulties associated with obtaining, packaging, and shipping appropriate samples for analysis. While conclusive evidence of the source of the reported odor remains unreported or unknown, a report provided by the Russian Federation at IWC/60 claims that it found high levels of PCBE's in a sample of the liquid taken from a sample obtained from a "stinky" gray whale killed by the Chukotkan natives. The liquid was obtained after the frozen sample had thawed. PCBEs are used as flame retardants in the manufacturing of a variety of household goods and potentially for fighting forest/wildland fires. Since the Chukotkan natives have documented the presence of "stinky" whales it is presumed, but not actually proven, that "stinky" whale also migrate along the west coast of the U.S. and potentially could be killed by the Makah (if the Makah are allowed to whale). While the Makah may elect not to consume any portion of a "stinky" whale, if they did choose to consume any portion of the whale this would raise concerns about the possibility of impacts to their own health.	

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	This is not the only contaminant documented in gray whales that may be of concern both for the health of the gray whale and, if consumed, for the health of the Makah. Though many studies suggest that gray whales have lower levels of heavy metal contaminants compared to other marine mammals, there are other persistent organic compounds that may be of greater concern particularly due to potential health impacts to the Makah. NMFS, for example, reports that "numerous researchers have documented concentrations of organic and inorganic contaminants in the tissues (muscle, organs) of the gray whales proposed for hunting by the Makah. Draft EIS at 3-301 citing Varanasi et al. 1994; Jarman et al. 1996; Krahn et al. 2001; Mendex et al. 2002; Ruelas-Inzunza and Paez-Osuna 2002; Tilbury et al. 2002; Ruelas-Inzunza et al. 2003; Dehn et al 2006a; Dehn et al. 2006b). Table 3-44 in the Draft EIS (page 3-304) contains a list of the concentrations of organic compounds measured in freshly harvested and stranded gray whale tissues including DDTs, dieldrin, hexachlorobenzene, and PCBs. NMFS fails, however, to explain if these levels are in excess of what is considered safe for human consumption. Since NMFS is considering the possibility of allowing the Makah to hunt and consume gray whales, it must do more than simply disclose the level of various contaminants found in gray whales by comparing these levels to any government safety standards. Considering the amount of seafood consumed by the Makah, the amount of contaminants (i.e., heavy metals, organic compounds, and other toxic chemicals) likely or documented to be in those foodstuffs (e.g., salmon, halibut, shellfish), and other contaminants in the environment, the cumulative	

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	impact of continuing to consume their existing diet while potentially adding gray whale blubber/meat/organs to their diet may pose unique yet unknown risks to the health of Makah tribal members. NMFS concedes that such cumulative impacts may be of concern. "While there is documented evidence of the beneficial effects of the nutrients in marine foods, persistent and potentially toxic chemicals also occur and are documented in the diets of native subsistence populations (citation omitted). In considering the type and amount of chemicals the Makah could ingest by consuming whale products, their continuing exposure to these contaminants is also a result of their ongoing, high consumption of other seafood products, including finfish and shellfish." Draft EIS at 3-301. Because of this potential cumulative impact posed by the Makah's consumption of various seafood products, including potentially gray whale, all of which may contain some level of contaminants, NMFS must do more than simply disclose information about chemical and other contaminants in gray whales. Instead, it must actually assess the likely impact of the consumption of gray whale products alone and in combination with the other traditional food products used by the Makah on human health.	
AWI86	**14. NMFS analysis of the social environmental is incomplete, inaccurate, and biased:** According to NMFS and the Makah, a resumption of whaling is necessary to promote the restoration of Makah cultural and to achieve a spiritual awakening among tribal members. As stated in the Draft EIS, "the Tribe believes it must revive these	The Makah Tribe asserts that a revival of their culture is necessary to combat social ills within the society, and that a resumption of whaling is necessary to pursue their cultural revival (Makah 2005a). The 2008 DEIS and the new DEIS draw limited conclusions about the effects of authorizing or not authorizing a Makah whale hunt. Specific elements of the DEIS conclusions are discussed further below.

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	traditions (whaling) to combat the social disruption resulting from the rapid changes of the last century and a half." Draft EIS at 3-213. Examples of such social disruption are teenage pregnancy, children dropping out from high-school, substance abuse, and juvenile crime. In other words, the Makah believe that a resumption of whaling will help address these social problems by presumably restoring pride and reinvigorating the role of traditional culture into the lives of tribal members. NMFS, however, provides no evidence to suggest that such beneficial impacts are likely to result if it allows the tribe to whale. If these and other specific problems are, in fact, the basis for allowing the Makah to whale, NMFS should quantify the current severity of such social problems on the reservation so that, in the future, the impact of whaling on such social issues can be actually measured.	
AWI87	NMFS suggests that whaling will provide benefits to the tribe beyond merely providing access to gray whale meat/blubber as it will increase the interests of young people in learning the Makah's traditional language, in practicing ceremonial rituals associated with whaling, and by giving the youngsters role models in the community. It is, however, unclear why whaling needs to be practiced for these benefits to be realized. Indeed, the Makah already have initiated a program to encourage its tribal members to learn the traditional language, it is not barred from engaging in any ceremonies, and surely there presumably already are individuals in the community that can and should be role models for the younger generation. Many of these efforts were begun decades ago well after the Makah voluntarily gave up whaling in pursuit of the more financially lucrative activity of sealing. Despite the fact that the tribe has killed only one whale in eighty years, these programs designed to revive Makah cultural have persisted for decades.	The 2008 DEIS concluded that under Alternative 1 (no hunt) the Makah Tribe could engage in many activities, practices, and ceremonies associated with whaling (Subsection 4.10.3.1, Alternative 1), while under Alternative 2 (the Tribe's proposal), the Tribe could engage in more activities, practices, and ceremonies associated with whaling (Subsection 4.10.3.2.2, Opportunity to Resume Whale Hunting). The assertions here do not undermine that conclusion.

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AWI88	Though the Makah claim that it must resume whaling to promote a cultural and spiritual revival among its people, this is simply not true. As evidenced in the Draft EIS, in the 1960s a small group of elderly Makah women initiated an effort to teach other tribal members about the cultural traditions of their people. Draft EIS at 3-239. At about the same time valuable archeological discoveries were being made at the Makah's ancient Ozette village site. These discoveries also provided an important impetus for renewed respect of and interest in the knowledge of Makah elders. As a result of these discoveries the Makah Cultural and Research Center was created to support Makah cultural activities. Draft EIS at 3-239. Indeed, from the 1960's to the present the Makah have engaged in many efforts to revitalize their traditional culture. To what degree these efforts have been successful is not disclosed in the Draft EIS. If they have been successful then this diminishes the alleged cultural need for whaling. If they haven't been successful then it's unclear if a return to whaling will actually reverse such trends or aid in addressing the social problems on the reservation.	The DEIS describes in general terms some of the results of the Makah Tribe's cultural revitalization that began in the 1950's and 1960's (Subsection 3.10.3.5 Contemporary Makah Society). It is unclear what the commenter means by success beyond this general description of the results.
AWI89	A great deal of emphasis is placed on the alleged spiritual and physical preparations undertaken by those who participated in the 1999 hunt. While it is hoped that such preparations were undertaken by all who participated in the hunt, there is no proof that all participants engaged in all traditional preparations particularly those of a spiritual nature. There also was and is no requirement that those participating in the hunt engage in such rituals (i.e., ritual bathing, praying, rubbing the skin with boughs and nettles, engaging imitative performances; Draft EIS at 3-227) or that there family members do so as was the case historically (i.e., the whaler's wife would be expected to lay quietly and still while her	Comment noted.

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	husband was out whaling so that the whale "would give itself to her husband"; Draft EIS at 3-228. Moreover, despite the alleged importance of such spiritual and physical preparations for whaling, there is no evidence that such preparations were made before the five Makah tribal members (including four who participated in the 1999 hunt) engaged in the illegal hunt of a gray whale in September 2007. These individuals were not engaged in the exercise of any spiritual journey, they simply had grown impatient with the current NEPA and MMPA process and wanted to make a statement about the tribe's alleged treaty right.	
AWI90	The bulk of the information contained in the Draft EIS regarding the social environment and discussions about the history of whaling, the spiritual importance of whaling, and the cultural value of whaling to the tribe is from work done by Renker. While Renker's qualifications to conduct the work, including preparation of the tribe's 1997 and 2002 needs statements submitted to the IWC, may be appropriate, she cannot be considered unbiased due to the fact that she is married to a member of the Makah Tribe who was or is a member of the Makah Whaling Commission. It is understood that NMFS was aware of this clear conflict of interest but elected to not engage any other qualified anthropologists who would not have such a clear conflict to review and critique Renker's analyses or to prepare an independent report documenting the tribe's alleged needs.	Dr. Stephen Braund assisted in development of the 2008 DEIS. Dr. Braund visited the Makah reservation and interviewed tribal members. He also reviewed Dr. Renker's work and included references to it in his report. We also retained Dr. Dorothy Kennedy to review our presentation of Dr. Renker's work and provide comments. The names of both of these cultural anthropologists appear in the list of preparers.
AWI91	The bias of Renker is best reflected in her conduct of at least two Makah household surveys conducted in 2001 and 2006 which were intended to measure Makah interest in whaling. One of many deficiencies in the 2002 survey methodology and implementation was the fact that when the researchers identified four Makah households known to be opposed to	The new DEIS provides a more complete description of the methods and results of Renker's household survey (Subsection 3.8.3.1, Makah Tribal Members). The text now makes clear that for the 2001/2002 survey, the numbers reported are a percentage of those who responded to the surveys, not a percentage of tribal membership or even a percentage of those surveyed. We agree that where the draft EIS relies on the 2001/2002 survey as evidence of the level of support for

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	tribal whaling in their random selection of households to survey, those households were not surveyed. Instead the researchers completed the survey for those households answering negatively to all questions regarding support of the hunt or use of whale products. Not only is this entirely inconsistent with any valid survey methodology but it also raises a question as to whether the researchers manipulated the data of the households that were surveyed to generate results that would suggest that whaling has more tribal support than it actually does. The deficiencies inherent in Renker's surveys along with her clear conflict of interest raise serious questions about her objectivity. Given these issues, NMFS cannot simply accept Renker's findings but rather, must independently verify such information either by having qualified NMFS staff undertake a review or by contracting with external experts (who do not have a conflict of interest) to engage in such an analysis.	and interest in whaling within the Makah Tribe, the DEIS should not overstate the conclusions. To further ensure that NMFS decision-makers give appropriate weight to the information from Renker's household surveys, a discussion of the limitations of the data from the surveys has been added to the new DEIS. We have also included the information that Renker has lived on the reservation for many years and has close ties to the community.
AWI92	**15. NMFS contracting with Parametrix Inc. to assist in the preparation of the Draft EIS presents a clear conflict of interest:** It has long been suspected if not known that NMFS had entered into a consultative relationship with a private firm, Parametrix Inc., for assistance in compiling relevant information, analyzing the information, and preparing the Draft EIS. In the List of Preparers and Agencies Consulted in the Draft EIS, a Parametrix Inc. official is listed as the Parametrix Project Manager. While there is nothing untoward or illegal about NMFS hiring a private consulting firm to prepare a NEPA document, Parametrix Inc. has a clear conflict of interest in this case which should have immediately disqualified it from consideration as a consultant in the preparation of the Draft EIS.	As is allowed by law (40 CFR 1506.5c), we employed a contractor to assist in preparation of the draft EIS, under the supervision of NMFS staff, and using a competitive and documented process to select Parametrix. At the beginning of the contract, the contractor disclosed that it also had a contract with the Makah Tribe to assist in the development of the Cape Flattery Tribal Scenic Byway Scenic Corridor management plan. After the unauthorized hunt in September 2007, members of the public raised questions about additional work Parametrix was performing for the Tribe. When questioned by NMFS about the additional work, Parametrix provided information on the details of the subsequent contract, and affirmed that it had obtained the work for the Tribe in a competitive process. Also as required by federal law, Parametrix and its subcontractors have signed disclosure statements prepared by NMFS as affidavidts that there is no conflict of interest by being employed by both the Tribe and NMFS (40 CFR 1506.5c). We accepted the disclosure statements in good faith, and conducted due

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	This conflict is due to the fact that the Makah Tribe has routinely hired Parametrix, Inc. to prepare various reports or analysis for the use of the tribe. NMFS has also used and continues to use Parametrix as a consultant on some of its other fishery related projects. While the latter relationship is of no significant consequence, the former relationship is of serious concern as it taints the objectivity of the entire Draft EIS. As a consequence of this existing and potentially long-term professional and financial relationship between Parametrix and the Makah, a conflict of interest in NMFS hiring Parametrix to prepare the Draft EIS is indisputable. The fact that Parametrix officials signed a government form claiming not to have a conflict of interest is entirely erroneous given the firm's preexisting relationship with the tribe. Moreover, the explanation provided by Makah Tribal Chairman Micah McCarty at the June 2008 public meeting at which the Draft EIS was discussed that the specific Parametrix office working on the Draft EIS is different than the office who had worked and continued to work with the Makah on its projects is irrelevant. Parametrix is Parametrix regardless of what office worked on what project. NMFS did not disclose the role of Parametrix in preparing the Draft EIS anywhere in the actual document with the exception of the listing of the Parametrix Project Manager at the end of the document. It is not clear if Parametrix was responsible for the preparation of the entire Draft EIS or only portions of the analysis. If the latter, it is not clear what portions were the responsibility of Parametrix. This conflict of interest problem is significant and can't be remedied except by NMFS terminating	diligence reviews of Parametrix's role as a contractor for the Tribe. We concluded that there was no potential for conflict to occur, and further, no biased information could be inserted into the draft EIS under our sole supervision. Producing an EIS is the responsibility of the federal action agency (40 CFR 1506.5(a)(c)). We are responsible for the content and process. We do not consider the relationship between Parametrix and the Tribe to have compromised the integrity of Parametrix's work product, and in any event are confident that in exercising our oversight we have ensured the document is a product of our analysis.

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	the existing process and starting anew by either preparing an analysis in-house or be hiring another consultant, that does not have any financial or professional ties to the Makah tribe, to prepare the new environmental document. Continuing this process without addressing this serious problem is unacceptable and could result in the entire document being invalidated by a court of law.	
AWI93	**16. NMFS has underestimated the potential precedent that would be set if it authorized Makah whaling by granting the requested waiver:** NMFS largely discounts the possibility that if it were to grant the Makah the requested MMPA waiver, authorize the tribe to engage in aboriginal whaling, and allocate a gray whale quota to the tribe that a dangerous precedent would be set. Specifically, the possibility exists that if the Makah were allowed to whale then other tribes may seek similar opportunities, other countries may use this as justification for aboriginal whaling requests for their aboriginal groups, and/or it would lead to additional MMPA waiver requests. It provides virtually no credible data or analysis to substantiate these claims apparently believing that wishful thinking is a sufficient basis for ignoring such precedential impacts.	The points summarized in this introductory paragraph are addressed below.
AWI94	In regard to other tribes, NMFS claims that the Makah are the only tribe whose treaty explicitly protects its whaling practices. While this may be true, it ignores the fact that many of the other treaties between the U.S. and various tribes protect tribal rights for fishing and hunting. For tribes that occupied coastal areas, hunting may have very well included the pursuit and killing of marine mammals including cetaceans. The mere fact that the treaty language does not explicitly reference whaling may not be sufficient in a court of law to convince a	Contrary to this assertion, the 2008 DEIS stated that "some Northwest Indian tribes traditionally harvested and used products from . . . marine mammals;" that tribes in the past have "expressed an interest in harvesting marine mammals;" and that "some tribes may continue to believe and assert that their treaty rights to take marine mammals are not subject to the MMPA." It concluded that a waiver for the Makah Tribe "may influence these other Indian tribes in the Northwest and nationally to seek waivers of the moratorium to take marine mammals," and that the "outcomes of any future processes would depend on facts not presently known, but it is possible that [a waiver] could

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	judge that a tribe that can document a history of hunting cetaceans did not intend to protect that practice when it signed a treaty with the U.S. government protecting its hunting rights.	lead to increased federally authorized take by other Indian tribes." Subsection 4.17.2.1.2, Increased Take of Marine Mammals by Indian Tribes.
AWI95	NMFS discounts the possibility that other tribes would seek aboriginal status under the WCA by arguing that no tribe has done so even though the Alaskan natives were granted such status 29 years ago while the Makah gained said status 9 years ago. Draft EIS at 4-199. This claim ignores the fact that the Alaskan natives were granted an exemption from the prohibitions of the MMPA and that the Makah's efforts to resume whaling have been highly controversial and subject to two federal lawsuits. The lawsuit may have dissuaded other tribes from pursuing similar opportunities. Those tribes may be waiting to see if NMFS is successful in authorizing whaling by the Makah and if such permission withstands any potential legal challenge. If that were to occur, other tribes may then pursue opportunities mimetic of those provided by the Makah believing that there proposals would be less controversial since the precedent would have already been set by the Makah.	Because no other tribes have requested a quota under the WCA, the 2008 DEIS states "NMFS considers it unlikely that publishing a WCA gray whale quota for the Makah's use . . . would influence other tribes to seek WCA quotas." Subsection 4.17.2.1.3, Increasing Aboriginal Subsistence Whaling and Harvest of Whales. The commenter cites reasonable factors that could have discouraged other tribes from seeking an aboriginal subsistence whaling quota. Accordingly, the new DEIS states, "it is uncertain whether publishing a WCA gray whale quota for the Makah Tribe's use . . . would influence other tribes to seek WCA quotas" (Subsection 4.17.2.1.3, Increasing Aboriginal Subsistence Whaling and Harvest of Whales).
AWI96	NMFS must disclose information about other tribal treaties in its analysis and should consult with appropriate legal scholars and/or the relevant case law as to the likely interpretation of hunting rights as applied to coastal tribes. If the courts, as is likely, are predisposed to interpreting the language of treaties quite broadly, NMFS cannot discount the likelihood that granting permission to the Makah to whale could open the floodgates of proposals from other tribes to be provided similar opportunities.	As noted above, we have adjusted the conclusion in the new DEIS regarding the likelihood of other tribes seeking a WCA quota.
AWI97	Though NMFS discounts the precedential impact of granting the requested waiver to the Makah, Draft EIS at 4-198, it concedes that its waiver of the moratorium and issuance of	The challenge to Alaska's management of walrus was brought by Alaska Natives based on the fact that the MMPA exempts them from the take prohibitions. NMFS' return of authority to the State of Alaska could not give Alaska the

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	regulations and permits for the Makah to hunt whales "has the potential to lead to additional requests for MMPA waivers from non-Indians or Indian tribes, and ultimately to the federally-authorized take of additional marine mammals," Draft EIS at 4-197, and that "it is possible that implementation of Alternatives 2 through 6 could lead to increased federally authorized take by other Indian tribes." Draft EIS at 4-198. Despite acknowledging the possibility of such impacts, NMFS uses Alaska's request for a waiver for 10 species submitted in 1976 as evidence of a likely lack of precedential impact of the issuance of a waiver to the Makah by arguing that Alaska's request did not generate additional requests from other states. Draft EIS at 4-198. Of course, this may be due to a successful legal challenge to this waiver by Alaskan natives. Draft EIS at 4-197.	authority to regulate Native takes (*People of Togiak v. United States*, 470 F.SUPP. 423 (DC 1979)). In 1981 Congress amended the MMPA to make it easier to return management authority to the states and to overrule the decision in that case (H.R. 97-228, 97th Cong., 1st Sess. 1981, reprinted at 1982 U.S.C.C.A.N. 1458, "The purpose of this language is to explicitly overrule the decision of the United States District Court in People of Togiak v. United States"). Accordingly, based on the lack of requests for waiver of the take moratorium or for return of management authority from any state other than Alaska, the new DEIS continues to conclude that future requests are unlikely, even if we waive the take moratorium in response to the Makah Tribe's request (Subsection 4.17.2.1, National Regulation of Marine Mammal Harvest).
AWI98	In regard to the implications of a Makah whale hunt within the IWC, NMFS claims that countries may choose to use the Makah example to justify their future proposals to allow aboriginal or similar whaling in their countries but that this will not alter the position of the U.S. in regard to its opposition to commercial whaling, will not affect the existing moratorium, and will not prevent the U.S. from actively pursuing its positions within the IWC. Draft EIS at 4-200. Considering that the U.S. is currently leading an IWC effort to develop a compromise package that may permit the resumption of commercial whaling and/or create a new category of so-called community based whaling to placate the Japanese and its allies, the U.S. claims that the Makah whale hunt would not or has not altered its internal policies in regard to the most contentious issues within the IWC are invalid.	The United States' delegation to the IWC has offered compromise proposals that would allow limited commercial whaling including small-type coastal whaling by Japan. The quid pro quo within these proposals is that Japan must severely decrease its research whaling. The commenter offers no evidence to support the suggestion that the United States is seeking a compromise that would allow commercial whaling and small-type coastal whaling because of the U.S. position on Makah whaling.
AWI99	NMFS concedes that Japan or other countries could use approval of Makah whaling -- given the tribe's substantial	The United States authorized the Makah Tribe's whale hunt in 1998, 1999, and 2000. Any impacts claimed in this comment have already occurred.

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	hiatus in whaling – as evidence of the expansion of the definition of aboriginal subsistence whaling (which it certainly is). This expansion, Japan and its allies would argue, provides precedent for the IWC to approve whaling operations similar to aboriginal subsistence whaling activities (i.e., coastal whaling) which, like the Makah's hunt, don't precisely meet the IWC accepted definition of such activities. Draft EIS at 4-201. NFMS discounts such an impact by claiming that this argument has been made even in the absence of the Makah hunt. While this may or may not be true, it is indisputable if NMFS ultimately allows the Makah to hunt that countries will exploit that approval to seek IWC approval for subsistence-like hunts in their own countries. In essence, U.S. approval of Makah whaling will be a de facto expansion of the definition of subsistence use.	
AWI100	While the U.S. continues to claim that its position on commercial whaling, the moratorium, scientific whaling, and other hot button issues within the IWC has not changed as alleged by conservation groups, the fact is that over the past decade or so (remarkably coincidental with the U.S. efforts to secure a gray whale quota for the Makah), U.S. whale conservation efforts and policies have weakened considerably. The Alaskan bowhead hunt and obtaining the bowhead quota every five years from the IWC has become the key issue that now dictates all other U.S. positions within the IWC. Considering the time and expense incurred by the U.S. in its continuing efforts to permit the Makah to whale, it is clear that this issue may be of equal importance to the government thereby also becoming a key consideration in U.S. deliberations on IWC issues of concern.	U.S. efforts to seek a compromise on commercial whaling have expanded as the Japanese research whaling has expanded. As in all parliamentary arenas, the many participants have many goals. The United States' express goals have included a halt to commercial whaling and support for international conservation efforts.
AWI101	Finally, as NMFS concedes in the Draft EIS, not a single previous MMPA waiver application that it has processed has ever resulted in a successful waiver of the MMPA. Draft EIS at	The assertions in this comment are speculation. The commenter points to no information beyond that considered in the 2008 DEIS that would inform predictions regarding future waiver requests.

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	3-312. Though NMFS has previously approved such applications, those have been found to be invalid by the courts. The issuance of a waiver to the Makah could, if not invalidated by a court, provide a blueprint of sorts for future waiver requests which, predictably, would be filed more frequently if the Makah "model" succeeds. This would not only require NMFS to expend considerable resources to complete the complicated waiver process but could also begin to impact marine mammal populations depending on the final disposition of such applications.	
AWI102	**Conclusion:** For all of the reasons articulated above, NMFS has no choice to either select Alternative 1 (the no-action alternative) or terminate the current process and begin anew by preparing a more complete and objective analysis of the impacts of Makah whaling. As drafted, the Draft EIS is woefully inadequate and does not comply with the legal requirements of NEPA. NMFS has failed to disclose all relevant information, its analysis of environmental impacts is incomplete or weak, and it has completely failed to evaluate the all reasonably foreseeable cumulative impacts of the proposed action. A new EIS or a supplement to the existing EIS is required if NMFS intends to continue to pursue its efforts to permit Makah whaling. Thank you for considering these comments. Sincerely, D.J. Schubert Wildlife Biologist Animal Welfare Institute	The points summarized in this concluding paragraph are addressed above.

D. Sandstrom – Comments submitted August 15, 2008.

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DS1	Thank you for the opportunity to comment on the DEIS for the proposed Makah whale hunt. My comments are listed below. 1. The DEIS is insufficient because it does not adequately assess the potential long-term impacts to the whales behavior, and associated negative impacts on the regional economy. The emergence of friendly gray whale interactions is a relatively new phenomenon, beginning with spontaneous interactions between native people in Baja and the whales in the 1970s. This relationship, and the cross-species trust that is at the heart of it, is fostered and encouraged by a whale-watching industry from Baja to Alaska, drawing millions of visitors from around the world to the west coast. The DEIS blithely assumes that there will be no net change in the whales' behavior if the Makah hunts are allowed to continue. How can NOAA and its consultants be so sure, and what are they risking if they are wrong? The friendly behavior and the trust that engenders it can be unlearned as surely as it was learned. How many hunts will it take? The issue is exacerbated for the whales that the Makahs are most likely to hunt. Based on the two hunts that have occurred, the Makah will kill resident whales. To the extent that they are able to find other food sources, how long will it be before the resident whales learn to avoid Washington's west coast? The potential negative impact on the entire region, including other tribes and businesses who depend on ecotourism associated with gray whales, deserves serious and further evaluation. For example, surveys assessing the impact of and support for the hunt should be submitted to and completed by residents of the state beyond the Makah tribe.	This comment claims the DEIS is inadequate because it doesn't address certain effects. The DEIS fully analyzes the potential for a Makah hunt to cause whales to avoid the Makah U&A (refer to Subsection 4.4.2.4, Change in Numbers of Gray Whales in the Makah U&A and OR-SVI Areas and Subsection 4.4.3, Evaluation of Alternatives). The conclusion of the analysis is that such a change in distribution is possible, though not likely.
DS2	2. The DEIS is insufficient because it labels this activity a "hunt," and does not address the critical fact that the whales themselves have changed. The Makah cannot recreate the cultural experience of their forefathers because the whales do not fear them (yet). To kill a friendly gray whale who approaches a canoe in a complete act of trust requires no more courage than kicking a puppy. It is spiritually and ethically bankrupt for the tribe to conflate this activity with any experience their ancestors might have had, and irresponsible of NOAA to participate in the confusion.	Comment noted.
DS3	3. The DEIS is insufficient because it does not explore or promote an alternative that protects the whales and the ecosystem, as well as the long-term cultural recovery and economic interests of the tribe. The Makah have not benefited economically or socially from the two previous hunts that have occurred. In fact, they may have suffered from unofficial boycotts. Significant numbers of the public, who are generally supportive of the tribe, are sickened by the brutality of the whale hunts that have occurred. Public response to the last, illegal hunt conducted by the tribe in September 2007 was overwhelmingly negative. The Seattle Times reversed its earlier endorsement of the hunt and cited its opposition to the practice in an editorial (Sept. 2007) The Makah could take advantage of their ancestral connection with the whales and their year-round proximity to the resident population to create an ecotourism industry at Neah Bay. This would offer the best long-term economic solution to the tribe, and best support NOAA's mandate to protection and preserve the	The DEIS explains why certain alternatives implied by this comment were considered but not analyzed in detail.

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	whales and their ecosystem. NOAA should take a leadership role in supporting the tribe to execute their treaty right in a manner that is culturally sound, economically viable, and consistent with long-term protection of the whales and the tribe. None of the alternatives proposed meet those criteria.	
DS4	4. The DEIS is insufficient because it does not address the illegal hunt conducted by the tribe in September 2007, and its negative impacts on the whales, the general public, and NOAA's ability to manage the species. In September 2007, members of the Makah tribe, including three members of the Whaling Commission, harpooned and shot a gray whale in the nearshore waters of the Straits of Juan de Fuca. Though the whale sank before it could be positively identified through DNA, it was anecdotally identified as a resident whale, so familiar to locals it had a nickname. By taking a resident whale in an area outside the hunting area, without a permit, and at a time that only resident whales were likely to be in the area, the Makahs demonstrated an utter disregard for preservation of the subspecies, and complete contempt for NOAA's authority and the existing rules of law. By not punishing the tribal members associated with the activities, the tribe demonstrated it is unwilling or unable to regulate its own tribal members with regard to whaling. For these actions, the tribe should not be rewarded with expanded opportunities to whale. The public has lost confidence that the tribe will abide by any agreement tendered under any alternative that NOAA selects.	The 2008 and new DEIS both describe the details of the unauthorized 2007 hunt. The new DEIS further elaborates on the law enforcement outcomes following that hunt.
DS5	4. Finally, the DEIS is insufficient because it does not address the long-term negative impacts for the whales and all species of the public must endure and then becomes accustomed to seeing whales killed, butchered and eaten again. The conservation movement that gave rise to the MMPA, and shift in public awareness that accompanied it, is one of the great environmental successes of the last century. The recovery of the gray whales is one of the MMPA's most celebrated successes. If NOAA elects to undermine the MMPA by allowing the Makah to so egregiously violate it, it also risks a huge erosion in public will to support or practice stewardship for other species. Over time, that will impact NOAA's long-term ability to protect and preserve not just the gray whales but all marine mammals. For example, it seems ironic if not hypocritical to issue a ticket for violating the MMPA to a boater in the San Juans, yet looks the other way while the tribe is butchering whales a little further west down the Strait.	Potential impacts to the suggested resource – "all species" – through the suggested mechanism are too speculative.

D. Weinstein – Comments submitted August 14, 2008.

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DW1	As a concerned citizen, I would like to submit the following comments concerning the 2008 Makah DEIS: 1. The DEIS, as well as the previous Environmental Assessment (EA), contains bias, half-truths, fallacies and misrepresentations. As for example, on page 3-290 the DEIS states that "One jet ski operator ran into a Coast Guard vessel" even though television cameras clearly showed the Coast Guard boat intercepting in such a way as to cause the jet ski operator to be hit and run over. This and other subtle and not so subtle variations from the truth taint the entire document.	In response to this and related comments, the new DEIS now states that a jet ski operator "collided with" a coast guard vessel.
DW2	2. The DEIS is also tainted by NMFS's history of closeness with the Makah and their unwavering support of the whale hunt. As for example: · Showing strong support and backing for the whale hunt in the media and other statements and actions. · Allowing a cultural presentation by the Makah at previous EA hearings and not allowing others to also make presentations. · Allowing printed materials from the Makah to be distributed at the EIS Public Scoping Meeting without also allowing written material from those opposed to the whale hunt. The materials in question included The Makah Nation on Washington's Olympic Peninsula Visitor Guide and The Makah Indian Tribe and Whaling: Questions and Answers Makah Tribal Council and Makah Whaling Commission January 2005. · Minimizing and dismissing public comments on the previous EA (90% of these comments were against allowing the whale hunt). · Discouraging public comment with the overwhelming 900 plus page DEIS along with a short comment period. · Refusing to listen, accept, and recommend reasonable alternatives to the hunt.	Comment noted.
DW3	3. An independent citizen and scientific review board, outside of NMFS and other government influence, should edit the DEIS as well as other documents for truth and accuracy.	Comment noted.
DW4	4. The public input process for the DEIS was flawed. At the October 2005 public scoping meeting in Seattle, the attendees were divided into groups and a facilitator wrote down their comments and alternatives on a flip chart.	Same response as to comment #1 above.

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	These ideas were so condensed and mangled by the process that they were no longer recognizable, and yet this is what was then supposed to be used to develop the alternatives in the DEIS.	
DW5	5. The May 2008 DEIS meeting in Seattle was also flawed and biased. People had to choose between giving/listening to oral comments or attending a question and answer session. There was a signup sheet to give oral comments and if you were attending the Q & A session, the questions had to be written down prior to the session on blue cards. Only three people signed up to give oral comments, all of which spoke against the whale hunt. The facilitator then allowed other people to speak in favor of the whale hunt, even though they had not signed up. After giving comments, I attended the remainder of the Q & A session and they refused to allow me to ask additional questions because they had not been written down previously on the blue cards. The meeting was then disbanded even though it was a full hour prior to the stated end time. People should not have to choose between giving oral comments and asking questions. If the rules were bent to allow additional people to speak, they should have also allowed people to ask additional questions, especially when there was a full hour remaining.	Comment noted.
DW6	6. The alternatives presented in the DEIS go above and beyond what the Makah have asked for and show a pro-whaling bias by NMFS. Real alternatives such as a ceremonial hunt where the whales are not actually injured or killed, development of ecotourism, and federal compensation for not hunting should have been included but were wrongly dismissed.	The new DEIS examines different alternatives. The alternative of a ceremonial hunt was considered but not analyzed for the reasons described in the 2008 and the current DEIS.
DW7	7. NMFS has repeatedly stated that the Makah have a treaty right to hunt whales. The treaty states that, “The right of taking fish and of whaling or sealing and usual and accustomed grounds and stations is further secured to said Indians in common with all citizens of United States ...”. Since the citizens of the United States do not have the right to hunt whales, neither do the Makah. This key clause is conveniently excluded throughout the DEIS and other documents.	The purpose of the EIS is to examine the effect of alternatives, not determine legal issues.
DW8	8. NMFS has repeatedly stated that the IWC gave permission for the Makah whale hunt. The DEIS should state the truth that the IWC did not give permission and that this was just a side agreement between the U.S. and Russia.	The 2008 and new DEIS fully describe IWC actions.
DW9	9. The DEIS needs to explain why the NMFS thinks that the IWC gray whale quota applies to the Makah and why a separate specific request has not been made.	The 2008 and new DEIS fully describe the U.S. position and IWC actions.

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DW10	10. The idea that the Makah whale hunt is needed for subsistence is unfounded and is not recognized by the IWC. The original request for five whales per year is based upon five ancestral villages, not a dietary need. The DEIS fails to mention that the IWC has never recognized the Makah subsistence need.	Comment noted.
DW11	11. The claim of cultural need for the Makah whale hunt is also unfounded and sets a dangerous precedent that could be used to justify repeating all kinds of cruel, senseless, and horrible acts of violence. Cultural killing of whales is akin to animal sacrifice. Times have changed since the Makah originally hunted whales and there is no going back. This is the 21st century and cultural traditions that involve violence and killing should be left in the past. The DEIS needs to address animal sacrifice and its damaging effect upon society.	Comment noted.
DW12	12. If a waiver is granted under the Marine Mammal Protection Act, this sets the stage for other groups or commercial enterprises to do the same thing. The DEIS needs to clearly address this weakening of the MMPA.	This issue was explored in the 2008 DEIS and is dealt with more fully in the new DEIS.
DW13	13. The DEIS wrongly minimizes the negative health effects of eating whale meat. Whale meat is full of toxins, contaminants and food-borne pathogens and is especially unhealthy and dangerous for children to eat, however, the DEIS states that there is insufficient information for it to be considered a problem.	The new DEIS explores this issue in more detail.
DW14	14. The DEIS wrongly minimizes the negative aspects on the Makah such as the further separation and isolation of the Makah from mainstream America, which will do nothing but intensify their social and economic problems. The whale hunt has further divided our society and has encouraged anger and hatred.	The 2008 and new DEIS examine the effects of the alternatives on the social environment.
DW15	15. The DEIS should fully address the violent message the whale hunt sends to our children. How do you reconcile the joy of watching these highly social and intelligent creatures, then turn around, and allow them to be harpooned just because someone's ancestors have done so in the past.	Comment noted.
DW16	16. The DEIS should fully address the human emotional and psychological impacts of seeing a whale killed and our waters turning red with blood.	Comment noted.
DW17	17. The DEIS states that the whales should be killed humanely. There is no humane way to kill a whale. It cannot be determined when death actually occurs and they can suffer for hours. The Makah say that they will get better at killing with practice. This obviously did not occur with the illegally killed whale that took eleven hours to die.	Comment noted.

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	The whale was harpooned and shot 16 times, and this was done by men who had trained and participated in the previous hunts.	
DW18	18. The DEIS states the No-Action Alternative #1 will not result in fewer whales killed, because if the Makah do not kill the whales then the Chukotka Natives will. This is the same as saying we should not protect migratory species in this country because if we do not kill them, other countries will. Just because another country allows killing, it does not mean that we should.	The purpose of the EIS is to examine the effects of the alternatives.
DW19	19. Our resident whales need to be fully protected and the DEIS should not trivialize the issue. A full scientific study needs to be done to identify our resident whales and how their numbers are replenished. Since the "experts" can only guess at this point, they should err on the side of caution.	Since publication of the 2008 DEIS, NMFS and others have conducted additional research into stock structure of PCFG whales. These studies are described and discussed in the new DEIS.
DW20	20. According to the DEIS, the estimated population of the Eastern North Pacific Gray Whales has dropped 33% from 29,758 in 1997/1998 to 20,110 in 2006/2007. A 33% drop in population is huge and needs to be fully explained and not just dismissed as a normal change in population. With such a drop in population, it is imprudent to allow whales to be hunted. In addition: · IWC Commissioner Doug De Master said that the gray whale population is estimated at 17,000 whales, which is a full 3000 less than the NMFS estimate. · The IWC Scientific Committee and the Marine Mammal Commission have requested new studies to ascertain the current status of the whales. These requests have been ignored by NMFS. · Canadian researchers estimate the population to be as low as 15,000. When the population was at this level before, the whales were listed under the Endangered Species Act. · There has been a significant reduction in the number of calves. Last year's count was 100. · Global warming is creating food shortages and many whales are showing signs of emaciation. · The whales are migrating later and seeking other feeding areas. · There has been a significant increase in the number of "stinky" whales. · Oil and gas development rapidly accelerating in the gray whale feeding areas. · According to new genetic research the original population of gray whales was 118,000. The remaining population is a tiny fraction of the original population and the IWC quota of 140 whales will put the survival of the gray whales at risk.	The new DEIS presents current information on ENP gray whale abundance and trends, as well as current information on calf production.

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DW21	21. DEIS Table 4-1 Primary Differences Among Alternatives, And Associated Assumptions for Analysis shows the assumed number of whales with harpoon attempts and approaches, number of rifle shots, etc. These assumptions are based upon 1999-2000 hunts. The data from the illegal hunt should also be included since several of the men had trained and participated in the previous hunts.	In response to this and similar comments, we re-examined and adjusted the methods we used to estimate the likely numbers of hunt days, harpoon attempts, shots fired, etc. These new methods, and the results of applying them, are described in the new DEIS (for example, see Subsection 4.1.2, Alternative 2).
DW22	22. The DEIS wrongly minimizes the negative effects on other wildlife including endangered species. The whale hunt would have a negative impact on other birds, fish, and mammals, as their lives would be disrupted by boats, helicopters, and guns being fired in our National Marine Sanctuary.	These effects are considered. The comment offers no additional information for us to consider.
DW23	23. The DEIS Glossary does not include a definition of the word “sanctuary”. Since NMFS obviously does not understand the meaning of the word, it should be added to the Glossary. Webster’s defines sanctuary as “a refuge for wildlife where … hunting is illegal”. It goes against all reason to allow whaling in our National Marine Sanctuary.	Comment noted.
DW24	24. The DEIS wrongly minimizes the economic impact of the whale hunt at the national, state, and local levels.	Comment noted.
DW25	25. The DEIS wrongly minimizes the economic impact of the whale hunt on the whale watching industry as well as local tourism. The whales have only known friendly vessels will soon learn to avoid all boats. People will also avoid the whale watching tours so as not to encourage the whales to think that people our friendly and it is safe to approach boats. The tourism and the whale watching industry in Iceland took a major hit when Iceland resumed commercial whaling.	Comment noted.
DW26	26. The DEIS wrongly minimizes the effect on worldwide whaling. Japan as well as other nations are already claiming that they also have the right to hunt whales if we do. Canadian tribes now also want to resume whaling. The definition of subsistence whaling will be expanded and result in increased whaling and less conservation.	Comment noted.
DW27	27. The DEIS needs to address the fact that the Makah whale hunt will open the door to commercial whaling.	Comment noted.
DW28	28. The DEIS Table 4-3 Estimated Costs of Enforcement Related Activities and Resources shows costs ranging from a half million to two million dollars. This is an outrageous waste of taxpayer money, just so that the Makah can hunt whales and feel better about themselves.	Comment noted.
DW29	29. The full taxpayer cost of supporting the Makah whale hunt should be included in the DEIS. This should include all monies paid and received, past	Comment noted.

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	and present by federal, state, and local governments. The costs should include but not be limited to those for preparing the EIS and other documents; conducting meetings; supplying guns or other equipment; training; tracking whales; bringing in experts; sending representatives to the IWC meetings; deals and negotiations with other governments; press conferences; use of the Coast Guard; use of the National Guard; law enforcement such as the Washington State Highway Patrol and local police; closing roads, and court and legal fees, etc. All future and ongoing costs should also be included.	
DW30	30. With the recent national disasters and the war on terrorism, our Coast Guard and the National Guard are already stretched too thin. These resources should not be diverted to aid and abet whaling in our National Marine Sanctuary. The need for these resources and the effect on our national security and disaster preparedness should be included in the DEIS.	Comment noted.
DW31	31. The DEIS lists elements common among action alternatives 2 - 6 (page 2-5). One of these elements is "Tribal enforcement of whaling regulations". This is like having the fox guard the hen house. After promising tough prosecution of the illegal whalers, The Makah Tribal Court only fined the men $20 each. This clearly shows that they cannot or will not enforce whaling regulations.	Comment noted.
DW32	32. NMFS insists that the illegal whale hunt by the Makah should have no bearing on the DEIS. According to the July 29, 2008 Peninsula Daily News article "Court memos suggest on eve of sentencing that Makah Tribal Council OK'd whale hunt last year". If this proves to be true, then it shows a complete lack of respect for the laws of the U.S. and the application by the Makah should be denied.	The 2008 and new DEIS consider the implications of the illegal hunt for any future hunts by the Makah Tribe.
DW33	33. If the general public is restricted in order to protect their safety, then this denies them their right to access and enjoy the coastal areas. The rights of citizens and public safety should not be sacrificed so that the Makah can kill whales just to feel better about themselves.	Comment noted.
DW34	34. It is morally wrong to hunt whales that have only known friendly human contact and who willing come up to boats expecting to be greeted, as they are in the birthing lagoons in Baja. Killing these friendly whales is akin to shooting fish in a barrel and a betrayal of their trust.	Comment noted.
DW35	35. Lastly, the whale hunt is unnecessary, cruel, and inhumane and no amount of rationalization can ever change that.	We have considered these comments in preparing the new DEIS.

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	For the sake of the whales, other wildlife, the Makah and the general public, the only reasonable and responsible alternative is the No-Action (Alternative #1). Please advise that my comments have been received and will be taken into full consideration.	

Earth Island Institute – Comments submitted August 20, 2008 by W. Anderson.

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EII1	In response to the Federal Register [May 9, 2008 (Volume 73, Number 91, page 26375-26376] notice, these are my comments as an individual, and on behalf of Earth Island Institute, on the Draft Environmental Impact Statement for Proposed Authorization of the Makah Whale Hunt, dated May, 2008. The May, 2008, Makah DEIS is arguably better than its predecessors in some areas but upon reading with more depth contains many of the same problems of bias and omission as previous versions of this document written by NOAA/NMFS. There is additional information, greater effort and depth for a number of areas. That does not diminish the fatal fact that too many key issues were not addressed at all, addressed insufficiently or understated as being a problem or concern that needed further attention. In some areas, there was an extensive effort at documentation, but the information was given little weight and dismissed to the detriment of gray whales and Makah alike. In yet other areas, there was such blind, unfounded optimism that precautionary approaches in making conclusions were ignored. There is new and relevant information that I will cite. There are additional papers in the scientific literature; I was not able to follow up on these due to lack of time. These comments are arranged in the following order: general overviews are followed by specific comments, the Renker needs statement and then conclusions. <u>General Overviews</u>	These paragraphs contain introductory material.
EII2	<u>PREY</u> There seems to be no certainty for any time span covering the sub-arctic and arctic region except that ecosystem regimes vital to the survival of the ENP gray whales are changing rapidly. Current	In response to this and other comments, the new DEIS contains expanded and updated information regarding potential impacts to gray whales from potential future changes in the Arctic resulting from climate change (Section 3.4.3.6.11, Climate Change and Ocean Acidification).

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	indications lead the scientific community to believe that calf survival success is tied to ice conditions both in total area covered and "quality." Researchers are hypothesizing about the net effects of ice loss. They are coming to some varying conclusions (in the details) because of the countless co-mingling of inputs, factors that change rapidly over time in complicated ways. There appears general agreement that these changes exceed both historic and prehistoric events likely because of anthropogenic factors (global warming). The simple model is that there is greatest biological productivity and benefit to gray whale prey at the edges of ice packs. Arctic ecosystems are in radical flux as are the conditions that will either support or destroy the availability of gray whale prey. While some research believes there can be, at least initially, an increase in productivity in the northern gray whale foraging areas, this is dependant upon a number of factors such as currents being altered by the warming of marine waters, an expected increase in waves that may increase mixing and dispersion of nutrients not beneficial to productivity, the availability of nutrient-rich detritus from under-ice organisms may never reach the benthic community to produce densities and qualities of benthic prey required by gray whales and in some areas may be at depths too deep for gray whales. The expected increase in precipitation will increase the flow of fresh water from rivers emptying into marine waters and affect the habitat of prey species. There will be renewed competition between prey species and non-prey species, as well as other predators that may wish to exploit new prey communities. There appears to be no certainty, no true predictability or consensus in the scientific community as to effects of loss of ice cover and global warming (barely mentioned in the DEIS) upon gray whale prey. The DEIS response to all of this is commentary that ENP gray whales have proven truly adaptable in the past. It assumes the same will be true in the future – without basis. This blind optimism permeates the document.	

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	In one paper I can't again find, a researcher stated that these questions of predictability in the arctic were like putting a marble on top of an ice cream cone: it will roll off the top, but no one can predict in which direction. Gray whales face greater uncertainty and will have to expend more energy searching for new sources of food and swimming further to eat. That may further increase offshore births well north of traditional calving lagoons. In one paper cited, there is the proposal that the slight warming of water along the coast of California will help claves with loss of body warmth (Shelden at al. 2004) but no where in the DEIS do we see a questioning about calf survival being an issue for those born north of the birthing lagoons. Some of the required discussion missing from this DEIS is marine acidification and possible impacts upon prey species, threats of disease upon prey arising from warming, an examination of globally-warmed ecosystems far more thorough than the minimalist content presented, the threats of noise upon prey species and the impacts of toxic burdens on prey species.	
EII3	One exception of content was a discussion in the DEIS about how gray whales find food. The specifics of this are an uncertainty for baleen whales in general. Literature talks about how gray whales are able to utilize marine topography to their advantage. However, a discussion of what is and is not known on this subject and its implications is essential since what we don't know may kill them. Are there sounds (and their frequencies) their prey create? Chemical signals from their prey? And how do gray whales distinguish where the larger, more nutritious second-year amphipods are and consume them before turning to smaller-sized populations of the same species? If we acknowledge we do or do not know these things, we can address them as issues for gray whale viability as it pertains to noise (masking of prey), toxics (masking "taste") in the same way they are recognized as essential issues for endangered populations of salmon.	In response to this comment, the new DEIS contains additional information about gray whale foraging behavior (Section 3.4, Gray Whales). However, available science does not provide detailed answers to some of the specific questions posed in this comment. The recovery of the ENP gray whale stock from commercial exploitation, and the conclusion that the stock is at its OSP level, are indicators that the stock is viable. This comment raises the concern that future predictions of gray whale viability are uncertain in the face of global climate change. In response to this and similar comments, we have included Alternative 6 in the new DEIS, which limits the term of a waiver to 10 years. This would allow for an assessment of any ongoing effects of climate change on gray whales after a set period of years.

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	Papers regarding prey that may be of interest to NOAA/NMFS include: Stelle and Megil, date; Feeding Behavior of Gray Whales on Mysid Swarms: Prey Selection Based on Body Size; Stelle, L.L., 2006; Activity budget and diving behavior of gray whales in feeding grounds off coastal British Columbia.	
EII4	<u>POPULATION</u> Of the three original gray whale populations, one is extinct and the other nearly so; the remaining population (NMFS estimate of 20,110) had a precipitous drop in 1999/2000 when we lost one-third to nearly one-half of this only viable population. Yet the writers of the DEIS are content to be dismissive of this "blip." The DEIS even states that a lowered K from natural and anthropogenic causes should have everyone accepting the lower K-induced populations! Throughout the DEIS, the writers (and some members of the scientific community) are not looking at the other side of the coin: the reduced K, if it exists, is itself a threat to the population and should be addressed as such – but is not. There is but a brief mention about Alter et al that should be addressed in the next version since time may not have allowed the authors to make substantive review. There is nothing precautionary about the NOAA/NMFS approach.	The new DEIS discusses Alter et al. (2007) as well as later papers by Dr. Alter and others regarding historical population size and the appropriate approach to estimating carrying capacity for a marine mammal population (Section 3.4.3.1.3, Population Exploitation, Protection and Status).
EII5	<u>PCFA/ORSVI RESIDENTS</u> The exposure of pre-June 1 PCFA/ORSVI whales to hunting effort does not seem to be accounted for in the DEIS. Being in the area longer means greater exposure to harassment of all levels, being struck (and not being counted as a strike) and struck and lost. These whales are more important than the DEIS explores.	The 2008 DEIS included estimates of the numbers of PCFG whales that would be exposed to hunt activities under the action alternatives, based on sighting data (for example, Table 4-1, Primary Differences among Alternatives, and Associated Assumptions for Analysis). As discussed in more detail in the 2008 DEIS, it is reasonable to expect that hunters would encounter PCFG whales in the same proportion as do researchers photographing whales. The new DEIS uses updated information to estimate the proportion of PCFG whales likely to be encountered by hunters (for example, Table 4-1, Primary Differences among Alternatives, and Associated Assumptions for Analysis).

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EII6	Given there was not a decline in the PCFA/ORSVI whales during the 1999/2000 die-off, and since there is still a reported 10% + of skinny whales observed in calving lagoons, these southern coastal foragers whales may be an essential component of gray whale survival not reflected in their relatively few numbers. In Goerlitz, D.S., 2003; *Mitochondrial DNA variation among Eastern North Pacific gray whales on winter breeding grounds in Baja California*, there are indications of a traceable substructuring of the larger ENP GW population and that further testing of the biopsies from PCFA/ORSVI whales already in possession (plus future research) are likely to reveal more about the role PCFA/ORSVI whales are playing in the survival of the population overall. None of them should be removed under the Makah proposal because they showed remarkable resiliency during the 99/00 catastrophic die-off. We need every one of the "residents" whose "less than 1% (if I recall correctly)" habitat strategy is worth more than their current low numbers suggest - numbers NMFS is dismissing as not important.	The commenter cites no information, and we are not aware of any information, to support the statement that "there was not a decline in the PCFA/ORSVI whales during the 1999/2000 die-off." Because surveys of summer-feeding whales did not begin coast-wide until the late 1990's, the surveys are not adequate to support a conclusion about trends in PCFG abundance just before or after 1999/2000. Contrary to this comment, Calambokidis et al. (2011) hypothesize that the large number of new sightings during the early survey years may be a combination of "discovery" and immigration. Lang et al. (2011) model several assumptions regarding the demographic trends of the PCFG whales, including an assumption of a 30% increase in the population following the 1999/2000 die-off. This information is discussed in detail in the new DEIS (3.4.3.4.1, PCFG Population Structure). That discussion also addresses the potential importance of the PCFG feeding strategy to the overall health of the larger gray whale population.
EII7	<u>GLOBAL WARMING and ECOSYSTEMS</u> These subject areas are entirely deficient. The writers have barely touched upon these subjects apparently fearing to tread too far from the "project area." It is commonly and clearly recognized in the literature that, though the impacts of global warming upon the gray whales' sub-arctic and arctic ecosystems effects may not be entirely predictable, the changes already are drastic. Papers that may be of interest to NOAA/NMFS are: O'Shea and Odell, 2008; Large-Scale Marine Ecosystem Change and the Conservation of Marine Mammals; Palumbi, S.R. et al, 2008; Ecosystems in Action: Lessons from Marine Ecology about Recovery, Resistance, and Reversibility; Moore, S.E., 2008: Marine Mammals As Ecosystem Sentinels;	The 2008 DEIS explored several threats occurring throughout the range of ENP gray whales (Section 3.4.3.6, Known and Potential Anthropogenic Impacts). In response to this and similar comments, the new DEIS contains updated information on individual threats and also examines additional threats such as climate change and ocean acidification (Subsection 3.4.3.6.11, Climate Change and Ocean Acidification). Subsection 5.4, Gray Whales, considers the cumulative effect of those threats when considered in the context of the action alternatives.

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	Climate Change 2001, Report of the Intergovernmental Panel on Climate Change; Obst and Hunt, 1990; Marine Birds Feed At Gray Whale Mud Plumes In the Bering Sea; AFSC Processed Report 2007-05; May 2007; Implementation Plan for Loss of Sea Ice (LOSI) Program.	
EII8	MAKAH DIETARY NEEDS AND HEALTH/FOOD CONTAMINATION The DEIS fails to present information needed for the Makah to make safe food choices, does not present independent scholarship on nutritional needs in Neah Bay and leaves interested parties to guess what threats to gray whales may be presented by toxic burdens. The health and trust responsibilities to the Makah and gray whales are equally entwined.	The 2008 DEIS presented available information regarding contamination in gray whales (Section 3.16.3.2, Environmental Contaminants in Gray Whales), and the new DEIS includes updated information in the same section. The new DEIS also notes that under the action alternatives, individual tribal members would be exposed to higher levels of certain contaminants as a result of eating more whale products (Section 4.16.3.2, Alternatives 2 through 6).
EII9	There is a paucity of information regarding the current toxic burden of Makah tribal members in Neah Bay. The DEIS is wholly reliant on two authors, Renker and Sepez, covering a few papers, for the bulk of its information and all of its conclusions. I will respond the Renker Needs Statement in a later section of my comments. The DEIS uses Renker's claim that fully 55% of Makah dietary intake is fish high in essential fatty acids and many other key dietary needs. Yet, the argument is made in many (DEIS) places that there is a need for even more essential fatty acids without stating the current intake already present and the (non-existent) shortfalls whale oil is supposed to supply to prevent lifestyle diseases prevalent in Neah Bay. I saw nothing indicating that on-reservation Makah did not already meet high levels of essential fatty acids intended to reduce insulin resistant diabetes and heart disease/better serum lipid profiles.	The 2008 DEIS noted that the action alternatives may result in an increase in certain minerals and omega-3 fatty acids in the Makah diet, which could have health benefits (Section 4.16.3.2, Alternatives 2 through 6). It makes no assertions that Makah tribal members need an increase in any particular nutrients. The new DEIS reaches the same conclusion and adds that the action alternatives may increase the exposure of tribal members to certain contaminants, depending on whether whale products replaced other foods with similar contaminants (primarily other seafood), or food that did not (Section 4.16.3.2, Alternatives 2 through 6).
EII10	This is doubly troubling because a high-content fish diet is likely to also be high in contaminants. Who is acknowledging concern and	See the response to the two previous comments.

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	examining impacts from adding contaminated whale fat to the Makah diet? Studies report a widely varying amount of toxic contaminants in gray whales but, there is no human advocacy here. Some literature and the DEIS make the mistake of saying contamination is relatively low (in some studies) compared to those found in other, even more heavily contaminated marine mammals. This kind of comparison by relativity to other foods is a gross disservice to the Makah and the DEIS should point that out. What needs to be known is what are the current toxin burden levels of Makah, how much are they getting from their current foods and what would starting to eat whale oil and meat do to their toxic burden and allowable recommended limitations? NOA/NMFS/BIA agencies have had nine years to research these questions. It is entirely premature to schedule a decision on the alternatives offered in this document without knowing the impacts of those alternatives upon the health of the Makah. This is unconscionable.	
EII11	Yet, at DEIS 3/302 and 3/303 we are told DDTs and PCBs were higher than other gray whales tested. If I understand the figures, the levels of these two contaminants alone are exceeding by four and more times the levels cited by the USDA as "safe." What is even more unfortunate is that it appears this 1999 whale was not tested for many other contaminants known to be spreading throughout global ecosystems including PBDEs that act much like PCBs in the human body. If the DEIS is not simply reporting what is known, then that must be corrected. If it reflects all that is known, then agencies have failed in their most basic responsibilities. I feel this as much as the suffering the Makah want to cause in the gray whales. The chemicals I cite here have been linked with hyperactivity and insulin resistant diabetes, the very issues Renker and others are concerned about.	The 2008 DEIS presented available information regarding contamination in gray whales (Section 3.16.3.2, Environmental Contaminants in Gray Whales), and the new DEIS includes updated information in the same section. The new DEIS notes that under the action alternatives, Makah tribal members who consume gray whale products may be exposed to increased levels of those contaminants known to be present in gray whales (Section 4.16.3.2, Alternatives 2 through 6).
EII12	It is unlikely gray whales can escape the effects of most of these toxic burdens. Heavy chemical contamination is one of the chief suspects in the "stinky whale phenomenon. Flame retardants, perhaps PBDEs that are common in Washington state marine mammals, are one of several	Based on the abundance and productivity of the gray whale population described in the 2008 DEIS and new DEIS, it does not appear that contaminants have prevented the ENP gray whale population from achieving its OSP level.

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	suspects. Research can and must identify the levels and sources of this contamination because they are threats. These threats to both gray whales and their prey are not adequately presented in the DEIS. Ebbesson et al, 2005c, as cited in the DEIS, describes how poor health can continue in an area that access to whale consumables. I can't find the DEIS recognizing this idea. Papers that may be of interest to NOAA/NMFS include: De Luna and Rosales-Hoz, 2003; Heavy Metals in Tissues of Gray Whales and in the Sediments of Ojo de Liebre Lagoon in Mexico; Budge, S.M. et al, 2008; Blubber fatty acid composition of bowhead whales: Implications for diet assessment and ecosystem monitoring; Booth and Zeller, 2005; In Environmental Health Perspectives; Mercury, Food Webs, and Marine Mammals: Implications of Diet and Climate Change for Human Health; AFSC Processed Report 2004-05, 2004;Computations of Historic and Current Biomass Estimates of Marine Mammals in the Bering Sea; Burek, K.A. at al, 2006; Effects of Climate Change on Arctic Marine Mammal Health.	
EII13	Makah dietary needs have never been based on quantifiable data, but instead on the insufficient basis of five Makah villages no longer extant. The whole idea of a four-whale need is betrayed by the DEIS offer to limit landed whales to two in DEIS Alternative #5. Instead of Renker's questionable and Sepez' advocacy papers, there should be a discussion of why a cultural anthropology panel was not appointed as was for the bowhead DEIS process. Since this DEIS uses these two unquestioned sources to so large an extent, it is incumbent upon NOAA/NMFS to examine the methodologies, data and conclusions in a peer-reviewed context. These papers underly the entire proposed	The purpose of including alternatives in an EIS is to develop relevant information for the decision-maker and the public. The 2008 DEIS included an alternative with lower harvest levels for that purpose. The DEIS reached the following conclusion regarding that alternative: "With the high percentage of Makah residents desiring whale products for consumption and use, limiting the number of whales harvested to two would likely not satisfy the Makah's need for whale products; would result in fewer opportunities to hunt, process, share and consume whales; and would not adequately facilitate participation in

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	action as well as the alternatives offered and must pass rigorous standards.	whale-hunting activities by Makah residents (Braund et al. 2007)" (Section 4.10.3.5.1, Limits on Whale Hunting).
EII14	SPECIFIC LINE ITEM COMMENTS Cited by chapter/page/line(s) until chapter 4 when the use of line numbering in the DEIS ceases in my copy. At that point I will use chapter/line/any reference point handy. The Cover Page – The *Draft Environmental Impact Statement for Proposed Authorization of the Makah Whale Hunt* should indicate the major component of the request, and that is the proposed waiver of the Marine Mammal Protection Act. I believe it should reflect the proposed action as does the May 9, 2008 Federal Register announcement, in part, *We are issuing this notice to advise the public that NMFS has prepared a Draft Environmental Impact Statement (**DEIS**) in response to the **Makah** Tribe's request that NMFS waive the take moratorium of the Marine Mammal Protection Act (MMPA) to allow for treaty right hunting of eastern North Pacific (ENP) gray whales…*	In partial response to this comment, we have changed the title of the DEIS to *Draft Environmental Impact Statement on the Makah Tribe Request to Hunt Gray Whales.* As noted in the 2008 DEIS, the Tribe sent a letter following their initial request for an MMPA waiver that expanded their request to include agency action necessary under the WCA (Section 1.1.1, Summary of the Proposed Action). We announced this expansion of scope in a Federal Register Notice on February 27, 2006 (71 FR 9781, Feb. 27, 2006).
EII15	Executive Summary- Here the Makah 1855 treaty language is quoted in the same way as it is throughout the DEIS; it deletes the rest of the phrase "in common with all people." Please do not delete these words every time the DEIS wishes to make a point about the source of the Makah treaty claim to whale.	In response to this comment, we have included Article 4 of the 1855 Treaty with the Makah verbatim in the section of the new DEIS that specifically discusses the Treaty of Neah Bay (Section 1.2.2, Treaty of Neah Bay and the Federal Trust Responsibility).
EII16	In the brief summation of alternatives here and elsewhere, there is no substantiation of nutritional yield per whale and the actual needs of the four whales demanded annually by the Makah. The only direct weighing of the parts of a gray whale I could find is in Yablokov and Bogoslovskaya, date unknown, *A Review of Russian Research on the Biology and Commercial Whaling of the Gray Whale*, Chapter 20, Academic Press, ISBN# 0-12-389180-9.	The 2008 DEIS described the findings of Sepez (2001), who documented the amount of whale product yielded from the whale harvested by the Makah Tribe in 1999 (Section 3.10.3.5.1, Makah Whaling).
EII17	ES/2/22-26: "humane" should be added to the list of considerations.	The list mentioned in this comment is a list of resources that may be affected by the alternatives. Humane killing is explored in the 2008 DEIS in the context of ENP gray whales (3.4.3.5, Welfare of Individual Whales), which are one of the resources identified in the list.

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EII18	Glossary- Lose/Strike/Struck and Lost: There is an inappropriate and general mixing together of these terms and the way they are used in the DEIS for different purposes. The IWC does not always set specific struck, struck and lost quotas except (as far as I know) for the US Alaska and Russian Chukotkan bowhead aboriginal hunt. These can, as in the case of the Makah, be set up in within the cooperative agreements between the US and Makah tribe. The bilateral agreement between the US and the Russian Federation does not require them. I have not found evidence for strike limits in the Chukotka gray whale hunt, just struck and lost, so using their success rate later in the DEIS s not appropriate.	The commenter points to no specific instance in which the DEIS used these terms inappropriately. The discussion of the success rate in the Chukotka hunt is relevant to anticipating the likely success rate in a Makah gray whale hunt, in that the species hunted is the same and the hunting methods are similar.
EII19	For the Makah quota, the DEIS should examine the implications of the Makah-requested definition of struck that is far different than the domestic regulations to implement the Whaling Convention Act: 50CFR Part 230.2, Definitions, defines strike as hitting a whale with a harpoon, lance, or explosive device (FR/Vol.61/ No. 113/June 11, 1996, page 29631). The DEIS glossary cites a June 2007 Schedule to the IWCRW to define a strike as penetrating a whale with a weapon used for whaling. The Makah's intended version of "strike" and the pre-emptive concurrence by NMFS in this DEIS is*: "any blow or blows delivered to a whale by a harpoon, rifle, or other weapon which may result in death to a whale, including harpoon blows if the harpoon is embedded in the whale, and rifle shots that hit a whale." NMFS considers this definition equivalent to the WCA regulatory definition of a strike, meaning "hitting a whale with a harpoon, lance, or explosive device." A whale is considered to be struck when a harpoon is or has been embedded in a whale. This definition of 'strike' includes situations where the harpoon disengages from a whale; is retrieved to the water surface clean of skin, blubber, and other whale parts; and there is no other evidence of potentially lethal injury (such as blood in the water)*(DEIS 2/11/4-11*).* In this scenario, the Makah can puncture the	The 2008 DEIS used the term 'strike' as it was used in the 1998 gray whale management plan and as proposed by the Tribe. The definition adopted is useful for the EIS analysis because it represents a conservative measure of when a whale suffers an injury that could be fatal. We have addressed this comment in the new DEIS in two ways. First, we have clarified our interpretation of the term 'strike' (Section 2.3.2.2.4, Number of Whales Struck (Annual and 6-year). Second, we have clarified that the Tribe's request estimated the numbers of whales that would be disturbed in conjunction with a hunt, but did not propose a regulatory limit on harassment (Section 2.3.2.2.6, Whales Approached and Subjected to Unsuccessful Strike Attempts).

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	skin of as many whales as they like with harpoons and not rack up a single strike. This is entirely unacceptable and appears to, at the least, violate the WCA.	
EII20	In the rushed and blurred practice of whaling from small vessels, penetration is easily missed. Whales can easily be wounded and not always have blood and bits of flesh in telling amounts. There is a paper I can't again find that discussed the mortality to whales from wounds far smaller than the Makah/NMFS threshold. I ask that the authors find it and include it in their discussion in the next version of the DEIS. The NMFS is wrong to ignore its own domestic regulations (hit a whale), whose purpose is to "implement the Whaling Convention Act" (16 U.S.C. 916 et seq.) then skip over entirely the ICRW definition (penetrate) and embrace the Makah's self-serving, non-counting of a certain increase in mortalities by "strikes" (requiring the weapon be imbedded and likely to result in death – which is actually a take and if secured in some manner then lost, a lost whale). The DEIS and cooperative plan and the definitions of strike should follow regulations, and not unilaterally change the outcome of strikes against the ENP gray whales. If NOAA/NMFS move to again alter domestic regulations for the Makah by changing the definition of "strike," then it will need to go through that public process. Certainly the agency must not leap-frog even further in supporting the Makah version which apparently been made without process. It is this very kind of deal-making between NOAA/NMFS and the Makah where the agency has already committed to an important agreement affecting impacts – mortalities – before the public has its process that is so discouraging. The Makah requested definition of "strike" must be rejected in whole.	As noted above, if we waive the take moratorium we are required to promulgate regulations, which, among other things, would define relevant terms including 'strike.' The waiver and moratorium must be promulgated through the rigorous process of formal rulemaking. Thus the scenario suggested in this comment – the adoption of a definition without public process – is not possible.
EII21	Humane: This definition is misleading and does not convey the actual impact of whaling. That can be corrected by adding that it is highly unlikely the death of any of these whales can ever be called humane as it does not meet veterinary standards of loss of consciousness before prolonged suffering, and that whales will feel pain, emotional distress and other	The definition of 'humane' included in the 2008 DEIS is the definition Congress adopted in the MMPA.

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	unwanted impacts from the act of whaling. Numerous harpoons and gun shots will cause suffering from minutes (1999) to several hours (2007).	
EII22	Wasteful Manner: When, in 1996, I made comments on the revision to the US regulations implementing the Whaling Convention Act, I questioned the interpretation of the term "wasteful manner." I was assured that: *Comment: The term ``wasteful manner'' should include the use and waste of whale products after landing.* *Response: NMFS agrees. The term has the same meaning as the definition at Sec. 216.3: ``Wasteful manner means any taking or method of taking which is likely to result in the killing of marine mammals beyond those needed for subsistence or for the making of authentic native articles of handicrafts and clothing or which results in the waste of a substantial portion of the marine mammal and includes, without limitation, the employment of a method of taking which is not likely to assure the capture or killing of a marine mammal, or which is not immediately followed by a reasonable effort to retrieve the marine mammal.''*(Federal Register/Vol. 61, No. 13?June 11, 1996/page 29629) This understanding is not reflected in the glossary under "wasteful manner." Nor is it adequately discussed in the DEIS. Traditionally used whale parts as well as an unknown amount of meat and blubber were wasted in the 1999 whale kill as evidenced on video transferred to the DVD titled, *Butchering of Gray Whale; Neah Bay, WA; May 18, 1999*; © Erin O'Connell with permission. I am sending this DVD via mail to be included as an attachment to these comments. I, with Erin O'Connell, personally edited the raw footage. This waste and abandonment of the whale by the Makah when federal biologists and an Inuit man were left to work alone should be describe and included in the DEIS.	In response to this comment, the new DEIS glossary defines the term 'wasteful manner' using the language from NMFS regulations at 50 CFR 216.3: "[A]ny taking or method of taking which is likely to result in the killing of marine mammals beyond those needed for subsistence, subsistence uses, or for the making of authentic native articles of handicrafts and clothing, or which results in the waste of a substantial portion of the marine mammal and includes, without limitation, the employment of a method of taking which is not likely to assure the capture or killing of a marine mammal, or which is not immediately followed by a reasonable effort to retrieve the marine mammal." The comment provides no specific details as to what portions of the 2008 DEIS contain an inadequate analysis because of any particular interpretation of the term 'wasteful manner.'
EII23	Subsistence Whaling:	The glossary in the 2008 DEIS included a definition of 'aboriginal subsistence whaling.'

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	This term is not defined in the DEIS Glossary and should be included by quoting a definition from the same 1981 IWC Ad hoc Technical Working Group source as is the term "subsistence catches."	
EII24	Identified Whale: I was unaware that NMML had established a gray whale catalog and photo identification expertise. Why is Cascadia Research not mentioned? Does NMML truly have this catalog set up and by implication a qualified team to do the comparison work? Or has the DEIS simply made a mistake and withdraws this definition? If NMML plans to attempt to replicate the decades of expertise within Cascadia Research, then this should be stated and discussed in the DEIS at length.	The comment is correct that the 2008 DEIS erroneously referred to a gray whale photo identification catalog maintained by the National Marine Mammal Lab. Cascadia Research Collective maintains a photo collection and a database of sighting and identification records. The new DEIS corrects this error.
EII25	Chapter 1- 1/1/12: There is another reference here (and elsewhere) that the killing will be as humane as possible but nowhere is there recognition that the hunt remains inhumane. I found the word pain once in the entire DEIS. See my comments on the Glossary definition for "humane."	Comment noted.
EII26	1/8/25-26: for over a decade, NOAA/NMFS has been trying to minimize measurement of impacts by claiming the Makah are the only tribe with the express right to whale. While it is true the term whale is used uniquely, all treaties in this region recognize that customary hunting fishing activities are broadly inclusive. This means the Quileute, Jamestown S'Klallam and others believe they have the right to whale if they chose to exercise it. Please make sure this is understood in every place the DEIS makes the "express language' point as it otherwise misleads readers into thinking this must be, by treaty, a limited event.	The 2008 DEIS found it unlikely that other treaty tribes would seek a whaling quota if NMFS grants one to the Makah Tribe (Section 4.17.2.1.3, Increasing Aboriginal Subsistence Whaling and Harvest of Whales). In response to this and other comments, the new DEIS more clearly notes the possibility that other tribes may seek whaling quotas if the Makah Tribe is successful in this request (4.17 Regulatory Environment Governing Harvest of Marine Mammals). It also notes that before any tribe could receive a permit to hunt whales, the United States would have to request a quota on behalf of that tribe and present a needs statement to the IWC. The IWC would have to approve a catch limit in light of that request. Moreover, any regulation promulgated in response to the Makah Tribe's request would authorize whaling only by Makah Tribe members. If another tribe requested authorization to hunt whales, another formal rulemaking process would be required to authorize hunting by that tribe.

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EII27	1/14/7-8: The phrase "future decisions related to the MMPA (and WCA…)" is used without explanation. How will this DEIS aid what anticipated decisions? Please elaborate so commenters can address what the scope of the impacts will really be. Future decisions regarding the WCA are not really stated in the referred section 1.2.4.	The 2008 DEIS included a detailed explanation of the decisions made in the waiver process (Section 1.2.3.3, Section 101(a)(3)(A) – Waiver of the Take Moratorium). The 2008 DEIS also described the processes required under the WCA (Section 3.4.2.2, Whaling Convention Act). It is the decisions under these statutes to which the quoted passage refers.
EII28	1/15/5: Regarding allowable restrictions under the MMPA there is text about regulating size. I ask that rules be adopted to add no whale less than 35 feet can be hunted – and larger if needed to kill only sexually mature whales. The length at sexual maturity is different for females than males. Greater size equals greater yield means fewer whales killed. This is a mitigation measure to reduce impact and harm.	Comment noted. Researchers who conduct gray whale surveys note that it is extremely difficult to determine length of a free swimming whale (Calambokidis, pers. comm. etc.)
EII29	1/23/13-14: A copy of the bilateral agreement for gray whales between the US and the Russian Federation should be included in the DEIS.	The most recent bilateral agreement is included in the list of references in the new DEIS and is available on request.
EII30	1/25/1-2: I take issue about the statement that the US is opposed to commercial whaling at the IWC. Recent developments where the US has shown openness and even leadership to compromise on Japan's Small Type Coastal Whaling proposals, that are cultural and commercial in nature, indicates otherwise.	The U.S. position in 2008 was opposition to commercial whaling, as explained in the 2008 DEIS (Section 3.17.3.2.2, Commercial and Scientific Whaling). That continues to be the U.S. position, as explained in the new DEIS (Section 3.17.3.2.1, Commercial and Scientific Whaling).
EII31	1/25/28-31: See "wasteful manner" comments under Glossary as they apply here.	See response to previous comment regarding the definition of this term in the glossary.
EII32	1/28/22-25: The ground-breaking Maa-Nulth agreement is given just six lines. The DEIS does not detail that agreement, nor explore its applicability to the Makah as a reasonable alternative as defined by NEPA. The Maa-Nulth did not give up their right to whale, they stored it for twenty-five years. The gray whales are still part of their sustenance via the wondrous potlatch held by the Canadian federal government.	The No-action Alternative in the 2008 DEIS fully explored the impact on the human environment if the Makah Tribe does not hunt whales.
EII33	1/31/27-29: U.S. states nutritional need is a factor, not a threshold. How can waste be avoided if nutritional need is not THE factor? This problem reverts to my earlier comment that the Glossary has omitted defining "subsistence." It must and can use its cited source in the DEIS (*Reeves, R.R. 2002; The origins and character of 'aboriginal*	The United States evaluated the Makah Tribe's request in light of the definition of aboriginal subsistence whaling adopted in 1981 by the IWC's *Ad Hoc* Technical Working Group on Development of Management Principles and Guidelines for Subsistence Catches of Whales by Indigenous [Aboriginal] Peoples. The 2008 DEIS described

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	subsistence' whaling: a global review. Mammal Review 32(2): 71-106) that refers to IWC definitions of subsistence whaling. I request that a quote from this same paper be included: "In view of these factors, it is difficult to see how Makah whaling can be made to fall within any credible definition of 'subsistence'."	the IWC deliberation of this term (Section 1.2.4.1.3, IWC Aboriginal Subsistence Whaling) and the United States' rationale in submitting and defending the Makah Tribe's request (Section 1.4.1.2.2, Overview of Requests for ENP Gray Whales on Behalf of the Makah). The evaluation by the United States is described in the document referenced as "United States (1996)" in the 2008 DEIS.
EII34	Due to time constraints, I am not going to rehash the debate about what happened at the IWC since the initial Makah request was submitted to that body. There should be an update on the sad number of struck and lost bowheads that have occurred in the U.S. during the past two years. Despite poor ice conditions that continued to result in many wasted bowhead whales, an endangered species, the hunters persisted and even more whales were lost.	It is unclear how an analysis of struck and lost bowhead whales in the Alaska Native hunt would inform an analysis of the Makah Tribe's proposed hunt or the other action alternatives, as the setting of the two hunts, and the methods of hunting, are very different.
EII35	1/38/22-33: Much is missing from this narration, but it is not the best use of my remaining time.	Comment noted.
EII36	1/37/30-33: See my earlier objections under "strike" in the Glossary. This whale was wounded, but no strike was called. Wounding can happen time after time without regulatory limits under the jointly proposed Makah/NMFS definition of "strike." It must be struck down.	The incident referenced here and described in the 2008 DEIS (Section 1.4.2, Summary of Recent Makah Whaling) was witnessed by a NMFS observer. The observer's report is contained in Gosho (1999) and NMFS (1999). As described in the 2008 DEIS, the observer concluded the harpoon made contact with but did not penetrate the whale, based on several factors, which are described in the referenced section of the 2008 DEIS. Under the definition of 'strike' in the applicable management plan, the observer and NMFS concluded that the incident did not count as a strike.
EII37	1/39/11-15: This section is remarkable for what it does not say. During the entire time of the 8-plus minutes, from the time of the initial attack by the Makah, when she appeared to be feeding, to her death, this whale suffered terribly. Aside from the harpoon wounds and fear, this inexperienced whale who never knew harm or aggressive action from vessels, was shot in the head, shattering the ridge of her skull and then endured another bullet traveling through her body and into her left flipper. The DEIS is sanitized of the aesthetic review the DEIS promised in the executive summary. The DEIS will fail to weigh	The 2008 DEIS reported facts that are relevant to the death of the whale in the 1999 hunt. For example, it described whale responses to being pursued, (Section 3.4.3.5.2, Whale Response to Being Pursued), being struck with a harpoon (Section 3.4.3.5.3, Whale Response to Being Struck), and time to death after being struck (Section 3.4.5.4, Method of Killing and Time to Death). It does not dramatize the hunt or speculate about the whale's experience beyond the presentation of facts.

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	alternatives appropriately if it can't talk accurately about suffering the whales are proposed to endure under the waiver sought by the Makah and NOAA/NMFS.	
EII38	1/40/30: It is not inaccurate to state we know the tribe did not approve the hunt. The DEIS must reflect the record which consists of four signed statements including those by Makah tribal members that allege key tribal government officials did in fact know of the planned hunt, and the denials those same officials have apparently made to investigators. Just the facts.	The new DEIS describes the NMFS investigation of the illegal hunt, including allegations of tribal council endorsement (Section 1.4.2, Summary of Recent Makah Whaling – 1998 through 2014).
EII39	1/41/1-23: Why are key and relevant facts missing from this account of the illegal September 2007 whale killing? Note that three of the five convicted whale killers of 2007 were trained by the Makah tribe, represented the tribe and served on the 1999 crew that killed a whale "legally." In fact, Wayne Johnson was the Makah Whaling Commission Chair at the time. The willingness and abilities of the tribe to play their roles in a cooperative agreement are at the forefront and should be accounted for fairly and consistently if the alternatives are to be weighed honestly. To omit these facts biases the DEIS.	The 2008 DEIS analyzed the cost to the Federal government and others associated with management and law enforcement. This analysis describes the costs of monitoring whales, observing hunts, and providing law enforcement in the event protests occur (4.6.2.5 Management and Law Enforcement). In response to this and other comments, the new DEIS includes cost estimates for NMFS personnel to monitor Makah management of the hunt, as well as Federal administrative and law enforcement costs to investigate and prosecute potential infractions.
EII40	1/46/8-11: The effects of removing gray whales from local ecosystems will vary from one individual to another in proportion to their history of recurrence in the area. This subject seems under-addressed in the DEIS and should be expanded in later sections.	In response to this and similar comments, and new information, the new DEIS includes an expanded discussion of the PCFG sighting history in the Makah U&A, including the relative importance of males and females, as well as an alternative that would require hunting only males (Alternative 3), and an alternative that would have different catch limits for males and females (Alternative 5).
EII41	1/50/table 1-3: Table should include WDFW and Washington state's DNR as having review authority under the current state sensitive species status.	It is unclear what this comment means by "review authority." There is no action on the part of Washington state that is required relative to authorizing a Makah whale hunt as a result of sensitive species designation.
EII42	Chapter 2 – 2/2/17-29: It seems there should be added to this list biological opinions, the MMC, state authorities along the Pacific coast in the US,	In response to this comment, the new DEIS notes that the list of sources consulted is only a partial list (Section 2.2, Alternative Development Process). The new DEIS also includes sources we consulted beyond

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	Mexico and Canada. Amazingly, there is no evidence of input or communication from countries (Mexico and Canada) or states having vital interests in this proposed action affecting a migratory species.	those mentioned in the 2008 DEIS. Regarding consultation with other governments, the new DEIS includes IWC deliberations, decisions, and documents as sources consulted. The Government of Mexico is a member of the IWC and the Government of Canada participates in the IWC through observers.
EII43	2/2/32 through 2/3/1-31: When describing 40CFR 1502.14 (CEQ) and the guidelines for establishing alternatives, all I see are variations on killing proposals. It appears that in preparing this DEIS, NOAA/NMFS has a mandate to offer more alternatives, even those that may not be "desirable from the standpoint of the applicant." Aside from the one default "no action" option, why are there no other non-lethal alternatives, any of which can result in a negotiated outcome for all parties? It is appropriate that this DEIS revisit the current list of proposed alternatives. Revisiting my proposed alternative, the Makah will negotiate a settlement similar to the Maa-Nulth in Canada to store their whaling as the Makah say they have done in the past in exchange for land, economic sustainability (annual payments), health and "nourishment." At 2/3/11-12 there is a recitation about what reasonableness is. I ask NOAA/NMFS to follow through on those guidelines.	The 2008 DEIS discussed the alternatives mentioned in this comment in Section 2.4, Alternatives Considered but Eliminated from Detailed Analysis. These include a non-lethal hunt (Section 2.4.1) and alternative compensation to the Makah Tribe (Section 2.4.6). The new DEIS also considers these alternatives (Section 2.4, Alternatives Considered but Eliminated from Detailed Analysis). The No-action Alternative fully evaluates the effect on the human environment if the Makah Tribe does not hunt gray whales.
EII44	I have read both Sections 2.4 Alternatives Considered But Eliminated and the related 2.4.6 Alternative Compensation and am not convinced by this prejudicial, self-filtering argument and logic. It is not s serious consideration of the alternative. When NOAA/NMFS states such an alternative could be negotiated at any time, disconnected from the DEIS, it feels like someone trying to wiggle out of the obvious: the DEIS and the entire process are the perfect and most appropriate moments to consider this alternative. When included in the DEIS, the pros and cons are weighted in conjunction to those of other alternatives. Clarity is gained. The first being that the federal government has more resources and legal standing to enable this alternative. Just having this alternative listed in the EIS would give it weight and credence, a moment for the tribe to fully consider it AFTER it was thoroughly	The purpose of an EIS is to develop information for the decision-maker and the public regarding the proposed action and a range of reasonable alternatives. The 2008 DEIS identified several types of compensation, but concluded that the outcome of a negotiation with the Tribe is speculative (Section 2.4.6, Alternative Compensation). The 2008 also noted that a private party offered alternative compensation to the Tribe previously but without success. Without knowing what compensation might be offered and accepted, any analysis of this alternative would therefore be speculative. The new DEIS also emphasizes the fact that the analysis includes a No-action Alternative that fully explores the effect on the human environment if the Tribe does not hunt.

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	described and evaluated on an equal footing with the lethal alternatives. It is just this type of NOAA/NMFS bias that keeps everyone repeating the NEPA/MMPA processes. The guidelines are clear, as the DEIS iterates at 2/2/1-31 that the proposed alternatives do not have to be "desirable" to the applicant. The DEIS is saying one thing about the guidelines and then telling interested parties that it can't follow those guidelines because the applicant does not like it! I think it is safe to assume that the average US citizen – people affected by the proposed Makah action – would think it an appropriate Alternative. I believe it is incumbent NOAA/NMFS do so.	
EII45	2/10/4-33: Please see my comments in Glossary, identified whales. If NMML has a catalog and team as the DEIS states, then it should be described and available for public view now. We should be able to know who the staff is and how data and the Cascadia Research Collective expertise in interpretation will not be lost.	As described in the response above, the 2008 DEIS erroneously identified the National Marine Mammal Lab as having a photo identification catalog. The new DEIS correctly identifies Cascadia Research Collective as maintaining the photographs and database associated with the photo identification research, and notes that in the event we adopt regulations authorizing a hunt, the regulations would need to include a process for officially identifying harvested whales.
EII46	2/11/3-12: I addressed the inappropriate choice of defining the term "strike" in the glossary section of my comments. This is one of the more egregious decisions NOAA/NMFS has made because as used, it allows Makah to injure, break skin on whales with no limits but is not counted as a strike unless there is a mortal injury. As I described at length earlier, this appears to violate domestic regulations, the intent of the IWC schedule and common sense. Again, I ask NOAA/NMFS find the wound study paper related to the issues of nonlethal strikes, opportunistic diseases and mortality.	See the previous response to this comment.
EII47	2/11/21-22: The voluntary setting of numbers struck and lost is good to know (even as the whales are repeatedly wounded without triggering strikes), but how does it compare to the IWC's struck/loss algorithm (SLA)?	The IWC scientific committee has analyzed the Makah Tribe's proposed hunt to determine its effect on PCFG whales. Their analysis is more fully described in the new DEIS (e.g., Section 4.4.2.3, Change in Abundance and Viability of PCFG Whales).
EII48	2/11/30: The DEIS, relying on the Makah recollection, believes there will be 10 approaches for every throw. What did the NMFS observers document in 1999? Since this number is the basis for important	In response to this and similar comments, we re-examined and adjusted the methods we used to estimate the likely numbers of hunt days, harpoon attempts, shots fired, etc. These new methods, and the results of applying

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	computations of harassment levels and impacts, a greater effort should be made to quantify this number in addition to the Makah good-faith estimate. There should be discussion about Makah biologists and NMFS observer(s) documenting this activity.	them, are described in the current DEIS (for example, see Subsection 4.1.2, Alternative 2).
EII49	2/14/1-5: Here and elsewhere there is extensive discussion about darting and shoulder guns. The obvious conclusion is that these have been discussed between NMFS and Makah – no matter who brought it up. The DEIS should either declare this has never been discussed, or describe when and what was discussed about it including the likelihood these weapons will be used as it can influence several subject areas within the DEIS. The DEIS in this area (and others) fails to consider benefits of moving the whale hunt much further offshore nearly eliminating impacts of killing PCFA/ORSVI whales.	The Tribe proposed to use a rifle (Makah 2007). We included the darting gun as a reasonable option because it is used in other aboriginal subsistence hunts and was recommended by some members of the IWC when the United States first requested a quota for the Makah Tribe (IWC 2006). In response to this and other comments, the new DEIS includes an alternative that would require the Makah Tribe to hunt whales no closer than 5 miles from shore (Alternative 3).
EII50	2/17/18-29: Given the September 2007 illegal hunt, it is clear that enforcement and prosecution is not possible or meaningful under Makah authority. Please discuss Judge Arnold's opinion that WCA does not apply to the violations committed by the Makah 5 during the illegal killing. Discuss the ability of Makah tribal government in this regard.	Comment noted.
EII51	2/23/16-18: This is an incomplete statement about the distribution of identified whales. Please be more specific on frequencies of occurrence as one moves westward from shore.	In response to this and other comments, the new DEIS includes the alternative of an offshore hunt, which explores available information regarding the distribution of gray whales generally and PCFG whales in particular (Alternative 3).
EII52	2/24/30-32: This is another place where the term wasteful manner is defined inadequately. See my previous comments.	See response to previous comment regarding the definition of this term in the glossary.
EII53	2/26/1-16: This alternative, again, is written weakly and dismissively. It should be revisited and developed as a serious alternative. I can't help but notice the biased attitude here.	Regarding alternative compensation to the Makah Tribe, see the response to comment above.
EII54	2/28/table 2.2: In the benthic category, nothing about feeding pits, how their edges are dynamic and spur recolonization and productivity; roles of gray whales in their various ecosystems with high versus low site fidelity are not compared.	Table 2-2 in the 2008 DEIS included a brief summary of the major effects of each alternative on various resources, including benthic habitat and communities. The full analysis considered the potential effect on the benthic environment if a hunt were to remove PCFG

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		whales from the Makah U&A. For example, Section 3.4.3.1.3 (Feeding Ecology and Role in the Ecosystem) described the role of the gray whales' benthic feeding in structuring benthic communities. Section 4.3.3.2.2 (Benthic Environment) examined the indirect effect on the benthic environment of removing feeding whales and concluded the effect would be minor considering the dynamic nature of the environment and the role played by large-scale environmental factors.
EII55	3/15/22-23: This says the tribe proposes to adopt regulations to enforce NMFS regulations. Please give a few examples as a way to explain anticipated regulations.	The Makah Tribe recently adopted regulations to govern a gray whale hunt. They are describe in the new DEIS.
EII56	3/21/23-33: There are several important statements here that I need to understand more fully. Please comment on the following: *The Makah fisheries management staff are responsible for the management of marine mammals, important biological and cultural resources within the Makah U&A.* Does this statement mean the Makah Tribal government has been given full authority to lead management of the species of their concern in their U&A? If so, when was this done and under what authority and process? I have not seen published research results with a Makah tribal origin. Are they required to apply for research permits under the MMPA? Does part of this authority include their being the primary or sole parties for collecting photo identification of PCFA/ORSVI whales in the Makah U&A? Is this also true for the biopsy programs? It is not a secret that the Makah have their eyes on humpback whales, so I ask the same questions as above for this species as well. What other species of marine mammals are the Makah responsible for? How do my questions apply to those species? How does this status of responsibility affect other scientific permits and on-going research by scientists operating in whole or part within the Makah U&A?	There are many activities that might be considered "management." The Makah Tribe has had a marine mammal biologist on staff for many years, and has participated in the photo identification project led by Cascadia Research Collective and conducted research under Cascadia's research permit (e.g., Calambokidis et al. 2014). The Tribe has also participated in pinniped surveys under research permits issued to NMML. The Tribe has also adopted an ordinance governing interactions between fisheries and marine mammals. These are some examples of Makah tribal management of marine mammals.
EII57	3/25/28-30: *Ecology has not listed the Pacific Ocean, the Strait of Juan de Fuca, Neah Bay, or any of the rivers and streams within the project area as impaired for water or sediment quality parameters.* My question to that statement is has the state adequately tested these	In response to this and other comments, and in light of new information, the new DEIS includes a more detailed discussion of ocean acidification as a factor affecting gray whales (Subsection 3.4.3.6.11, Climate Change and Ocean Acidification).

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	waters on a regular basis? When was their last testing period? How far offshore do they go? How deep? Are there other agencies (NOAA) who can complete the picture of marine habitat health – or lack of it? Why do newspaper accounts tell of acidification of benthic ocean waters off of our coast while the DEIS infers that all is well with water quality in the "project area?" Are gray whale prey affected by marine acidification which reduces the ability of some species to utilize calcium carbonate to build shells and other biological structures?	
EII58	3/28/14-19: Please include the fact that some of these harmful algal blooms produce bio-toxins that are proven threats to gray whales but not yet stated in the DEIS. These blooms are mentioned as occurring in the area but there is no comment about its deadly significance.	The referenced section of the 2008 DEIS described the status of water quality. A different section discussed the status of gray whales, including potential effects of algal blooms (Section 3.4.3.6.3, Harmful Algal Blooms).
EII59	3/45/21: Kelp beds found between 6 and 200 foot bottom depths seems inconsistent with other claims (less than 100 foot depth waters); see 3/47/8-9. Please fact check or explain. Also, a good map of Washington state's kelp beds is reportedly available fromWA DNR and would be helpful in defining ORSVI foraging habitat. In fact, it is important to see habitat maps, prey maps covering all of gray whale habitat.	The photo identification database includes an extensive record of areas where gray whales are observed foraging in the Makah Tribe's U&A and elsewhere. Gray whales forage in areas where kelp beds are and are not present. It is unlikely that mapping kelp beds would augment available information about PCFG foraging areas in the Makah U&A.
EII60	3/48/3-31: describes benthic infauna tube worms and other prey of gray whales. As a continuation of the previous comment, a set of maps detailing the locations of prey species and marine substrates with potential to be supportive of these species will help readers see the habitat potential for PCFA/ORSVI gray whale foraging.	We are unaware of any maps that identify the availability of benthic prey in the range of PCFG whales. Many benthic feeding areas are ephemeral and affected by large-scale environmental factors (Section 3.3.3.2.1, Physical Features and Processes).
EII61	3/52/25-31: Please comment on the 60% of K approach and why it is the latest perspective even though developed in 1980. It will be helpful to further explain the implications of using non-K and non-MNPL statistical analysis. I am concerned for a few reasons here. I can't tell if the usefulness and accuracy of K becomes less reliable when K declines quickly, especially in rapidly changing, unstable ecosystems. Is K then still valuable when it is part of other calculations? Please attempt to clarify this section.	In response to this comment, the new DEIS discusses in more detail the rationale for NMFS' continued use of 60% of K as the default value for MNPL (3.4.2.1.2 Calculating Marine Mammal Population Parameters). The new DEIS also discusses the analysis of Punt and Wade (2012), which was completed after the 2008 DEIS was released, and which uses statistical analysis to conclude that the ENP gray whale population is within its OPS range (3.4.3.1.3 Population Exploitation, Protection, and Status). As explained in the new DEIS, Punt and Wade's analysis derived

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		a point estimate that the ENP gray whale stock is at 85% of its carrying capacity. It is unclear what the commenter means by "non-K and non-MNPL statistical analysis."
EII62	The second concern I have, and this problem pops up later in the DEIS as well, is that K, the carrying capacity, can be seen from two opposite perspectives. Many researchers believe K is declining for the gray whale at present, so the DEIS and others are saying, "We've reached carrying capacity. Everything is fine with gray whales. Die-offs are just a result of exceeding carrying capacity. The opposite way to look at a declining K is not to declare a healthy stabilization, but to see declining K as an environmental problem and a threat to the long-term survival of gray whales that must be addressed quickly and proactively. I believe this DEIS is taking the former path when instead it should act with precaution, not abandon its duties and address the threat of a declining gray whale K. List it as a threat and be more cautious with this last population.	The carrying capacity of the ENP gray whale's environment does not appear to be declining currently and this comment fails to cite information that the 2008 DEIS did not consider. There have been increases and decreases in gray whale abundance, suggesting a fluctuating carrying capacity (Moore 2003), but overall the abundance trend is generally stable (Moore et al., 2013). The current DEIS describes the updated information on ENP abundance and trends (Subsection 3.4.3.1.3, Population Exploitation, Protection and Status).
EII63	3/53/footnote: ENP is at or above MSY. How does this square with *Alter, Rynes and Pulambi, 2006, DNA evidence for historic population size and past ecosystem impacts of gray whales* that suggests there was a much larger original gray whale population than current estimates? It is barely mentioned and then dismissed for the rest of the DEIS? Please include and discuss at length.	In response to this and other comments, the new DEIS includes an expanded discussion of K and explains that NNMFS considers carrying capacity to be current carrying capacity and not historical carrying capacity (Subsection 3.4.2.1.1, Defining Marine Mammal Population Parameters).
EII64	3/54/3-16: PBR is defined here but PBR seems weakened to me if it is in the context of OSP that may drop rapidly with declining K. Further in the DEIS it is stated that since PBR is calculated as a percentage, when the number of identified whales increases, so will the allowable by-catch levels. We stand to lose our "resident" gray whales with the highest recurring fidelity to the PCFA/ORSVI sectors because they are exposed to a much higher level of hunting effort. I can't discern how this risk to these particular whales is identified in the algorithms and mitigated in the alternatives provided.	A declining carrying capacity would presumably result in a lower abundance and thus a lower allowable mortality limit for PCFG whales. It's unclear how a declining carrying capacity would lead to increased harvest rates.

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EII65	Please explain further the relationships between ABL, PBR and the K. It seems like all the relationships to these models are weak in rapidly changing and unstable arctic and sub-arctic ecosystems. If I'm right, and the argument must be made, then the discussion must be greatly expanded here.	The 2008 DEIS included a full explanation of marine mammal population parameters, including PBR and K, particularly in the context of the MMPA (Section 3.4.2.1, Marine Mammal Protection Act Management). It also explained the Tribe's proposal for an allowable bycatch limit (ABL) (Section 2.3.2.2, Gray Whale Hunt Details). The 2008 DEIS also analyzed the impact of the Makah Tribe killing up to 7 ENP gray whales per year on the ENP gray whale population (e.g., Section 4.4.3.2.1 Change in Abundance and Viability of ENP Gray Whales).
EII66	How often is the recovery factor reviewed? Calf counts are still well below their peak in the 1980s. What happens to all of these factors if net recruitment falls again for more a year or longer? For increased yearling and adult mortalities approaching what we saw in 1999/2000?	The recovery factor in the PBR calculation is reviewed every time a new stock assessment report is produced. In the case of ENP gray whales, we completed numerous stock assessment reports over several years, which all concluded that a recovery factor of 1.0 was appropriate. As described in the new DEIS (Section 3.4, Gray Whales), we completed a stock assessment report for ENP gray whales in 2012 (Carretta et al. 2014), which also calculated a PBR for the PCFG, using a recovery factor of 0.5. Carretta et al. (2014) explain why that recovery factor was chosen.
EII67	3/55/19-22: The DEIS states here that take permits will not be detrimental to "stocks." Much of the research in the DEIS agrees that finding genetic evidence for ENP gray whale substructuring has been difficult, especially when baleen is tested: gray whales move around at lot and reflect that in testing. It seems the DEIS concludes that there is no genetic profile that can identify substructuring placement of the PCFA/ORSVI whales. However, at least one paper appears to counter that DEIS assertion: Goerlitz, D.S. et all, 2003; Mitochondrial DNA variation among Eastern North Pacific gray whales on winter breeding grounds in Baja California. From the abstract: *These data suggest that all animals exhibit some level of site fidelity to their natal lagoons as adults, and that the ENP gray whale population may be substructured on the population's wintering grounds.*	In response to this and other comments, we conducted additional research into gray whale stock structure. We convened a Task Force of experts within NOAA Fisheries to consider the information developed from that research and the research of other scientists, to determine whether there was sufficient information to suggest the PCFG is a separate stock. The research and the results of the Task Force deliberations (Weller et al. 2013) are reported in the new DEIS (Section 3.4, Gray Whales).

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EII68	This begs the question about testing PCFA/ORSVI for wintering site fidelity to see if any correlations emerge. It is too early to write off these populations now defined by behavior as not having discoverable unique DNA and isotope signatures. Statements in the DEIS about these southern range coastal feeding whales being a relatively unimportant percentage of the larger population is premature, especially in their "protection" from the 1999/2000 die-off. They may be the most secure and stable portion of the entire at-risk population. Removing even a few of them may be reducing this possible reservoir of species survival. Harassment arising from several hundred hunt approaches over five years is just as bad, perhaps worse in its ability to remove them from this ORSVI sector. Therefore, take permits may reasonably be expected to be detrimental to the "stock." Please address this paper and continue the literature search to discuss this issue in greater depth.	See response to previous comment.
EII69	3/56/23-32: Wasteful manner provision again; leaves out part essential aspects of what wasteful manner means in 216.3 in the MMPA and opined by NMFS in the FR in 1996.	See previous response.
EII70	3/59/1-9 and connected to 3/61/1-9: This is the heart of my long-winded questioning for the past few pages. I see that the Alter paper is cited here, but not in the DEIS list of references. The Alter paper is not discussed at length nor are papers listed in Alter. This is vital stuff, but once again the DEIS seems content to accept a reduced K and therefore lower numbers of gray whales instead of declaring reduced K as a threat to gray whales that must be met with a plan and relisted to threatened or endangered status under ESA, depending upon trends in habitat and prey availability. Declining K should NOT be the new, acceptable norm. If part (to much) of the lack of full recovery is due to anthropogenic causes, then relisting becomes all the more imperative as anthropogenic inputs are increasing daily.	The Alter et al. (2007) paper was discussed in the 2008 DEIS but mistakenly omitted from the list of references. The new DEIS discusses additional papers by Dr. Alter published since the 2007 paper, and includes them in the list of references. As described above, the new DEIS also includes an expanded discussion of K. We reviewed the status of gray whales in 2001 and concluded that listing under the ESA was not warranted (Subsection 3.4.3.1.3, Population Exploitation, Protection and Status).
EII71	3/61/6-7: The EIS cannot wait for the next stock assessment report to discuss Alter, etc. in detail. The ENP gray whales population and	As described above, the new DEIS discusses Alter et al. (2007) and papers published by Dr. Alter since 2007.

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	recovery status are central to the Makah proposal and choosing of alternatives.	
EII72	3/61/10 on to 3/62/1-32: I ask that this section be written and clarified with time and place foraging, and the targeted prey inside and outside the "project area.." There's very little written about the roles gray whale feeding strategies have in their respective ecosystems. Nor is there much about energetics and costs of foraging under receding ice conditions versus PCFA/ORSVI foraging strategies - the energy saved and the like. Not all prey provide the same nutrient load. There needs to be discussion about how prey species compete with one another, how prey species dominance ebbs and flows in response to environmental changes and predation pressures, things that affect nutrient availability for gray whales. Please consider including these publications about prey that I will cite in short-hand due to time constraints: Coyle, K.O. and Highsmith, R.C, 1994; Benthic amphipod community in the northern Bering Sea: analysis of potential structuring mechanisms; Aydin and Meuter, 2007; The Bering Sea- A dynamic food web (oriented to fish, it has some things to say about gray whale foraging habitat); Nelson and Johnson, date?; Whales and Walruses as tillers of the sea floor; Oliver, Slattery Silberstein and O'Connor, 1982; A Comparison of Gray Whale Feeding in the Bering Sea and Baja California; Feder, H.M. et al, 1994; The northeast Chuckchi Sea: benthos-environmental interactions;	We reviewed the cited literature and included information from these papers where it is relevant to gray whales and informs the DEIS analysis.

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	Nelson, T.A. at al, 2008; Spatial-temporal patterns in intra-annual gray whale foraging: Characterizing interactions between predators and prey in Clayquot Sound, BC, CA; Coyle, K.O. at al, 2007; Amphipod prey of gray whales in the northern Bering Sea: Comparison of biomass and distribution between the 1980s and 2002-2003;	
EII73	3/65/1-12: Since 1980 calves are being born in increasing numbers prior to reaching calving lagoons in colder, unsheltered waters since. I have not found yet any discussion about possible increases to mortality. Please discuss this possibility.	The 2008 DEIS discussed this fact and the possibility of increased mortality as a result. The new DEIS includes updated information on calf production and survival (Subsection 3.4.3.1.5, Reproduction and Calf Production).
EII74	3/66/10-17: was surprised to read no direct observations on N and S migrations off of WA coast. See new Calambokidas, 2008 paper reporting 2006 data.	The new DEIS includes a new alternative that would require the Tribe to hunt offshore at least 5 miles. Available information about offshore distribution of gray whales is discussed in Subsection 3.4.3.3.2 ENP Seasonal Distribution, Migration, and Movements, and analyzed in Section 4.4.3.3, Alternative 3.
EII75	3/66/25-32 AND 3/67/ AND 3/68/ - ALL: There are several similar yet different study findings regarding the distance to shore for the gray whale migration corridors. Probably some variability. The draft environmental assessment, 2001, used Green et al, 2005 for northbound migrants at a distance of 11.8 kilometers. The DEIS should discuss the best distance from shore to have the greatest chance of not intercepting PCFA/ORSVI whales as a percentage of likelihood. NOAA/NMFS has failed to advocate for a greater distance offshore to lessen the concerns of myself and others. Migrants are well offshore. If the Makah want to hunt, that is where it should be to avoid as much as possible killing PCFS/ORSVI whales. If feels like this need is being ignored to placate the Makah without it being fully discussed in the DEIS.	In response to this and other comments, the new DEIS includes a new alternative that would require the Tribe to hunt offshore at least 5 miles (Subsection 2.3.3, Alternative 3 (Offshore Hunt)).
EII76	3/70/20-21: Rugh carry cap estimated at 23,686. K and these estimates should be challenged as long as anthropogenic aspects are causes for the decline.	The new DEIS describes the findings of NMFS stock assessment reports on ENP gray whales produced since the 2008 DEIS was released. These reports include estimates of abundance. It is unclear what this comment means by the 1.59% reference.

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	More population ruminations. As I recall, the 1.59% estimate of pop increase is lower than in the previous few years. Is this explained?	
EII77	3/107/table 3-8: note that data used is PRELIMINARY from 2002-5.	Comment noted. The new DEIS includes a table with updated calf counts (Table 3-2). Data that are preliminary are noted as such.
EII78	3/109/10-18: This is more excuse-making about how we should accept population fluctuations because we are inescapably close to K. Large scale changes and alteration to the climate are therefore excused from the table as being a threat. A large decrease in GWs is just K acting up, no need to be alarmed by climate and ecosystem collapses… this is inexcusable.	Nature is variable and the abundance of natural populations will fluctuate as the environment fluctuates. In response to this and other comments, the new DEIS has added climate change and ocean acidification to the list of threats to gray whales (Subsection 3.4.3.6.11, Climate Change and Ocean Acidification).
EII79	3/111/8- : Another place to state this is not humane killing. The DEIS criteria include aesthetics so we need ethical statements of fact. Aesthetics is not about covering up a painful and disturbing reality by refusing to describe it like it is an the DEIS.	The line cited in this comment is in the section discussing the welfare of individual whales and is a quotation from the IWC definition of 'humane killing.' The 2008 DEIS thoroughly explored aesthetic impacts on viewers at the scene and in the media (Section 4.12, Aesthetics).
EII80	3/111/29-32: waste again, no mention of 1996 FR meaning, not 50CFR 216.3. Over the years, the U.S. has refused to propose allocations of whales based on documented need and applied that to yield per whale. Not doing this will result in waste.	See responses to comments above on this subject.
EII81	3/114/6-12: see also 3/129/9-15. These definitions and proposals for criteria to use are unacceptable and needlessly impacting. Here and in other areas, there is a need to challenge the ideas that no data exist to describe gray whales being harassed/chased. I can't see how the DEIS can infer this. Several opportunities here to include pain, pain response…	As noted above, the 2008 DEIS relied on factual information to judge the humaneness of the proposed hunt and alternatives rather than subjective or immeasurable criteria.
EII82	3/120/15-22: here and as a general theme in the DEIS, it is said gray whales are adaptable and tolerant of noise and other disturbances. Yet, not mentioned is the context of the life and death need to travel and eat or starve and the urgency of mating and giving birth during exposures to noise. Even though appearing tolerant, the DEIS does not care to discuss tipping points of their ability to tolerate, nor the impacts of noise on prey. Appearances of tolerances is not the same	The commenter does not cite to any information, nor are we aware of any, regarding the relationship between noise and gray whale prey. The commenter also points to no information regarding the level of harassment that might cause gray whales to vacate an area.

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	thing as no costs to gray whales from disturbances. Effects can be subtle yet accumulate to meaningful impacts.	
EII83	3/121/1-4: If, as the Makah steadfastly claim, their whaling has been stored, yet kept alive, why then has not a single Makah come forward to state when the last whale hunt took place, who were involved and what are their associated recollections? Why is the tribe apparently unable to describe the last whale kill and only refer to sometime in the 1920's? It either meant much over the 70 year hiatus or it did not.	There are several indicators of the continued importance of whaling to the Makah Tribe, as described in the 2008 DEIS (3.10.3.5, Contemporary Makah Society).
EII84	3/129/9-13: statements about whale watch effects contradict earlier statements @ 3/114/16-23 and 3/130/14 and 3/130/21-33 and 3/131/1-3.	We have carefully reviewed all of the cited passages and can find no inconsistency among them. These passaged generally describe the scientific studies of gray whale reactions to whale watching vessels.
EII85	3/129/32: there are no meaningful minimum approach distances in many of the Mexican whale watch programs especially in friendly whale lagoons. This means many or more gray whales will be habituated to close approach vessels to one extent or another.	Comment noted.
EII86	3/131/1-3: my notes say, if there's no effect, then why rules? Vessels causing serial behavior changes add to caloric and behavioral interference.	NMFS has adopted rules prohibiting vessels from approaching within a certain distance of whales in some circumstances (see the discussion in the Federal Register Notice regarding Southern Resident killer whales for a review of such regulations, 76 FR 20873, April 14, 2011). These rules have been promulgated in circumstances where populations are small and whale watching is intense, and where there is a risk of collision. Although it's not possible to quantify the effect of whale watching, there are circumstances where it is appropriate to control the risks posed by whale watching.
EII87	3/139/chart table: add state sensitive.	In response to this comment, the new DEIS includes "sensitive species" in the line regarding state regulations (Table 3-16).
EII88	3/165/ onward… In general, description of Makah unemployment and similar issues: these numbers are deceptive. They include under 18 and over 65 year-olds in the work force; roughly, it appears that Neah Bay needs about 622 decent jobs for enrolled, voting tribal members to be at full employment. Much of the employment is seasonal and may be at higher than annual hourly rates. No attempts to disclose total tribal	Comment noted.

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	government income, grants, value of free medical care the cheapness of rent, the expense of food and other cost considerations. DEIS fails to provide the data for any profile. Census data is from 2000. A quick review from the census website does not seem to correlate to figures given. I can say that between 1999, when I left Neah Bay, to when I returned in 2008, I subjectively feel there has been a gross decline in the physical structures and overall presentation in Neah Bay proper. The tribal government appears to have unwisely committed time and resources to whaling, to their detriment.	
EII89	3/207/1-2: This chart does not demonstrate on-reservation job statistics. It is for Native Americans in the county overall.	Comment noted.
EII90	3/208/10-15: 250 seasonal fishing jobs, added to other reported jobs in Neah Bay lead me to believe there is not much transparency in the data coming out of Neah Bay.	Comment noted.
EII91	3/296/25 onward: I'm going to lump most of the Makah dietary issues and gray whale contamination in one area for the sake of time. See the general issues section at the beginning of my comments.	
EII92	Chapter 4- Summary of Alternatives 1-6: The number of gray whales targeted for harm appears to be based on arbitrary factors. This is not supported by cultural, nutritional or yield per whale data. Alternatives presented in the DEIS ensure that the only choices provided will lead to greater and lesser degrees of whaling. This bias forces the public to choose the least of the worst of lethal alternatives, and in one case, to force the public to accept trading a kill of identified residents for migrants.	One of the purposes of an EIS is to develop information for the public and decision-maker. The 2008 DEIS included alternatives intended to illuminate issues, such as hunt area and timing, as well as numbers of whales killed.
EII93	**Line numbers are missing from my DEIS copy from here on**. Ch.4/pg.8/: my notes say pod size used is smaller than used for migrants.	The 2008 DEIS relied on information about pod size to both migrating whales and PCFG whales. The new DEIS relies on information about pod size from Laake et al. (2009) and applies it to PCFG whales (Section 4.1, Introduction).
EII94	4/23/: The DEIS has not cited any literature in this section despite many inferred conclusions.	Section 3 of the DEIS provides information on the affected environment for each resource, with citations. Section 4 of the DEIS analyzes the

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		effect of each alternative on each resource, relying on the information presented in Section 3. For this reason, Section 4 contains very few references to the literature, and instead refers back to Section 3, which cites the literature.
EII95	4/24 – 4.3.3 : This statement claims taking a few to all whales from U& A project area won't make much difference to benthic community. Given thousands of feeding pits in WA, this appears to be a hasty conclusion. The narrative that delivers the DEIS to that decision is highly speculative and lacks much quantitative evidence.	The cited paragraph is an overview of the more detailed analysis contained in pages 4-24 through 4-30. The comment identifies no specific information that was not considered in that analysis.
EII96	4/32/: The DEIS claim of not much impact from gray whale removals rests upon IWC determination that 124 whales killed won't matter – according to the DEIS. I don't believe the IWC has an adequate and specific focus that supports that view given the science presented is, I believe, largely from the U.S. delegation that is there for the purposes of convincing the IWC scientific committee to get the Makah a quota. There is more information in the DEIS and the parties interested in this proposed action than was considered at the IWC during quota deliberations.	The 2008 DEIS relied on several sources of information to reach conclusions about impacts, not just the conclusions of the IWC. The comment identifies no specific information that was not considered in the DEIS analysis.
EII97	4/33/: The bottom of this page asserts that coastal gray whales are interchangeable with those in the Strait and Makah U&A. Writers still don't appreciate that close-shore feeders are not migrants. So, impacts should be weighted with location and behavior of the whale when attacked.	The indirect effect on the benthic environment of killing gray whales under the Tribe's proposal is discussed at the top of page 4-27 of the 2008 DEIS. The analysis concludes that the removal of whales "would probably not appreciably change background levels of benthic disturbance or the quantity of benthic prey consumed." It further notes that whale foraging appears to play an insignificant role in structuring benthic communities, which are most strongly affected by the physical features and large-scale environmental processes. The comment presents no contrary information we should have considered.
EII98	4/37/: The open-ended possible increase in allowable by-catch is not acceptable because it would remove the whales with the highest site fidelity first due to their increased hunt exposure in the Makah U&A areas.	The purpose of the EIS is to develop information for the decision-maker and the public. The NEPA document itself does not reach conclusions about whether certain alternatives are acceptable according to various criteria.

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EII99	4/39/ 3rd para: This seems to be overly generalized and dismissive as if there is not a point at which we could create harassment with noise. Thee are no boundaries indicated.	Comment addressed elsewhere.
EII100	4/40/ : There is no data, just a supposition based on non-measurements. Gray whales have a compelling reason to feed there as the stakes are high. Same with 4/43/.	The analysis in the cited section describes the lack of information on effects of disturbance, and notes that a Makah hunt could disturb whales sufficiently to cause them to abandon the area and that the potential for that to occur would likely depend on the intensity of the disturbance. This comment presents no specific information on the subject that the DEIS failed to consider.
EII101	4/49/: The use of terminology in the DEIS diminishes the sense of place, a place people would care about. People are not be aroused by "Project Area" but the DEIS constantly uses the phrase Project Area to describe a magnificent national marine sanctuary, the Olympic National Park and a national wildlife refuge. The DEIS should seek to use the descriptive terms given to these areas. Otherwise use of language can alter the public's perceptions of the environment in which this killing is to take place.	The term "project area" is commonly used in NEPA practice to describe the affected area.
EII102	4/50/: Would not what is described here require an action by the U.S. government to alter the bilateral agreement with the Russian Federation? If so, the paragraphs there are not true.	The page cited in the comment refers to the discussion in Section 4.1, Introduction, which explained the expectation that the Chukotka Natives would take any gray whales from the IWC quota that are not taken by the Makah. As described in the new DEIS, this is what has in fact happened during the quota periods that the Makah have not hunted.
EII103	4/52/: The important statement here is that 7 whales killed is more than U&A recruitment rate (also means more than marine sanctuary recruitment).	Comment noted.
EII104	4/195/4.16.2.2: I have responded to this sad state of affairs earlier in my comments. NOAA/NMFS and presumably the BIA have known about the contamination of the 1999 gray whale that year. While these agencies moved the whaling proposal forward, they did nothing to mitigate the issues identified on this page. The summary of his paragraph must be included with each lethal Alternative proposed. The contaminants and their effects on human health should be	The current DEIS expands the discussion of contaminants in gray whales (Section 3.16.3.2, Environmental Contaminants in Gray Whales).

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	summarized here. Whaling must not be allowed to proceed without addressing these issues. The DEIS process must stop until human health and informed choices can be reasonably explored in this document.	
EII105	The Anne Renker Paper I will briefly summarize why this paper distorts the DEIS to unacceptable levels. The DEIS depends upon this paper almost entirely to create the alternatives bases(number of whales). It would be one thing if it was simply a needs statement, but the DEIS has adopted and utilized the conclusions of this paper throughout. For that reason, that heavy reliance, NOAA/NMFS must objectively peer review the methods, data and conclusions drawn. There are red flags that are compelling:	For the 2008 DEIS, NMFS contracted with an independent cultural anthropologist, Dr. Braund, to travel to Neah Bay and provide a report (Braund 2007). We continue to rely on Dr. Braund's work in the new DEIS. In response to this and other comments, the new DEIS provides more detail on the background and context of Dr. Renker's Household Whaling Surveys (Section 3.10.3.5.1, Makah Whaling).
EII106	1. This does not appear to be an arms-length survey and paper. Two surveys were done for Renker. Both used the same "turkey draw" system to establish a random sample. Yet, in the first survey, only 159 households out of 217 contacted agreed to be surveyed (27%). In a small, socially dynamic village, there were likely common themes running through the decliners. These were never explained but it is reasonable to assume it was because of family animosity or opposition to whaling which would not be openly stated. The second survey used the same sampling technique but nearly all agreed to be interviewed. Why the change? I have briefly read comments by others who have more detailed information. They concluded that the selection could not have been random given an impossible percentage of those contacted being officially involved in the taking of the 1999 whale.	Comments noted.
EII107	2. The survey forms do not appear to very confidential since generations of family members can easily identified by other household members at the time of the interview visit.	
EII108	3. Renker 2002 infers there are not enough fish for nutritional health but does not produce the data except that which	

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	counters her assertions – that 55% of the Makah diet is typically fish. There are enough essential fatty acids and protein is such a diet.	
EII109	4. Small-community members are going to shout for the team predictably. No matter the professional skills of the interviewers or the author, Renker, the results have a high likelihood of being non-representative of personal feelings.	
EII110	Certainly there are people in Neah Bay who strongly support the concept of going whaling. But because of the social structure there, it will take more than a semi-public survey conducted between tribal families to find a measure of truth.	
EII111	The DEIS must make the majority of its needs case by mixing in other sources of information. An anonymous website with security codes would have been more fruitful.	The purpose of a DEIS is not to make a case, but to develop information for the decision-maker and the public.
EII112	<u>Regarding the Denial of Additional Time for Public Comment Period</u> After being granted an extension of the comment period for a cumulative 98 days, I and others requested an additional period of 30 days. In an undated August letter from Donna Darm (sent by separate mail), NOAA/NMFS rejected my request, submitted jointly with others including the Animal Welfare Institute. There were no material reasons given other than the opinion that 98 days is sufficient time for similar DEIS documents of similar size and scope. While I cannot say whether all other DEIS documents are more, or less, equal to this one, I do know that each one is unique – as is the level of interest, the degree of public evaluation, the completeness and incompleteness of the document and the profiles of the responding public. I know of no harm to any party that would have resulted from granting our request for an extension. For my part, I am not able to completely evaluate and respond to this DEIS for lack of time. I have a lot of material that I need to still read so will make supplemental comments. Barring a stated harm presented	NOAA's regulations regarding NEPA require that the agency provide a 45-day comment period on all EISs (NOAA Administrative Order 216-6). In this case, we provided 98 days to review the draft – an initial 60-day period and a 38-day extension. In response to request for comments on the draft, we received more than 800 pages of comments from over 400 commenters, suggesting that the 98-day comment period allowed commenters sufficient time to read and comment on the draft. This 98-day comment period is consistent with, or longer than, other comment periods for complex draft EISs prepared by NMFS. For example, for its 1,000 plus page draft EIS on Washington States' forest practices, we provided a 90-day comment period. The nearly 1,200 page draft EIS on the Puget Sound Chinook harvest management plan had a 46-day comment period. Consequently, we believe that given the amount of comment review time offered to the public, and the substantial number of comments received during this period, that NMFS provided adequate time to review and comment on this DEIS.

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	NOAA/NMFS, I believe the intent of Congress in enacting NEPA has been defeated unnecessarily. I request that, as part of its response to the public comments that are submitted here, NOAA/NMFS describe its material reasons for denying the joint request that out-weigh NEPA considerations. Included in that response, NMFS should state the content of communications within and between governments, including that of the Makah. Did the Makah have veto power over my/our request?	
EII113	Conclusions I have detailed how NOAA/NMFS has by broad omission of information and issues, and in making key, unsupportable conclusions on the data it does provide, that this DEIS is still insufficient for supporting any Alternative. As I generally describe in the Summary of my specific comments, there is insufficient information to protect the Makah (harm from additional dietary toxic burdens) and the feeding summer resident PCFA/ORSVI whales. The "missing" portions of the current DEIS are so substantial that they will likely change the weight and meaning of those existing portions currently deemed sufficient. For those reasons, and those based on my comments in this letter, NMFS must correct these deficiencies, and those that others identify, by writing a Supplemental DEIS (SDEIS). Regarding my choice of Alternatives, the one that I would choose is not one of the six provided, though I had brought it up in the Seattle scoping meeting. In written comments I made on scoping dated October 24, 2005, I suggested that the treaty could be renegotiated and include restoration of the Makah land base. My current alternative of choice that should be offered in the EIS would be the US and Makah negotiating an agreement similar to that between the Maa-Nulth First Nations (cultural cousins to the Makah) and the Canadian government. In exchange for "storing" their whaling practices, the Makah would enjoy cultural and material sustenance with the return of lands usurped by European settlers and annual payments that could address	Comment noted. The 2008 DEIS included the alternative of compensation to the Makah Tribe in exchange for agreeing not to whale (Subsection 2.4.6, Alternative Compensation to the Tribe), in response to the cited scoping comment and similar comments by others during scoping. The new DEIS also includes this alternative (Subsection 2.4.7, Alternative Compensation to the Makah Tribe).

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	most social and economic needs. Even if the current tribal government has stated they have no interest in this Alternative (and if they have, it should be disclosed in the SDEIS), it should be included because the interests of the MMPA and NEPA go beyond the party proposing the action that requires an EIS. Signed, Will Anderson 2122 8th Avenue N, #201 Seattle, WA 98109 206.715.6414 friendsofthegraywhale@comcast.net Earth Island Institute International Marine Mammal Project 300 Broadway, Suite 28 San Francisco, CA 94133-3312 415.788.3666 www.earthisland.org	

Humane Society of U.S. – Comments submitted August 15, 2008 by N. Rose.

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HSUS1	On behalf of The Humane Society of the United States (HSUS) and its more than 10.5 million members and constituents, I am submitting comments on the draft Environmental Impact Statement (DEIS) for the proposed authorization of the Makah whale hunt (*73 FR 26375*). For the record, we would like to state that the timing of this comment period made a thorough review of the document difficult for many stakeholders, as it wholly overlapped with the lead-up to and duration of the annual meeting of the International Whaling Commission (IWC). Our review of the DEIS is consequently less detailed than we would have liked, and we reserve the right to revisit its content during future stages of the on-going regulatory and waiver process. Indeed, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS), regardless of the content of a final EIS, may subsequently need to produce a supplemental EIS, as events develop and research and investigatory results are published that may need to be incorporated into the environmental impact analysis.	Comment noted.
HSUS2	**Overview** While the DEIS is a considerable improvement over previous documentation prepared under the National Environmental Policy Act (NEPA) and an effort has been made to be responsive to the scoping comments submitted by The HSUS and others in October 2005 (HSUS comments attached), it is still a biased analysis that seems tailored to support a predetermined outcome. The HSUS considers the DEIS to be deficient in several respects: 1) Failure to fully consider all reasonable alternatives – the DEIS fails to consider a number of viable alternatives to the Makah's proposal to kill whales; 2) Characterization of the past and present political situation – the DEIS, as with previous NEPA documents prepared on the Makah request, inaccurately describes the political and administrative background of the Makah's effort to resume whaling; 3) Public safety – the DEIS fails to adequately clarify how those responsible for managing the hunt will prevent on-water interactions between whalers, officials (e.g., the Coast Guard), and protesters from becoming dangerous;	These paragraphs summarize comments that appear in more detail below.

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	4) Effective management of the hunt – the DEIS does not adequately address the ramifications of an illegal hunt that occurred on September 8, 2007; 5) Future of the Eastern North Pacific (ENP) gray whale population – the DEIS does not adequately consider the cumulative impacts on the gray whale population from, e.g., global climate change, chemical and noise pollution, harmful algal blooms, and increased shipping; 6) Impact on individual gray whales – the DEIS does not adequately consider the impact of hunting methods on individual animals or whether those methods are "humane;" and 7) Effect on federally-protected areas – the DEIS does not adequately discuss how the hunt affects wilderness and other federally-designated protected areas.	
HSUS3	An important reason why The HSUS opposes the Makah request (but see below for a discussion of our primary objection) is because the push to conduct this hunt, while perhaps understandable in the context of treaties and certainly culture (although we continue to assert it is not a subsistence hunt), is frankly inexplicable in the context of the modern situation in Puget Sound. As the DEIS makes clear, Puget Sound is far different today than it was up through the early 20th century when the Makah whale hunt ceased due, *inter alia*, to the commercial extinction of the gray whale and a focus by the Makah Tribe on other industries of the western economy, including sealing. In modern aboriginal whale hunts in remote regions such as northern Alaska or Chukotka, the use of dangerous weapons risks only the whalers (and the whales) and in more populated areas such as St. Vincent and the Grenadines, dangerous/explosive weapons are not used. It is simply not sensible to pursue this hunt, with this weaponry, in one of the most economically important and densely populated shipping and recreational regions of the United States.	The 2008 DEIS fully analyzed the potential impact of a Makah gray whale hunt on public safety (Subsection 4.15, Public Safety). Comment noted.
HSUS4	The Makah are not being "good neighbors," as they insist on pursuing whaling in an area inhabited by many people and vessels, an activity that will interfere with the use of a protected area and that poses significant danger to all those involved, due to strong opposition to it. The Makah request has resulted in community divisions that will take a long time to heal (if they ever do), and in an enormous taxpayer and manpower drain.	The 2008 DEIS fully analyzed the potential impact of a Makah gray whale hunt on the social environment, including the Tribe's neighbors on the Olympic Peninsula (Subsection 4.8, Social Environment). The comment cites no specific information that was not included in the 2008 DEIS.

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	The Makah accuse opponents of the hunt of pushing their cultural values on the Tribe, but in fact the same accusation can be made in the reverse – the Makah Tribe is forcing an entire region to adapt to its cultural values. The DEIS, unfortunately, downplays all of these elements of the situation when considering the impact of this hunt on the human environment.	
HSUS5	In essence, while we appreciate the Makah's desire to preserve its cultural traditions, pursuing *this* tradition is simply not practicable from a wider social, economic, and safety standpoint. While this may not be fair from some perspectives, it is reality. Puget Sound today is a melting pot of many uses (business and recreational), cultures, values, and ideas, where the Makah tradition of whaling, especially when using modern weaponry and without a subsistence basis, does not and will not mix easily.	This is not a substantive comment about the content of the 2008 DEIS but a comment about cultural values.
HSUS6	**Failure to Consider All Reasonable Alternatives** Given these varying cultural values, NMFS's (and the Makah Tribe's) failure over the years of controversy to change the proposal to one that might be more acceptable to the wider community is difficult to fathom and violates NEPA's requirement to "rigorously explore and objectively evaluate all reasonable alternatives."[1] NMFS has never proposed a hunt that is pursued farther offshore in the migratory corridor, or that establishes a smaller annual quota that actually matches consumption commitments by tribal members (four or five whales in a year will no doubt result in meat going to waste, as not all tribal members want to eat it), rather than one that symbolically matches the historic villages of the Makah Nation[2]. Certainly a ritualized hunt or a ceremonial event that relies entirely on "calling a whale" to shore – the latter described in the DEIS as a valued cultural practice historically performed by the Makah chiefs – would address the concerns within the opposition, but none of these options are apparently acceptable to the Makah.	In response to this and other comments, the new DEIS includes an alternative of an offshore hunt (Subsection 2.3, Alternative 3). The 2008 DEIS included an alternative with an annual limit of 3 whales landed per year, fewer than the 5 requested by the Tribe (Subsection 2.6, Alternative 5). Moreover, by analyzing a harvest of up to four whales on average, and up to five whales maximum, per year, the 2008 DEIS analyzed lesser included impacts of fewer whales per year. As explained in the 2008 DEIS, we did not analyze an alternative of a ceremonial hunt because the effects on the human environment would be the same as the No-action Alternative, thus analyzing such an alternative in detail would provide no additional information for the public or decision-maker (Subsection 2.4.2, Subsistence Use of Drift Whales).
HSUS7	The HSUS rejects the rationale in the DEIS that these alternatives are not acceptable because they would not meet "the purposes and needs" of the Makah. Just because the Makah's intention was to reserve their right to kill whales when they signed the Treaty of	As explained in the 2008 DEIS, we did not analyze a non-lethal hunt in detail because its effect on the human environment would not be different from the

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	Neah Bay in 1855 does not mean they still *must* kill whales to meet their purposes and needs. The Makah are free to interpret their purposes and needs however they wish, as long as that interpretation does not violate the law. The purposes and needs of the Makah are as flexible as their hunting methodologies – if they are free to modify and modernize the latter, they are certainly free to modify and modernize the former.	No-action Alternative and its analysis would provide no additional information for the public or decision-maker (Subsection 2.4.1, Non-lethal Hunt). We did not examine use of drift whales in detail for the same reason (Subsection 2.4.2, Subsistence Use of Drift Whales).
HSUS8	**Characterization of the Past and Present Political Situation** The HSUS and numerous others, including Parties to the IWC, have opposed the Makah hunt proposal from the outset because it failed to conform to international standards of aboriginal subsistence whaling. The proposal threatened to create and has *de facto* created a new category of whaling – cultural whaling – that does not reflect a nutritional need and weakens the distinction between aboriginal subsistence whaling and commercial whaling. The DEIS omits mention of our position entirely when discussing opposition to the Makah proposal; instead it implies that the only opponents are those who do not accept any killing of whales or who are concerned solely with the suffering of hunted whales. Certainly *some* opponents hold this latter position and it is an argument that is relatively easy for the government to counter and the DEIS spends some time doing so. But the government cannot defend its support for the Makah proposal by honestly addressing our reasons for opposing it, so it simply ignores us.	This and following comments do not cite specific passages from the 2008 DEIS. We have attempted to identify the sections of the DEIS that are the subject of each comment. The 2008 DEIS neither supported nor defended the Makah Tribe's request for a waiver of the MMPA. Rather, it examines the impact of the Tribe's proposal, and alternatives to that proposal, on the human environment. In response to the concern raised here and elsewhere, the 2008 DEIS examined the potential for authorization of a Makah hunt to lead to increased whaling worldwide (Section 4.17, National and International Regulatory Environment). In describing the concern about potential impacts, the 2008 DEIS stated: "Public comments also expressed concern that NMFS' approval of Makah whale hunting could lead to increased whaling by weakening United States leadership in whale conservation or strengthening the position or resolve of whaling proponents" (Subsection 4.17, National and International Regulatory Environment) The new DEIS included a similar passage, which has been revised in response to this comment to state: "Public comments on our 2008 Draft Environmental Impact Statement (DEIS) expressed concern that NMFS' approval of Makah whaling could lead to increased whaling worldwide by

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		creating a new category of cultural whaling, weakening United States leadership in whale conservation, or strengthening the position or resolve of whaling proponents." (Subsection 4.17, National and International Regulatory Environment).
HSUS9	As the DEIS notes, the working definition of "aboriginal subsistence whaling" has been amended at the IWC, but it does not clarify that this change was spearheaded by the US delegation solely because of the Makah request[3]. The new definition is far weaker than the original, as it no longer includes the requirement to demonstrate a nutritional need; a requirement, incidentally, that the Alaska Natives expended considerable effort to meet in the 1970s and 1980s and that formed the basis for the opposition expressed by IWC Parties at the annual meeting in 1997 (see below).	This comment does not accurately represent the information presented in the 2008 DEIS. The 2008 DEIS noted that the working definition of "aboriginal subsistence *whaling*" developed by an ad hoc technical working group in 1981 was never adopted by the IWC (Subsection 1.2.4.1.3, IWC Aboriginal Subsistence Whaling). The 2008 DEIS also described a definition of "aboriginal subsistence *use*," which was developed by a "Cultural Anthropology Panel" in 1979 (Subsection 1.2.4.1.3, IWC Aboriginal Subsistence Whaling). As described in the 2008 DEIS, the 1979 definition of "use" was adopted by the IWC in 2004, as proposed by Russia. The 1979 definition of "use" did not "amend" the 1981 definition of "whaling."
HSUS10	By not including our position in the DEIS's description of the spectrum of opposition to the Makah proposal, the US government is able to avoid acknowledging actions it has taken to amend the aboriginal subsistence standards at the IWC and in domestic regulations to fit the Makah proposal rather than the other way around. Indeed, the DEIS avoids having to include a more thorough and culpable description of the actions the government has taken to push the proposal forward, which led to multiple court judgments ruling that these actions were illegal. Clearly the government would prefer to minimize reference to this history and the DEIS certainly does so! The precedent-setting nature of this request has led to political machinations on the part of the government that has made the world a less safe place for whales, no doubt never the Makah Tribe's intention, but unfortunately a principal result.	As described above, the 2008 DEIS described various grounds for opposition to the Makah's proposal. Also as described above, in response to this comment, the new DEIS adds to that list the concern that the Makah's proposal adds a new category of "cultural whaling." As described in the 2008 DEIS, the United States offered a detailed explanation of its determination that the Makah Tribe's request met the IWC standards for aboriginal subsistence whaling (Subsection 1.4.1.2.2, Overview of Requests for ENP Gray Whales on Behalf of the Makah).

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		In response to this and other comments, the new DEIS also cites the document the United States prepared and presented at the 2007 meeting of the Aboriginal Subsistence Whaling Group that details the factors supporting the United States' conclusion that the Makah Tribe's request met the requirements for an aboriginal subsistence whale hunt (Subsection 1.4.1.2.2, Overview of Requests for ENP Gray Whales on Behalf of the Makah).
HSUS11	Regarding the events at the 1997 IWC meeting in Monaco, it is at best disingenuous, and at worst misleading, for the DEIS to suggest that "many" IWC delegates supported the US delegation's request on behalf of the Makah. It is also incorrect to suggest, through the use of the word "others" when referring to the opposition encountered, that this opposition was in the minority. Indeed, a majority of countries speaking in the plenary session at the 1997 meeting opposed the US submission on behalf of the Makah Tribe on substantive grounds, including Australia, the Netherlands, Spain, the United Kingdom, Chile, New Zealand, Brazil, Mexico and Argentina.	The 2008 DEIS passage that referred to "many" delegates supporting the Makah proposal and "others" opposing it describes the IWC annual meeting in *1996*, rather than the meeting in *1997* (Subsection 1.4.1.2.2, Overview of Requests for ENP Gray Whales on Behalf of the Makah). According to the Chair's Report, at the 1996 ASW Sub-committee meeting, 10 members supported the Makah request (Denmark, St Vincent and The Grenadines, Norway, Russian Federation, Grenada, Japan, Republic of Korea, Monaco, St Lucia, and France) and 8 members expressed doubt (Australia, Spain, Chile, China, New Zealand, Mexico, Oman, and The Netherlands) (IWC 1996 Chair's Report). The United States withdrew its request at the plenary session. In response to this comment, the referenced passage appears in the new DEIS but the reference to the plenary meeting is deleted. Also in response to this comment, the description of the 1997 plenary meeting in the new DEIS includes the sentence "Several delegates opposed the Makah Tribe's request, while others supported it (IWC 1997) (Subsection 1.4.1.2.2, Overview of Requests for ENP Gray Whales on Behalf of the Makah).
HSUS12	The Verbatim Record for the Monaco meeting contains several statements clarifying that the vote by numerous Parties for the gray whale quota was in support of the Russian	Regarding the *1996* IWC meeting, the 2008 DEIS stated: "Other delegates indicated they would vote

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	Federation's request on behalf of the Chukotkan people, whose subsistence needs had long since been recognized by the IWC, *not* in support of the Makah proposal. Nevertheless, the DEIS not only ignores these clearly stated caveats but offers another rationale for the opposition to the Makah request: "One reason for this opposition was that the United States did not ask the Russian Federation to share the existing [quota]…" Yet the Verbatim Record does not support this as an opposition rationale at all, although certainly Parties recommended that aboriginal groups share existing quotas rather than combine requests additively. The reason for the opposition was because the Makah request did not conform to the existing definition of aboriginal subsistence, full stop. It is clear that the DEIS seeks to respond to previous criticism that the description of events at the IWC omitted the fact that there was opposition. However, rather than describing the opposition accurately, the DEIS ignores the facts and instead manufactures a rationale that allows the government to avoid admitting that, in essence, it forced a vote on subsistence quotas that put Parties in the position of having to vote for the gray whale quota if they wished to support the Chukotkans, even knowing that the United States had "done a deal" with the Russians that would allocate some of the whales to the Makah. The DEIS is rife with sins of omission (see below), but this is one instance where the text is completely inaccurate. The US delegation manipulated the situation and damaged its integrity in order to get some form of approval for the Makah proposal at the IWC. The government's actions were wholly inappropriate and The HSUS strongly urges the US government to avoid recasting history. What is done is done – ignoring it or spinning it simply makes a bad situation worse.	against the proposal. One reason given for this opposition was that the United States did not ask" Russia to share its existing quota (Subsection 1.4.1.2.2, Overview of Requests for ENP Gray Whales on Behalf of the Makah). The next paragraph explains there were other reasons for the opposition to the request, specifically that the Makah did not have a "continuing traditional dependence" on whales and did not have a nutritional need for whales. This paragraph describes in detail how the U.S. delegation responded to those criticisms before withdrawing its request that year. Regarding the affirmative vote at the *1997* IWC meeting approving the joint U.S.-Russian request, the 2008 DEIS did not describe support or opposition, but did describe IWC deliberations that led to the inclusion of the words "whose traditional aboriginal subsistence and cultural needs have been recognized" to the Schedule language (Subsection 1.4.1.2.2, Overview of Requests for ENP Gray Whales on Behalf of the Makah).
HSUS13	NMFS's indiscriminate – and indeed illegal – support for the Makah proposal has weakened the US position on whaling domestically and internationally and the need to avoid acknowledging this continues to result in an inaccurate portrayal of the opposition to the hunt, including from Parties to the IWC, and the actions taken by the US delegation at the IWC. Contrary to the DEIS's characterization, the IWC has *never* acted on the Makah request – the request (i.e., the needs statement) was withdrawn in 1996 and events transpired in 1997, as described above, that led to a vote on a gray whale quota (as required by the Schedule) that numerous Parties made clear was *not* to be taken as support for the Makah needs statement. Indeed, the US delegation, which had	The comment states that U.S. support for the Makah proposal has weakened the U.S. position on whaling but provides no specific information to support that statement. The 2008 DEIS examined the potential for the requested agency action to increase aboriginal subsistence whaling and harvest of whales (Subsection 4.17.2.3, Worldwide Whaling). The comment cites no information that was not included in that analysis.

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	established a precedent when it acted on behalf of the Alaska Natives in the 1970s of submitting strong needs statements in order to demonstrate that subsistence quota requests were based on a clearly defined need, completely reversed its previous policy and insisted in 1997 that the IWC *cannot* act on aboriginal needs statements. The delegation argued that there was no mechanism at the IWC to recognize aboriginal needs, despite the considerably more diligent (and legal) efforts it went through on behalf of the Alaska Natives to accomplish that very recognition. Given this, for the DEIS to say that the IWC acted on the Makah request is not only incorrect, it is hypocritical.	
HSUS14	The United States has established a dangerous precedent of Parties acting unilaterally or bilaterally to recognize aboriginal needs, as it did bilaterally with the Russian Federation in 1997, and to determine without IWC oversight which groups are eligible to take whales from stocks for which the IWC has assigned a quota.	The comment refers to actions that have already occurred. The 2008 DEIS examined the potential impact of taking the proposed action, and alternatives to that action. In any event, while the comment asserts that U.S. action at the IWC already set a precedent, the comment does not provide specific information beyond that analyzed in the 2008 DEIS to support any conclusion about the effect of such a precedent.
HSUS15	We note that the DEIS, in Section 4.17.2.2, concludes that "...it is unlikely that NMFS' actions to either deny the Makah request (Alternative 1- No- action) or grant the Makah some level of hunting (Alternatives 2 through 6) would change the United States' position on commercial and scientific whaling or its ability to actively pursue its position." This statement is disingenuous. NMFS's actions have *already* changed the US position on commercial whaling and undermined its opposition to it, as outlined above.	The comment states that the U.S. request on behalf of the Makah Tribe resulted in a change in the U.S. position on commercial whaling, yet provides no evidence of a change in the U.S. position on commercial whaling.
HSUS16	The United States was once a leader at the IWC against commercial and scientific whaling, but is now trailing Australia, New Zealand, and the United Kingdom in this regard, all of whom opposed the Makah hunt proposal from the outset. The DEIS' argument that a Makah hunt would not weaken the US position against commercial whaling because US support for the Alaska Native hunt has never done so (which in fact is questionable) entirely misses the point that the two hunts are not the same and that this is precisely why The HSUS, many IWC Parties, and others have opposed the Makah proposal.	The 2008 DEIS considered whether authorizing a gray whale hunt will affect worldwide whaling, including aboriginal subsistence, scientific, and commercial whaling. That analysis appears on pages 4-200 through 4-205 of the 2008 DEIS (Subsection 4.17.2.2, Worldwide Whaling; Section 4.17.3, Evaluation of Alternatives).
HSUS17	**Public Safety**	The 2008 DEIS described the potential for hunters, protesters, or bystanders to be injured from

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	Chapter Two describes "Public Safety Measures," but fails to clarify that these very measures were employed in the 1999 and 2000 hunts and nevertheless someone was seriously injured in 2000. The only way a guarantee of conducting a safe hunt can even be approached, let alone achieved to any satisfactory degree, in such a heavily populated region is by expending large sums of taxpayer money on Coast Guard escorts to enforce the RNA and MEZ and to be on hand should an emergency response be required. As noted above, this is simply *not* a good place to host a whale hunt today – this may not be fair from the Tribe's point of view, who never invited westerners to the Olympic Peninsula, but it is reality.	weapons, boating accidents, or protest activities (Subsection 4.15, Public Safety). The analysis stated that the lowest risk of injury would occur under the No-action Alternative, and the risk of injury would increase depending on the number of days hunting would occur.
HSUS18	Quite frankly, it is almost a guarantee that someone who is not a whaler *will* eventually be injured or killed during a Makah whale hunt if one is authorized. The dangers inherent in whaling, which in other aboriginal whaling situations are faced only by the whalers (as is appropriate), are being shared by others in this case (e.g., the protesters, the media, even the NMFS observers and the Coast Guard). One could argue that the protesters and reporters are facing these risks voluntarily but that would be a glib response. The protesters have their beliefs too and the reporters are simply doing their job, just like federal agency personnel. The DEIS implies that familiarity will breed contempt and eventually the circus that has surrounded previous hunts (in 1998, 1999, and 2000) will die down, but while it may be true that eventually only a core group of protesters and reporters will remain, they *will* remain. NMFS and the Makah – and the DEIS authors – simply refuse to acknowledge the reality that a whale hunt is incompatible with the Puget Sound region. The public safety discussion is, in essence, a fantasy, one that ignores that the previously established safety measures did not work in 2000 and arguably did not work in 2007 either, since the illegal whalers were able to go out onto the water with a large caliber rifle that was supposed to be under lock and key and discharge it several times without taking any of the precautions the Makah management plan requires.	The 2008 DEIS analyzed public safety in terms of the risk of injury and concludes that there is a risk of injury under the action alternatives, which is likely to increase based on various factors, most particularly the number of days of hunting (Subsection 4.15, Public Safety). None of the analyses of public safety impacts concludes that risks to public safety will diminish over time. It is unclear what passage the comment refers to regarding continued interest in and opposition to the hunt. Two sections of the 2008 DEIS that analyze effects associated with the number of vessels and hunting expeditions include the following language: [A]lternatives that allow more hunts might attract less public interest over time and less media coverage. Because of the difficulty of predicting such variations, and how they might affect the precise numbers of vessels and aircraft participating in each hunt, this analysis assumes each hunting expedition would be accompanied by the same amount of vessel and aircraft activity and associated disturbance.

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		(Subsection 4.5.2.1, Disturbance, and Subsection 4.2.2.1, Spills.) This language does not appear in the discussion of public safety.
HSUS19	**Effective Management of the Hunt** The DEIS' treatment of the illegal September 2007 hunt by several Makah tribal members is shallow and inappropriately dismisses its significance in the context of a future hunt authorization. The US delegation failed to report this breach as an infraction at the 2008 annual meeting of the IWC[4]. The federal government did successfully prosecute the illegal whalers, but in its efforts to prevent the illegal hunt from derailing the current regulatory process, the government has once again cut corners at the IWC (see HSUS scoping comments and above discussion on the characterization of the political situation), further weakening its overall policy and position on whaling.	The 2008 DEIS analyzed the cost to the Federal government and others associated with management and law enforcement. This analysis describes the costs of monitoring whales, observing hunts, and providing law enforcement in the event protests occur (Subsection 4.6.2.5, Management and Law Enforcement). In response to this and other comments, the new DEIS includes cost estimates for NMFS personnel to monitor Makah management of the hunt, as well as Federal administrative and law enforcement costs to investigate and prosecute potential infractions. Regarding U.S. reporting of the 2007 unauthorized hunt, the United States did report this incident to the IWC, but did not characterize it as an "infraction" of IWC regulations because the Makah hunt was approved by the IWC (IWC 2007).
HSUS20	In addition, the public has not had access to all of the details surrounding the investigations into the illegal hunt and there have been allegations made by the perpetrators about Makah Tribal Council involvement that must be resolved. We strongly urge NMFS to include a thorough discussion of these issues in the final EIS, to include details so far kept from the public (in the NMFS and Coast Guard reports on their investigations) and to resolve any unanswered questions that were raised at the trials. If events continue to develop, a supplemental EIS may eventually be required.	Subsequent to the release of the 2008 DEIS, some of the defendants filed documents in federal court alleging that the tribal council knew about and approved the hunt. The new DEIS describes the NMFS investigation of the illegal hunt, including allegations of tribal council endorsement (Subsection 1.4.2, Summary of Recent Makah Whaling ─ 1998 through 20012).
HSUS21	Interestingly, no mention is made in the DEIS of the fact that the leader of the illegal hunt was the 1999 whaling captain, Wayne Johnson. The very man selected by the Makah system to lead the whaling crew did not hesitate to break the law and, according to media quotes, was proud of having done so. In addition, and aside from any allegations of involvement, the Tribal Council failed to fulfill its promises to punish these actions fully and definitively. These facts beg the question of how the Makah Tribe will manage the	In addition to the added discussion about the investigation of the unauthorized hunt, described above, the new DEIS also discusses the role of certain individuals in the unauthorized hunt, questions raised about tribal management of the hunt, and the potential need for Federal oversight

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	hunt adequately in the future, which includes the process for selecting the whaling crew. Indeed, the DEIS contends that the established tribal management system will suffice for the future. The HSUS strongly disagrees with this contention and urges that the final EIS address how the proposed hunt regulations and the associated Marine Mammal Protection Act (MMPA) permit will be effectively enforced in the future, given the tribal system's failure to stop or prosecute the illegal hunt.	and enforcement of a hunt (Subsection 4.6.2.5 Management and Law Enforcement).
HSUS22	**Future of the ENP Gray Whale Population** While the present status of the gray whale population is much improved from the early 20th century, its long-term viability is very much in question and the DEIS does not adequately address this. Swartz et al. (2008)[5] noted an on-going decline in numbers of whales of various age classes in Laguna San Ignacio, one of the main breeding lagoons in Mexico. While this may simply indicate a shift in distribution, it may also reflect a true decline in breeding ground numbers, yet the DEIS does not even mention this work. Indeed, the DEIS assumes the gray whale population is at or within its Optimum Sustainable Population size, but in fact this is merely speculative and there are other scientific opinions on this.	Comment noted. The new DEIS describes new scientific information developed since the 2008 DEIS was published, including the studies by Punt and Wade (2012), which conclude that the ENP gray whale stock is at 85 percent of K (Subection 3.4.3.1.3 Population Exploitation, Protection, and Status). This analysis was reviewed by the Scientific Committee of the IWC.
HSUS23	For example, Alter et al. (2007)[6] conducted a genetics analysis that suggested a historic population size several times larger than currently assumed. The DEIS mentions this paper, but mostly in the context of saying additional evaluation of its analysis is needed. This again argues that a supplemental EIS may eventually be required. Alter et al.'s analysis suggests that either the current ENP gray whale population is far from its historical K value or that K has significantly declined in the past 100 years. If the former is true, then the precipitous drop in population in 1999/2000 is of deep concern (since it is not related to reaching carrying capacity, as the DEIS supposes). If the latter is true, then the gray whale's habitat has been severely altered or damaged in the past few decades, again an issue of deep concern. Regardless, the DEIS should have discussed these possibilities thoroughly, even if the eventual conclusion was to discount them – yet it does not. The final EIS must rectify this omission.	The new DEIS discusses the issue of carrying capacity of the ENP gray whale stock, referencing Alter et al. (2008), Alter et al. (2012), and other relevant publications subsequent to the release of the 2008 DEIS. We kept these comments in mind as we developed that discussion. As explained in the 2008 and new DEIS, we consider carrying capacity to be the current carrying capacity of the habitat (Subsection 3.4.3.4.5, Estimates of Carrying Capacity (K), OSP, and PBR).
HSUS24	As noted above, the DEIS blithely dismisses the 1999/2000 population decline as a mere "blip" in a population fluctuating around its carrying capacity. But this is only a hypothesis and there could be other, more troubling explanations for this decline, including (as the DEIS itself suggests) that a loss of sea ice in the Arctic somehow reduces foraging success for gray whales. If this latter hypothesis is correct, then global	The 2008 DEIS devoted several pages of discussion to the 1999/2000 mortality of ENP gray whales and NMFS' investigation and response (Subsection 3.4.3.4.2, Stranding Data). The DEIS did not describe that event as a "blip" or present an explanation for the event and noted that the theory

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	climate change and loss of sea ice bodes very ill for the gray whale, yet the DEIS barely addresses this. While the discussion of the gray whale's natural history and status is much improved over earlier NEPA documents, there is still inadequate consideration of the on- going perturbations in the Arctic due to global warming. Measurable and predicted impacts from global warming in the Arctic have led another agency, the US Fish and Wildlife Service, to list the polar bear as threatened under the Endangered Species Act. Yet global climate change is not even mentioned by the DEIS in any substantive way until Chapter 5 and then encompasses only two paragraphs – the review of the threats facing the gray whale in Chapter 3 does not have a separate discussion on global climate change at all. This is a gross omission by the authors of the DEIS and absolutely must be corrected in the final EIS.	that the die-off was related to the population hitting its carrying capacity was "imperfect." The 2008 DEIS stated that the cause of the mass stranding was "unknown" citing the official NMFS report of the investigation (Gulland et al. 2005). The new DEIS includes an expanded discussion of the potential future role of global climate change and ocean acidification on the gray whale population (Subsection 3.4.3.6.11, Climate Change and Ocean Acidification).
HSUS25	The DEIS also inadequately considers the impact of the proposed hunt on Pacific Coast Feeding Aggregation (PCFA) and Oregon to Southern Vancouver Island (ORSVI) gray whales. The Ninth Circuit expressly rejected NMFS's 2001 Environmental Assessment on the Makah hunt proposal because it failed to adequately discuss the impact on PCFA whales [7]. The court noted the importance of discussing the impacts on local populations because "gray whales disappear[ing] from the area of the Strait of Juan de Fuca, the Marine Sanctuary, or both" would have a significant impact on the environment, regardless of the hunt's effect on the wider gray whale population.	The 2008 DEIS considered the impact on gray whales at various scales, including impacts on abundance in the Makah U&A and ORSVI (Section 4.4.2.2, Change in Abundance of Gray Whales Using the Makah U&A or ORSVI Survey Areas); relationship of proposed levels of mortality to the PBR of whales in the ORSVI (Section 4.4.2.2.1, PBR of Whales in the ORSVI Survey Area), and distribution within the Makah U&A, ORSVI, and PCFG (Section 4.4.2.3, Change in Distribution or Habitat Use). Though this comment describes that analysis as inadequate, it provides no specific suggestion for an analysis not included in the 2008 DEIS.
HSUS26	The current DEIS also fails to adequately address this issue. Here, the DEIS sets an annual Potential Biological Removal (PBR) level for ORSVI whales of 2.49 whales, or 12.45 whales over a 5-year period. It acknowledges that Alternatives 2 and 4 would exceed that 5-year PBR by 2.5 whales, and Alternatives 3 and 6 would exceed the 5-year PBR by 22.5 whales. It also acknowledges that the PBR calculation *only* includes ORSVI whales "landed" and would not include those "struck and lost." However, the DEIS does not explain why struck and lost whales should not count toward the hunt's portion of the PBR. More importantly, the DEIS does not explain how exceeding PBR – particularly when "struck and lost" whales are not even counted – will affect the PCFA or ORSVI whales.	The DEIS did not "set" mortality rates for the PCFG or any other group of whales. Rather, it examined the potential impact on the human environment of the Tribe's proposed hunt and alternatives to that proposal. The Tribe did not propose to count struck and lost whales against the PCFG total, thus Alternative 2, which reflected the Tribe's proposal, included that element. The 2008 DEIS did explore how mortality associated with the Tribe's proposal and all the action alternatives might affect

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		abundance of gray whales in the ORSVI and Makah U&A. The new DEIS also examines the effect of the Tribe's proposal, and the other action alternatives, might affect abundance of gray whales at various scales, including in the Makah U&A and within the larger PCFG.
HSUS27	We also wish to note that the discussion of the potential impacts of the various alternatives on the whales found in the Makah U&A is highly speculative and frankly not precautionary. The discussion assumes that the appearance of new whales in the photo-ID catalog reflects the wide range in movements of whales in the Makah U&A and in fact parallels recruitment into this group of animals; that is, it assumes that this is a relatively open population, with new whales entering it from the larger ENP population all the time. The DEIS's discussion treats this working hypothesis as a fact, but the truth is that this hypothesis does not yet have data that clearly support it – the continuing appearance of new whales in the catalog could merely reflect the increased photo-ID work being undertaken by researchers, who have expanded their efforts throughout the PCFA and ORSVI survey areas. It is the lack of precaution in this discussion that we wish to emphasize – the DEIS responded to the court order to focus more attention on the PCFA whales and the hunt's potential impacts on it, but the subsequent discussion is thin on fact and rich on speculation, perhaps unavoidable but not a license to ignore uncertainty.	The new DEIS includes new information and analysis available since the 2008 DEIS regarding recruitment into the PCFG (Subsection 3.4.3.4 Pacific Coast Feeding Group (PCFG) of Gray Whales).
HSUS28	Chapter Five, Cumulative Effects, appears to have entirely missed the point of a cumulative effects analysis. For each element under analysis (e.g., water quality, other wildlife, economics), the DEIS appears to have considered how a Makah hunt would affect that element cumulatively with other activities already having, or predicted to have in the future, an effect on that element. But a cumulative effects analysis ought to analyze how human activities, especially those clearly identified as threats, interact to have cumulative effects on the environment and, in this case, the ENP gray whale population. This section should have a discussion on cumulative and synergistic impacts already facing the gray whale and how the hunt will add to these. For example, a cornerstone of the cumulative effects chapter should have been how global warming is affecting and is predicted to affect the gray whale and its habitat and how the effects of other human activities, such as (obviously) aboriginal subsistence hunts, shipping, chemical discharge,	In response to this and other comments, that discussion has been expanded in the new DEIS. The conclusion remains that while a variety of foreseeable activities may affect gray whales in the future, there is insufficient information to project the likely effects of these threats in the future.

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	and noise production, are working and will work together with global warming impacts to affect the gray whale. The section-by-section presentation of how the hunt will add to effects on one element at a time is *not* a cumulative effects analysis.	
HSUS29	As written, the cumulative effects chapter is merely a rehash of the earlier discussions found in Chapters Three and Four – for example, the conclusion that any oil spill from whaling-related vessels would not appreciably increase the risks associated with potential oil spills because tankers already in the region would wreak much greater havoc if they spilled their much larger volumes of oil is a conclusion already discussed in earlier chapters. Clearly a cumulative effects chapter is meant to consider *more* or *other* issues, such as, e.g., how impacts from oil spills might interact or already be interacting with, *inter alia*, global warming, noise, industrial fishing, chemical pollution, harmful algal blooms, and (of course) aboriginal whaling to affect the gray whale. In addition, concluding that the activity being analyzed will have a negligible impact and therefore will not add appreciably to one other activity with a large impact is a fallacy into which agencies that have attempted to conduct cumulative effects analyses have fallen too often. All activities with impacts must be considered *together*. NMFS must reconsider this chapter in the final EIS and at a minimum consider how the multiple threats faced by gray whales might interact to negatively affect the ENP gray whale population in ways not anticipated when considered separately or in pair-wise only combinations.	The 2008 DEIS addressed the multiple threats to the ENP gray whale stock in Chapter 5, which examined the potential cumulative effects of unrelated activities. In response to this and other comments, that discussion has been expanded in the new DEIS. The conclusion remains that while a variety of foreseeable activities may affect gray whales in the future, there is insufficient information to project the likely effects of these threats in the future.
HSUS30	**Impact on Individual Gray Whales** Whenever NMFS issues a take permit pursuant to the MMPA, the permit "shall" specify "the location and manner (*which manner must be determined by the Secretary to be humane*)" of take (emphasis added)[8]. While the DEIS describes the hunting methods that may be used in Chapter Two, it never discusses the impact these methods will have on individual animals, or the "degree of pain and suffering" that individual whales may face. Instead, in its "Environmental Consequences" section, it states that "[w]elfare effects on...whales are considered at the scale of the ENP gray whale stock and of whales that use local survey areas." The DEIS must discuss the pain and suffering the hunt will cause *individual* animals, as well as a full analysis of which method, if any, can be deemed "humane" under the MMPA.	The 2008 DEIS analyzed in detail the impact on individual whales by considering the manner and time to death associated with each alternative and method of hunting (for example, Section 4.4.3.2.4, Manner and Time to Death examines the impact on individual whales under the Tribe's proposed alternative). The evaluation criterion is described in Section 4.4.2.4, Method of Striking and Killing; Time to Death; Hunting Efficiency.
HSUS31	**Effect on Federally-Designated Protected Areas** The hunt is proposed in or near federally-designated protected areas, including the Olympic Coast National Marine Sanctuary; the Washington Islands National Wildlife Refuges, including the Quillayute Needles, Flattery Rocks, and Copalis Refuges, which	The 2008 DEIS examined the potential effects on the values represented by federally designated areas, but not on the areas themselves. For example, the 2008 DEIS considered impacts to water quality,

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	are almost entirely designated as Wilderness Areas; the Olympic National Park; and the Olympic Biosphere Reserve. NMFS must fully account for any possible effects the proposed hunt will have on the values intended to be protected by these areas.	marine habitat and species, gray whales, wildlife, economics (including recreation), noise and aesthetics. This comment does not identify any specific values associated with federally designated areas that is not captured in the range of resources analyzed in the 2008 DEIS.
HSUS32	For example, the 2007 Washington Islands National Wildlife Refuge Comprehensive Conservation Plan contains a voluntary 200-yard boat exclusion zone, intended to protect the wilderness character of the refuge, as well as the sea birds and other wildlife on and near the islands. Only Alternative 4 requires compliance with this 200-yard protective zone. This exclusion zone should be required in each alternative. In addition, most of the Washington Islands Refuges are also designated wilderness areas. In recognition of this, the US Fish and Wildlife Service's "Vision Statement" for the three refuges states that: "The more than 600 rocks, reefs, and islands known as Flattery Rocks, Copalis, and Quillayute Needles National Wildlife Refuges, are designated wilderness (except Destruction Island), and all will continue to be preserved in a natural condition with *minimal human intrusion*" (emphasis added). Also, the Wilderness Act of 1964 requires that the "agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area."[9] The DEIS fails to describe how allowing a whale hunt that will include multiple vessels within 200 yards of a designated Wilderness Area will promote that area's wilderness values.	One of the purposes of an EIS is to develop information for the public and decision-maker. By having alternatives that vary in their details, the DEIS provides information on the effect of the variations. If each alternative required an exclusion zone, the DEIS would not present the public and the decision-maker with information about the effect of having an exclusion zone. The 2008 DEIS analyzed the potential effect of a whale hunt on the National Wildlife Refuges.
HSUS33	In fact, in the Makah's comments on the 2007 Comprehensive Conservation Plan, the Tribe noted the potential inconsistency between its use of fish and wildlife resources in the area and the Refuge's "minimal human intrusion" and wilderness goals. Instead of resolving the issue, the Fish and Wildlife Service promised to issue a "Memorandum of Understanding" with the Makah over the dispute. The DEIS does not mention this issue, or the result of the Memorandum with the Tribe, despite NEPA's requirement that the agency fully address "[p]ossible conflicts between the proposed action and the objectives of Federal…policies and controls."[10]	Comment noted.
HSUS34	**Miscellaneous** There are a number of minor (and perhaps not so minor) points in the DEIS that lead to a biased account of the elements surrounding the Makah whale hunt proposal and the previous hunts. These minor issues, when added together, lead to a more positive picture	Comments noted.

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	of the issues than reality warrants. For one example, the DEIS does not mention the presence of an Alaska Native at the 1999 butchering of the whale on Front Beach until well into Chapter 3 and then only in passing. In fact, this individual was videotaped by a bystander very late the night the whale was towed into the beach, expressing dismay that everyone (meaning the Makah whaling crew and the butchering team) had already gone home and left him to deal with the remaining tasks alone. No mention is made of this footage, which was sent to NMFS after the hunt. The only rationale for this omission seems to be that it does not reflect well on the Makah involved in processing the whale and detracts from the DEIS's portrayal of the 1999 hunt as an overwhelmingly positive, well-ordered and well-attended event.	
HSUS35	For another example, the DEIS describes the 2000 incident where a protester on a jet ski collided with a Coast Guard vessel (see above, "Public Safety"), but places the blame on the protester for "running into" the Coast Guard ship. This is not how the protester recalls it – she considers that the Coast Guard vessel ran over her craft. Regardless of perspective, there is also no mention of the seriousness of her injuries – she continues to suffer pain in her back and shoulders eight years later and receives periodic medical treatment for it. The biased presentation of both of these details minimizes the incident, presumably in order to support the DEIS's dubious contention that public safety will be adequately protected under the hunt regulations and Coast Guard rules.	The 2008 DEIS provided a detailed description of incidents associated with previous Makah whale hunts (Section 3.15.3.4, Behavior of People Associated with the Hunt) to ensure a complete analysis of the potential impacts to public safety if a hunt is authorized, including the fact that a protestor required transport to the hospital and suffered a dislocated shoulder. The analysis concluded that if a hunt were authorized, there would be a potential for injury from boating accidents: Under any of the action alternatives, boating accidents might result from protest activities on the water, the actions of a wounded whale, or adverse weather and sea conditions. Any type of boating accident could result in traumatic injury, drowning, or hypothermia. The risk of individuals being injured in a boating accident associated with protester activities would be reduced by the Coast Guard navigational restrictions (Section 3.1.1.3, Coast Guard Regulated Navigation Area), to the extent protesters obeyed those restrictions. In response to this and related comments, the new DEIS now states that a jet ski operator "collided with" a coast guard vessel.

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HSUS36	In addition, the DEIS does not adequately analyze the impacts from the significant taxpayer expenditures that have been associated with conducting the Makah hunt, in contrast to the relatively minor outlay for the Alaska Native whale hunt. In the past, there have been direct subsidies to the Makah Tribal Council in support of the hunt (see previous HSUS comments). Even if such subsidies have ceased, the hunt is conducted in a densely populated area with significant vessel traffic and therefore the Coast Guard must mobilize to protect the safety of mariners and the whalers. It is simply inescapable that the Makah hunt will cost more in public money than the Alaska Native hunt. The DEIS only speculates on the cost of potential future hunts under the various alternatives, with minimal impacts analysis – it does not address the issue of previous expenditures, including the costs of lobbying at the IWC for the Makah request. Again, this omission seems geared toward minimizing the negative and emphasizing the positive – yet few of the postulated benefits to the Tribe have actually been confirmed, such as improved health, but are merely speculative for now.	The 2008 DEIS examined the administrative and law enforcement costs associated with each alternative (Subsection (4.6.2.5 Management and Law Enforcement). This comment provides no information to support a conclusion that costs associated with a hunt by Alaska Natives is relevant to the analysis presented in the 2008 DEIS.
HSUS37	There are other examples, including (as noted above) the failure of the DEIS to include an accurate description of The HSUS's position on the hunt, but the overall issue is the subtle, persistent effort by the DEIS's authors to present the Makah whale hunt proposal and its history in the best possible light. There has been less outright misstatement of fact than in previous NEPA documents and more "sins of omission," but the result is similar – the past has been adjusted, if not revised, to portray the hunt proposal as a reasonable alternative and the actions of the opposition as unreasonable and even irrational. The HSUS will not dwell on these minor and not so minor points in these comments, as they merely draw attention from the major arguments we have against this proposal, but we did want to remark on their existence.	See the response to the above comment regarding how the 2008 DEIS characterized opposition to the Tribe's proposed hunt.
HSUS38	**Conclusion** The HSUS does not support any activity that causes animals to suffer – and it is our belief that all whaling, for whatever purpose, is inherently inhumane. Indeed, the DEIS discussion on killing methods and welfare merely reinforces The HSUS's contention that whales cannot be killed humanely. *Average* times to death for aboriginal hunts (and even commercial hunts with far more sophisticated technology) are in the region of tens of minutes and maximum times can be more than an hour. Therefore, we cannot support aboriginal subsistence whaling. However, we do not oppose such whaling, as we accept subsistence need as a rationale for killing wildlife; rather, we hold that such whaling	This comment presents legal arguments and does not appear to take issue with the factual information or analysis presented in the 2008 DIES.

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	must be conducted in as humane a manner as possible (which in most cases it currently is not) and *must* be for nutritional as well as cultural/traditional needs. Finally, there can be no argument that all such whaling must be conducted in accordance with domestic and international law. We oppose the Makah hunt proposal, but not other subsistence hunts, because the request has always been for a cultural rather than a subsistence hunt. It has never fit the definitions and requirements of domestic and international management regimes. It will require a waiver from the Marine Mammal Protection Act (MMPA). It creates a novel category of whaling at the international level that all too easily could be used by pro-whaling nations to justify killing more whales. The DEIS's dismissal of these concerns in Chapter Four is unconvincing and misleading – the support the US delegation has consistently shown the Makah proposal has already shifted the dynamics at the IWC, for the worse as far as whale protection is concerned.	
HSUS39	We repeat: The hunt proposal did not meet the previously-set standards for aboriginal subsistence. The US government instead went about re-writing the rules, making them weaker, and undermining previously strong policy positions. The world is now less safe for whales and has lost a strong and unequivocal champion against commercial whaling, developments in which this proposal has played a large role. Support for the Alaska Native bowhead hunt has also promoted these developments, but not by weakening the definition of aboriginal subsistence whaling. Thirty years ago the US delegation worked to ensure that the aboriginal subsistence category of whaling at the international level had rigorous standards and was clearly distinct from commercial whaling. Twenty years later, it at best undermined and at worst reversed this position and worked to weaken these standards, cutting corners so severely that it actually broke the law. This can in no way be seen as good for whales, although it has certainly been good for whalers.	We understand this comment to refer to the process by which the United States sought a gray whale quota at the IWC, not a specific comment about the analysis presented in the 2008 DEIS. This comment points to no evidence indicating an actual effect on the human environment (for example, on the amount of whaling worldwide) of the U.S. action at the IWC. Nor does it identify a likely effect, beyond those that have already occurred, if the United States took the action proposed by the Tribe (waiver of the take moratorium, issuance of an MMPA permit, and authorization under the WCA).
HSUS40	From the start, NMFS has mishandled the Makah Tribe request to revive its whale hunt. If the agency had handled the application for this take in a manner consistent with US laws, policy, and international treaty obligations in the first instance, The HSUS would have found it far more difficult to raise objections when the Makah Tribe brought its request to the IWC in 1996. However, from the outset, NMFS has been so anxious to "get the job done" that it has consistently failed to "do the job right" and the courts have agreed with us. The agency's efforts to promote and approve the Makah request – apparently at any cost – have consistently resulted in legal short cuts and questionable policy positions that have weakened domestic and international whale protection. The	The 2008 DEIS was prepared over a period of 3 years, following two scoping periods. As new scientific information came to light, we terminated the 2008 DEIS and commenced a new process, starting with a scoping process. The new DEIS is being released for public comment more than 6 years following the release of the 2008 DEIS. This record demonstrates serious deliberation of the Tribe's request.

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	government has been so anxious to get to the finish line – to approve the Makah request – that it has repeatedly bent and broken the rules, the most recent example being its effort to avoid reporting the illegal September 2007 hunt as an infraction at the 2008 IWC meeting. All the stakeholders in this process are the poorer for this mishandling and dangerous precedents have been set.	The United States reported the unauthorized take of the whale in 2007 by Makah hunters, but did not report it as an infraction, because, while the hunt was illegal under U.S. law, the catch limit for ENP gray whales was not exceeded (Annual Report of the International Whaling Commission 2008).
HSUS41	Regarding the MMPA waiver process, we strongly urge that if the agency eventually grants the waiver, it should narrowly tailor it, to minimize the chances that other parties will come through the door that issuing a waiver to the Makah will open. While other waivers have been granted, none have remained in place, in some instances because the courts ruled they were illegal. This waiver, if it is granted and used as intended, should be narrowly defined as much as possible, so it will be a "one-off" event.	The 2008 DEIS stated that all action alternatives consider hunting of gray whales only (Subsection 2.3.2, Elements Common among Action Alternatives). In response to this comment, the new DEIS details the enforcement measures and training and certification processes in common among action alternatives (Subsection 2.3.2.2.12, Other Environmental Protection Measures).
HSUS42	The HSUS is aware of detailed comments prepared by the Peninsula Citizens for the Protection of Whales (PCPW). Many of the PCPW's concerns regarding the DEIS, particularly how it refers to the PCFA whales and issues related to potential conflicts of interest among those who prepared the DEIS and conducted research on Makah culture and subsistence needs, are shared by The HSUS and we wish to endorse these portions of the PCPW's comments. Thank you for the opportunity to comment on this precedent-setting and important issue. Sincerely, Naomi A. Rose, Ph.D. Marine Mammal Scientist Cc: Tim Ragen, executive director, Marine Mammal Commission *Email boilerplate omitted.*	See responses to the PCPW comment letter.

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	[1] See 50 CFR §1502.14(a). [2] Alternative 5 does propose a smaller quota, but it is *still* not based on actual consumption commitments; it is an arbitrary number and the exchange for this smaller number is less protection for resident whales. And of course, the Makah do not accept it and their own proposal continues to be for up to five whales a year. [3] The original IWC working definition of aboriginal subsistence whaling, developed by the Ad Hoc Technical Working Group in 1981, was as follows: ● Aboriginal subsistence whaling means whaling, for purposes of local aboriginal consumption carried out by or on behalf of aboriginal, indigenous or native peoples who share strong community, familial, social and cultural ties related to a continuing traditional dependence on whaling and on the use of whales. ● Local aboriginal consumption means the traditional uses of whale products by local aboriginal, indigenous or native communities in meeting **their nutritional, subsistence and cultural requirements** [emphasis added]. The term includes trade in items which are by-products of subsistence catches. ● Subsistence catches are catches of whales by aboriginal subsistence whaling operations. The new definition, adopted by consensus by the Parties in 2004, is as follows: ● The personal consumption of whale products **for food, fuel, shelter, clothing, tools, or transportation** by participants in the whale harvest [emphasis added]. ● The barter, trade, or sharing of whale products in their harvested form with relatives of the participants in the harvest, with others in the local community or with persons in locations other than the local community with whom local residents share familial, social, cultural, or economic ties. A generalized currency is involved in this barter and trade, but the predominant portion of the products from each whale are ordinarily directly consumed or utilized in their harvested form within the local community. ● The making and selling of handicraft articles from whale products, when the whale is harvested for the purposes defined in (1) and (2) above.	

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	It is important to note that the requirement for nutritional need has been eliminated (see, *inter alia*, use of the conjunction 'or' rather than 'and' in the first bullet of the 2004 definition). In addition, this definition could be interpreted to mean that anyone with whom the Makah conduct business (persons outside the local community with whom the Makah share 'economic ties') could receive whale products in trade – this is disturbingly open language and may not preclude commercial trade. [4] The rationale provided by the US delegation for not reporting the illegal hunt as an infraction is not satisfactory. Various international agreements (e.g., Article 27 of the Vienna Convention of the Law of Treaties, internal law and observance of treaties, states "A party may not invoke the provisions of its internal law as justification for its failure to perform a treaty") contain language clarifying that activities allowed by the agreement must be conducted in accordance with domestic law. Any illegal action is thus an infraction of the agreement. NMFS and the US IWC delegation apparently reject this interpretation and contend that only takes in excess of the IWC quotas (or other specific Schedule provisions, such as the taking of a mother/calf pair) are infractions. This sets a disturbing precedent. [5] Swartz, S.L., Urban-R, J., Gomez-Gallardo U., A., Gonzalez C., Troyo V., B., and Najera C., M. 2008. Preliminary comparison of winter counts of gray whale in Laguna San Ignacio, B.C.S., Mexico from 1978 to 2008. Document submitted to the International Whaling Commission Scientific Committee, SC/60/BRG30. [6] Alter S.E., Rynes E., and Palumbi S.R. 2007. DNA evidence for historic population size and past ecosystem impacts of gray whales *Proc. Natl. Acad. Sci USA* 104:15162-15167 – incidentally, this important reference is missing from the references list in the DEIS, although it is cited in the text. [7] *Anderson v. Evans*, 314 F.3d 1006 (9th Cir. 2002). [8] 16 USC §1374(b)(2)(B). [9] 16 USC §1133(b). [10] 50 CFR §1502.16(c).	

Makah Indian Tribe – Comments submitted August 14, 2008 by M. McCarty.

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MT1	Attached are the comments of the Makah Indian Tribe on the Draft Environmental Impact Statement for Proposed Authorization of the Makah Whale Hunt (May 2008). Thank you for this opportunity to comment. The Tribe sincerely appreciates the substantial time and effort you and your colleagues at NOAA have dedicated to producing this document. If you have any questions please contact Jonathan Scordino, Makah Marine Mammal Biologist, at (360) 645-3176 or by email at mtcmmbiologist@centurytel.net. GENERAL COMMENTS Overall, as measured by the breadth and depth of the resources and impacts evaluated, the analysis presented in this Draft EIS is extremely thorough. More than just a long document, the substance of the agency's analysis represents a hard look at all resources likely to be impacted by the Tribe's proposal to resume ceremonial and subsistence whaling under the rights guaranteed by the Treaty of Neah Bay. In particular, the Draft EIS responds to the concerns of the Ninth Circuit in Anderson v Evans by carefully examining the local impacts of the hunt on gray whales that are present in the Makah U&A and other southern areas of the ENP stock's summer range. The Tribe appreciates the extensive analysis of the Makah people and culture and their relationship to whaling, which includes the substantial information gathered from visits to Neah Bay and discussion with the tribal community. In the often polarized public debate over whaling in the twenty-first century, the focus is too frequently limited to the impacts on the gray whale rather than on the substantial impacts that a decision to approve or reject the Tribe's waiver request will have on Makah subsistence, ceremonial, cultural and spiritual needs and values. It is, after all, the "human environment" that NEPA requires the agency to analyze, and just as the impacts to the gray whale are a central topic for the EIS, so too must be the impacts of the agency decision on the Tribe. This Draft EIS goes a long way toward educating the agency decision makers and the public about the potential impacts on both sides of the Tribe's waiver request. The five action alternatives and the no-action alternative represent a reasonable range of alternatives to the Tribe's proposed action. The alternatives represent both more and less restrictive approaches than the proposed action and clearly demonstrate the impacts that the Tribe's proposed time, area, and PCFA whale limits will have on affected resources. In doing so, the Draft EIS analyzes the principal conservation measures proposed by the Tribe in the waiver request. Moreover, the range of alternatives highlights that the proposed action is modest in scope and was carefully crafted so as to reflect both the Tribe's needs and the objective of minimizing the impacts to gray whales present in the southern portion of the summer range. The conservative nature of the Tribe's proposal is made clear when comparing Alternative 2 (the Tribe's proposal) with Alternatives 3 and 6, which are less restrictive in time, area, and/or limits on PCFA whales.	Following publication of the 2008 DEIS, and prior to publication of the current DEIS, we engaged in consultations with the applicant (Makah Tribe) regarding these and other comments. We have addressed these 2008 comments through revisions to the text, where appropriate.
MT2	WHALE WATCHING Whale watching may have greater impacts on gray whales than is suggested in this document. Gray whale calf counts in the lagoons of Baja California have declined persistently over the past decade while gray whale	

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	population numbers in general have increased. The decreased use of the lagoons also coincides with increased ecotourism and whale watching efforts. This observation may show that disturbance from whale watching is either reducing survival of individuals using lagoons or it is displacing the whales to breeding areas that were not seen as favorable areas in the past.	
MT3	HOT HARPOONS/PENTHRITE GRENADES The Tribe has concerns about the analysis of penthrite grenades under Chapter 3 and Chapter 4. First, there needs to be some analysis on the expense of buying the grenades. The EIS should also analyze how the whale will be killed using a penthrite grenade, i.e. a "hot harpoon." Because (unlike bowhead whales) gray whales sink when killed, an exploding harpoon with a penthrite grenade cannot be used as the weapon to dispatch the whale and at the same time be the initial harpoon delivered on the whale. A single harpoon is not likely to be sufficient to retrieve a dead and sinking whale because the harpoon is likely to tear out under the strain of retrieval. A more accurate representation of this method of hunting would be the use of one or two cold harpoons, followed by the use of penthrite grenade harpoon to dispatch the animal. Based on this method, it is likely that use of a large caliber rifle aimed at the whale's central nervous system, as proposed by the Tribe, would result in a shorter time-to-death compared with the realistic use of a penthrite grenade. In addition, the effective range of the rifle is much longer than the effective range of a penthrite grenade harpoon.	
MT4	USE OF DRIFT WHALES FOR CONSUMPTION The legal basis for the subsistence use of drift whales by Makah tribal members needs to be clarified. See Sections 2.4.2 and 4.10.3.1. The Tribe believes that the Treaty of Neah Bay authorizes the use of drift and stranded marine mammals without prior approval from NMFS. However, there is no agreement between the Tribe and NMFS governing the subsistence use of drift whales, and NMFS' policy on this issue has never been formalized in writing. There is an agreement, which was referenced in the EIS, which allows subsistence use of marine mammals taken incidentally to fishing. The beachcombers' clause within the MMPA does not allow the consumption of edible tissues, only the collection of tissues for scientific or educational purposes. Therefore, neither of these resolves the legal uncertainty described above. Absent formal written guidance expressly authorizing Tribal members to utilize stranded marine mammals the use of this resource may be significantly less than assumed the analysis of Alternative 1.	
MT5	USE OF WHALE PRODUCTS FOR MANUFACTURE AND SALE OF TRADITIONAL HANDICRAFTS The legal basis for the Tribe's use of non-edible whale products for manufacture and sale of artwork and traditional handicrafts needs to be clarified. On page 4-123, lines 23-25, the Draft EIS states "With the possible exception of products from drift whales or whales caught in fisheries, there would be no potential for households to consume whale meat and blubber or use non-edible whale products for the manufacture and sale of traditional handicrafts." The clause "with the exception of" implies that products from drift whales can be used for such purposes under Alternative 1. In Section 4. 7.3 .2.1 on page 4-124 the document states "Compared to the no action alternative, the potential for whale products for ... making and selling handicrafts would increase ... " This language again implies that Makah tribal members can currently utilize	

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	whale products for art sold commercially and that agency authorization of a hunt would only increase the opportunities for utilization of such products in the manufacture and sale of handicrafts. Yet Section 2.3.3.2.6 at page 2-14 states that the use of whale products is strictly part of analysis for action alternatives, thus implying that use of whale products is not included under the no-action alternative (Compare Section 2.3 .1 at page 2-4 to 2-5).	
MT6	NORTHWARD MIGRATION CHARACTERISTICS AND ASSUMPTIONS REGARDING MOST LIKELY HUNTING TIMES At Pages 3-65 and 3-66, the Draft EIS discusses the characteristics of the northward migration, particularly that mother and calf pairs constituted the second migratory phase and are the last to leave the wintering areas. Page 3-67 notes that 90% of this phase is made of cow-calf pairs. In Chapter 4, the Draft EIS makes some logical assumptions (with the exception noted below), including that the timing of a hunt under Alternatives 2 and 4 (see, e.g., Page 4-5) would most likely be in the late Spring. The Draft EIS should make the connection between the characteristics of the second phase of the northward migration and the assumption as to likely hunting in April and May, which may affect hunting opportunities given the prohibition on striking calves and females accompanied by a calf.	
MT7	ASSUMPTIONS UNDER ALTERNATIVE 5 Alternative 5 includes more restrictive limits than the proposed action. The Tribe would be limited to 3 strikes, 2 whales harvested, and 1 struck and lost. However, the agency's assumption, without spelling out the details as it does for Alternative 2 at page 4-7 (bottom), concludes that "all three whales potentially killed could be PCFA whales." (4th line from bottom. Note that the sentence starts off incorrectly as "Alternative 3" instead of Alternative 5). In alternatives 2, 3, 4 and 6, it is assumed that the combination of struck and lost (3), maximum harvest (5) and strike limit (7) results in the potential for up to 7 whales to be killed in any given year for the reasons stated at the bottom of Page 4-7. Applying the same reasoning to Alternative 5 yields a potential of two (not three) whales killed in any given year. This is because whaling for the year will have to cease once (1) 2 whales are harvested; (2) one whale is harvested and one is struck and lost; or (3) one is struck and lost. The maximum potential killed whales is therefore two, and the strike limit provides no actual restriction. This error should be corrected, or addressed as suggested below. If corrected to two potential kills, it would affect the assumptions in the rest of Section 4.1.5 and the analysis in other parts of the Draft EIS, such as in the comparison of alternatives (Page 4-57, bottom). An alternative approach to making the change suggested above would be to alter the parameters of Alternative 5 to a limit of two (2) whales struck and lost annually. Under this scenario, the assumption of 3 potential whale kills per year would be valid. In addition, it would be a more realistic limit, since it would be very restrictive if the first hunt of the year led to a struck and lost whale and this single struck and lost event resulted in a closure of the hunt for the entire year.	
MT8	BEST AVAILABLE SCIENCE Throughout this document there is a need to note that the data on gray whale abundance is the best science available. These estimates have been collected by experienced researchers for NMFS and have been validated by the leading international authority on large whales, the International Whaling Commission.	

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	Noting that this analysis of populations is based on the best science available will help decisionmakers and the public review the EIS and understand that the best science was used.	
MT9	SPECIFIC EDITS OR COMMENTS Page 1-13: states "Congress specified that the primary objective of the marine resource management under the MMP A is to maintain the health and stability of the marine ecosystem." It needs to be recognized that historically and currently Native Americans have been part of the ecosystem. The Makah Tribe and other tribes of the Pacific Northwest have hunted marine mammals since time immemorial. Page 1-33, line 19. "s" should probably be "Chukotka Natives". Page 2-7, Table 2-1. There is a random "2" after U&A in Alternative 6. Also for Alternative six, the row for maximum harvest, struck and struck and lost should read "Same as Alternatives 2, 3, and 4". Page 2-10, line 28. Appendix A contains the Tribe's waiver request, but it is not "discussed in detail" there. Table 2-2. Page 2-34 (Tourism). Alternative 6 should be "Similar to Alternative 2". Same with "Public Safety" on Page 2-38. page 2-37, Ceremonial and Subsistence Resources, Alternative 5 should conclude with "compared to Alternative 2." Page 2-44 (Media Observers, Alternative 6) was probably intended to refer to Alternative 3. Page 2-49 (Indigenous People Worldwide, Alternatives 2-6) should probably read "Similar to Alternative 1" for consistency throughout the table and ease of reference by the reader. Page 3-11, line 9. "sunset" should probably be "sunrise". Page 3-27, Figure 3-2. Cape Johnson appears to be mislabeled. It is north of La Push. Page 3- 79, line 28 states that identified whales reappeared "at least 93.3 miles away" from where they were seen in previous year. Instead of "at least," the sentence should read "up to 93.3 miles away" to be consistent with the example from the preceding sentence. Page 3-87. In the analysis ofPCF A whales it is noted that survey results are analyzed for population numbers under the assumption that all whales observable are seen. This document needs to discuss how close this assumption is to reality. While it is not unheard of in wildlife sciences to make the assumption that all individuals are observed, normally this is only done for animals that are highly visible, like African elephants, or have abnormally high effort, like Southern Resident killer whales. PCF A whales have neither traits of high visibility nor abnormally high observation effort. Therefore, any estimates under these assumptions are very conservative as the assumption is unlikely to be satisfied. Page 3-112, lines 19-22, portrays the hunt as a single harpoon being thrust into the animal before the whale is shot in the central nervous system with a large caliber rifle. This description is not accurate. As noted above, gray whales sink after they have died (unlike bowhead whales). A single harpoon may not be sufficient to retrieve a whale that has sunk to the ocean floor. Therefore, two or even more harpoons should be in the whale before the whale dies to prevent losing a struck whale. The additional harpoons can be applied before or immediately after the whale is dispatched with the rifle, as occurred in the 1999 hunt (see Page 1-38).	

COMMENT CODE	COMMENT	STAFF DRAFT RESPONSE
	Page 3-116, lines 22-23. The caliber ofbullet used for the majority of the 16 shots in the unauthorized 2007 hunt was known to be .460 caliber. One of the shots may have come from the .577 caliber rifle, but likely not more. Page 3-121, line 13. Should insert "gray" in the sentence "Although Alaska natives hunted gray whales .... " Note also that this appears to be contradicted by Table 3-9 (Page 3-122), showing 2 gray whales harvested in 1995. Page 3-122, Table 3-9 is missing information regarding IWC allocations. Section 3 .4.3 .6.9 at Page 3-134 should note that in the past gray whales have been entangled in Makah fishing nets. During the late 1970s and early 1980s a few whales were accidentally captured in nets. This appears to be referenced in Page 2-21, lines 11- 13 (citing Angliss and Outlaw 2008). Failing to note that gray whales have been incidentally captured in tribal fishing gear in the past may lead a reader to conclude that under the no-action alternative, if a whale is caught in a net, the fishermen caught the whale intentionally. Documentation that gray whales are occasionally caught in tribal fishing gear will promote greater public understanding of this issue. Chapter 4 should include line numbers for consistency and ease of reference. Page 4-9, line 12 should be corrected. It is not whales "after June 1 "; rather it is whales between June 1 and November 31st. Similar changes to page 4-7 as appropriate. In Chapter 4 there is analysis on social benefits of the Makah hunt on Page 4-126, Section 4.7.3.3.3. Under the analysis it is stated that, "There is insufficient information to determine whether the potential social benefits to Makah Tribe would offset potential adverse social effects." This analysis did not reference or neglected to consider Dr. Ann Renker's 2007 report. There, it was found that 88.8% of Makah households surveyed in a randomized sample want to return to whaling. Clearly, the vast majority of Makah tribal members would benefit if whale hunting were renewed. Section 4.8.3.1 at Page 4-133 needs to have the words "might" and "perceived" stricken from the last sentence. The lack of respect for treaty rights would be present, and not just "perceived," if Alternative 1 is chosen. Also, Makah tribal members, and those of other tribes, will feel increased tension and frustration if the no-action alternative is chosen, not "might". Section 4.10.3.2.2 at Pages 4-145 to 1-146 substantially overestimates the number of whales available under the no-action alternative for subsistence use. There may be 1 whale that dies in tribal fishing gear (see comment above) or drifts into tribal beaches every 5 years, but it is unlikely that any drift whale that is caught or comes ashore would be in edible condition. Whales have a thick blubber layer that traps the heat of their body. As a result, after they die the process of autolysis is quicker in whales than other animals due to the ability of a whale's body to retain heat given their immense size and thick blubber layer. An edible whale is unlikely to come to shore more often than once every 20-30 years. Eating a whale that has decomposed through autolysis may make tribal members sick and for this and other reasons does not fulfill the Tribe's treaty right.	

Marine Mammal Commission – Comments submitted August 14, 2008 by T. Ragen.

COMMENT CODE	COMMENT	STAFF DRAFT RESPONSE
MMC1	The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the Draft Environmental Impact Statement (DEIS) for Proposed Authorization of the Makah Whale Hunt. The National Marine Fisheries Service has previously prepared two environmental assessments related to the hunting of gray whales by the Makah Tribe. The Service prepared the present document to address the ruling of the Ninth Circuit Court of Appeals in Anderson v. Evans that an environmental impact statement was needed to meet the agency's responsibilities under the National Environmental Policy Act. In particular, the court was concerned about the need for additional analyses on three different issues: the impact of the proposed hunting on the whales that remain in the waters of the Pacific Northwest throughout the summer (referred to as the Pacific coast feeding aggregation), public safety concerns, and the proposed hunt's precedential effect on possible hunting by other tribes in the United States or within other countries that are parties to the International Whaling Commission. The Commission believes that the DEIS meets the requirements of the National Environmental Policy Act The Service has been particularly thorough in soliciting public input on the scope of the DEIS and in the breadth of issues addressed in that document. Also, the range of alternatives considered in the DEIS is appropriate, given the purpose and nature of the tribe's request for a waiver under the Marine Mammal Protection Act and the constraints established by the International Whaling Commission in authorizing subsistence whaling of gray whales. In summary, the Commission believes that the DEIS does a good job of analyzing the environmental consequences of the various issues that participants and decision-makers will need to consider in the course of a rulemaking under the Marine Mammal Protection Act to authorize a proposed hunt. If the Service decides to proceed with a rulemaking to waive the Marine Mammal Protection Act's moratorium and authorize the Makah Tribe to take gray whales, the Commission and others will have sufficient opportunity to make substantive recommendations about the selection of a preferred alternative from among those considered in the DEIS. As such, the Commission sees no need to make recommendations concerning the selection of alternatives at this stage. In any future reviews, we will consider not only the impact of the proposed hunting on the gray whale stock and on the Pacific coast feeding aggregation but also ways to improve hunting efficiency (e.g., to minimize the number of struck and lost whales) and to ensure that any taking is humane.	Comments noted.
MMC2	Because of the length of the DEIS, we are not now providing specific drafting suggestions or identifying areas where clarification would be useful but not substantively important. There is, however, one threshold issue that we believe the Service should address more directly than it has. This issue concerns the requirement under section 103(a) of the Marine Mammal Protection Act that regulations issued to waive the moratorium on taking or importing marine mammals ensure that the taking will not be to the disadvantage of the affected stock and will be consistent with the purposes and policies of the Act. Discussion in the DEIS	In subsection 3.4.2.1.1 (Defining Marine Mammal Population Parameters) of the new DEIS, we describe how we manage impacts to marine mammal populations according to congressional directives with the goal of maintaining the number of animals within OSP

COMMENT CODE	COMMENT	STAFF DRAFT RESPONSE
	suggests that this "disadvantage test" will be met as long as the stock would not be reduced below its optimum sustainable population (OSP) level by the authorized taking. Although this is one possible interpretation of the requirement, support can be found in the recommended decisions from previous rulemakings under section 103 for an alternative view, which is that allowing a healthy stock to decline to the point where it has been reduced to its maximum net productivity level (the lower bound of the OSP range) would be inconsistent with the statutory requirement that taking not disadvantage the stock. It does not appear that the levels of taking being considered in this instance are likely to disadvantage the stock under either interpretation. However, because this is fundamental issue of statutory interpretation that may have implications beyond the current proceeding, a more complete discussion would be useful. The Commission looks forward to working with the Service as it continues to evaluate the Makah Tribe's rulemaking request.	between K and MNPL (i.e., the current state of ENP gray whales), or, if a population is below OSP, achieving that level. As described in response to other comments, the purpose of our analysis in this DEIS is not to reach legal conclusions but to predict likely effects on the human environment of the Makah Tribe's proposed action and the alternatives. We would expect to delve into the waiver-related determinations indicated in this comment as part of any subsequent analyses required under MMPA.

Peninsula Citizens for the Protection of Whales – Comments submitted August 14, 2008 by M. Owens.

COMMENT CODE	COMMENT	STAFF DRAFT RESPONSE
PCPW1	Ever since NOAA's first Environmental Assessment rubber-stamped the Makah whale hunt, we have naively believed that a thorough and honest EIS would find way too many potentially negative impacts to people and whales to justify a return to whale "harvesting" in Washington State. The release of this DEIS has shattered the expectation that the highest quality scientific data and social analysis would be collected in an unbiased way, allowing decision-makers an honest and untainted look at this controversial issue. This Draft has obviously been prepared with the sole intent by NOAA to arrive at the same politicized decision that they have always arrived at: "There will be no significant impact on people or whales."	Neither the 2008 DEIS nor the new DEIS arrive at any decisions, or conclude that the Tribe's proposed whale hunt will have "no significant impact" on the human environment. Rather, they examine the best information to quantify impacts where possible, and where quantification is not possible, to describe impacts qualitatively. The NMFS staff who prepared the 2008 DEIS were Northwest Region staff who had not been involved with prior agency actions regarding the Makah's requests to hunt gray whales. Other circumstances were also different from past NMFS' actions on the Tribe's request. In response to the Ninth Circuit decision in *Anderson v. Evans*, staff prepared an EIS rather than an environmental assessment, ensuring a hard look at potential environmental effects. Also in response to *Anderson*, the 2008 DEIS used MMPA standards to inform the evaluation criteria so that agency decision-makers will have the necessary analysis to make MMPA determinations.
PCPW2	It is impossible to read through this Draft without being struck by the conflicts of interest inherent in the preparers, the many issues left under analyzed and unanalyzed, and the low drumbeat of uncertainty that nervously throbs through every page. The word "uncertain" itself is used at least 49 times. The phrase "not possible to predict," 16 times. The phrases "too speculative to consider," "too speculative to conclude," "insufficient information" and "difficult to predict" are used over 30 times. And the word "might" takes the prize at 258 times used.	Specific comments regarding conflicts of interest are addressed in response to a number of other specific comments below. Regarding the DEIS's treatment of uncertainty, any predictions about the effects of future events necessarily involve uncertainty. The DEIS characterizes the level of uncertainty associated with various predictions. Any final decision by NMFS will take account of the uncertainties.
PCPW3	The conflicts of interest embedded in this document are less easily spotted, but quite appallingly apparently to "locals" who are paying attention. A prime example involves the firm hired to prepare the Draft, Parametrix Inc.	As is allowed by Federal law (40 CFR 1506.5c), we employed a contractor to assist in preparation of the 2008 DEIS, under the supervision of NMFS staff, and using a competitive and documented process to select Parametrix. At the beginning of the contract, the contractor disclosed that it also had a contract with the Makah Tribe

	NOAA knew before hiring Parametrix that this company had a history of lucrative employment with the Makah Tribe. Parametrix began work for the Tribe in 2003 on a Corridor Management Plan for their Cape Flattery Tribal Scenic Byway. Parametrix was a natural choice for this job, as they had facilitated a Corridor Management Plan for the adjoining Juan de Fuca Scenic Byway. Additionally, in 2002 Parametrix had supported the Makah Tribe's effort to simply annex the reservation road onto the Juan de Fuca Byway. This plan was halted by local objections to linking the Juan de Fuca Byway to the potential "whaling road," so the Tribe designated its own Tribal Scenic Byway and Parametrix Inc. felt the frustration of dealing with the overwhelming objections of the outer community to whaling. One of Parametrix's Scenic Byway goals will be to help the tribe "interpret" whaling to tourists. This process has slowed to a halt, which must reflect the Tribe's need for a conclusion to the waiver process. If a waiver is granted, Parametrix will be back to work, helping the Tribe to finalize the whaling related tourism mentioned repeatedly in the Draft. Subsequent to the hiring of Parametrix to consult on tourism issues, TranTech, a major sub-consultant to Parametrix, was selected by the Makah Tribe in 2006 to provide construction administration services in a $10 million paving project on the Tribal Byway through Neah Bay. This consulting job continued into 2007. It is not known by us how many other projects link the Makah Tribe to Parametrix Inc. We do know there is a connection to the wave energy project. NOAA should have avoided the impropriety implied in the hiring of a consultant with such deep ties to the Tribe and the “project area”. NOAA should have disclosed these relationships publicly, not kept them under wraps. All references and	to assist in the development of the Cape Flattery Tribal Scenic Byway Scenic Corridor management plan. After the unauthorized hunt in September 2007, members of the public raised questions about additional work Parametrix was performing for the Tribe. When questioned by NMFS about the additional work, Parametrix provided information on the details of the subsequent contract, and affirmed that it had obtained the work for the Tribe in a competitive process. Also as required by law, Parametrix and its subcontractors signed disclosure statements prepared by NMFS as affidavits that there is no conflict of interest by being employed by both the Tribe and NMFS (40 CFR 1506.5c). We accepted the disclosure statements in good faith, and conducted due diligence reviews of Parametrix’s role as a contractor for the Tribe. We concluded that there was no potential for conflict to occur, and further, no biased information could be inserted into the DEIS under our sole supervision. Producing an EIS is the responsibility of the Federal action agency (40 CFR 1506.5(a)(c)). We are responsible for the content and process. We do not consider the relationship between Parametrix and the Tribe to have compromised the integrity of Parametrix’s work product, and in any event are confident that in exercising our oversight we have ensured the document is a product of our analysis. In preparing the new DEIS, we relied on a “blanket purchase agreement” between NMFS and Parametrix to fund discrete products, including updates to the background information about several of the resources, contained in the Affected Environment section. Specific comments regarding the analysis of effects on tourism are addressed later in the responses.

	opinions expressed in this DEIS related to tourism are now suspect and need to be reviewed. The optimistic statement at: 4-106: "Overall, it is reasonable to expect more visitors would be drawn to the area than avoid the area as a result of a whale hunt," and from Table 2-2, "ability to hunt creates opportunity for the Tribe to promote hunt-related tourism," sound like the wishful thinking of consultants who have been hired to promote whaling related tourism, and it is!	
PCPW4	The comments that follow are not the sole opinions of one person or one family. They represent the thoughts and input of the many members of the Peninsula Citizens for the Protection of Whales as well as the great majority of the general public of Clallam County many of whom have signed our petitions (submitted to NMFS in the past). There have been many meetings, discussions and conversations during the short comment period for the DEIS.	Comment noted.
PCPW5	We wish there had been more time, as this Draft is so deficient, so filled with errors, intentional omissions and bias that, without considerable revisions and reassessments, it utterly fails as a prepatory document for the FEIS. It has been impossible to comment adequately in the time period allowed. In part because documents and questions were slow in being provided. It was quite frustrating for Steve Stone, NMFS, to take a week off during the time he was in charge of responding to requests. It is now too late to receive answers to numerous questions put to NMFS regarding references in the DEIS. This DEIS is an insult and affront to all who have spent over 10 years submitting comments to NMFS in good faith and participating in numerous lawsuits. The cart has remained firmly in front of the horse and there seems no way out of Wonderland.	NOAA's regulations regarding NEPA require that the agency provide a 45-day comment period on all EISs (NOAA Administrative Order 216-6). In this case, NMFS provided 98 days to review the draft – an initial 60-day period and a 38-day extension. In response to request for comments on the draft, NMFS received more than 800 pages of comments from over 400 commenters, suggesting that the 98-day comment period allowed commenters sufficient time to read and to respond to the draft. The 98-day comment period is consistent with, or longer than, other comment periods for complex draft EISs prepared by NMFS. For example, for its 1,000 plus page draft EIS on Washington States' forest practices, NMFS provided a 90-day comment period. The nearly 1,200 page draft EIS on the Puget Sound Chinook harvest management plan had a 46-day comment period. Given the amount of review time offered to the public, and the substantial number of comments received during this period, we

			conclude there was adequate time to review and comment on this 2008 DEIS.
PCPW6	**Comments on the Draft**		
PCPW7	RE: were delisted. Comment:	1.1.3 Line 8 and 9 "In 1994, ENP gray whales For the record, the gray whales were delisted in 1994 after NOAA was relentlessly petitioned to do so by The Northwest Indian Fisheries Commission. Other proponents of delisting were oil companies and mid-water trawlers associations. Many conservation groups, as well as the Marine Mammal Commission, opposed the delisting. Most objections then cited habitat threats that have now only worsened. Global warming impacts should mandate the re-listing of the gray whales.	NMFS recently considered a petition to list ENP gray whales under the Endangered Species Act and concluded that a full status review was not warranted (75 FR 81225, Dec. 27, 2010).
PCPW8	RE: Tradition. Comment:	1.1.4 Makah Tribe's Historic Whaling This section contains the first of many references to Renker and Sepez. Renker will be cited (77) times as an authority on the Makah's "need" to whale. Sepez will be cited (37) times as an authority on Makah culture and subsistence use of foods. Nowhere is it mentioned that Ann Renker PhD is the wife of a whaler, and that Jennifer Sepez had a long term romantic relationship with a whaler in Neah Bay (A Whale Hunt, Sullivan 2000). The bias inherent in the work of these two women is inextricably woven into the fabric of this DEIS, and will be commented on in depth. NMFS never should have relied so heavily on biased sources, or kept that bias covered up.	Renker is an anthropologist who has worked among the Makah Tribe for many years. Renker's reports in 1996, 2002, 2007, and 2012 were prepared by her for the Makah Tribe as "Needs Statements" in support of the Tribe's request to hunt whales. They present and summarize numerous sources of information regarding the Makah Tribe's whaling history, and describe and summarize the results of surveys of tribal members. They were reviewed by the United States and made available to interested members of the public via the public involvement process described in the 2008 DEIS (Subsection 1.2.4.1.4, United States' IWC Interagency Consultation). The United States offered these needs statements to the IWC to support the request on behalf of the Makah Tribe for an aboriginal subsistence catch limit. The 2008 DEIS cites all three of these documents as references. We respond to the specific comments about Dr. Renker's work where those comments appear below.

			Jennifer Sepez. Sepez (2001) is the doctoral thesis of a PhD anthropologist, which was reviewed by an academic panel and defended by the author under academic protocols. The subject of the thesis was not whaling, but the contemporary subsistence practices of an Indian tribe. Because Sepez was present in 1999 when the Makah successfully hunted a whale, she documented the Tribe's subsistence use of that whale. The document provides useful observations and conclusions to help inform an analysis of likely effects of the alternatives on the Tribe's ceremonial and subsistence activities. For these reasons, we conclude that the document contains useful and reliable information that is appropriate to include in a NEPA evaluation. The new DEIS continues to cite these documents as sources of information, as well as Renker (2012), which the United States submitted to the IWC as the Makah Tribe's needs statement in 2012. In addition, both the 2008 and new DEIS rely on the work of other cultural anthropologists (Braund 2008, and an independent review by Dorothy Kennedy), and the anthropological literature, to develop the analysis.
PCPW9	RE: Comment:	1-23 footnote: "The annual quota from this feeding aggregation (Greenland bowhead) shall only become operative when the Commission has received advice from The Scientific Committee (IWC) that the strikes are unlikely to endanger the stock." This IWC concern for strikes on a feeding aggregation should also hold true for strikes on the Makah U&A whales. Allowing (7) strikes per year (Alt. 2) presents an extremely high risk for such a small group of whales. "Struck and lost" should go against the quota for resident whales.	Consistent with this comment, the analysis in the 2008 DEIS assumed that a struck whale will die. The new DEIS makes the same assumption. It also includes two alternatives in which all whales that are struck but not landed count as PCFG whales (Alternatives 4 and 6) and two alternatives in which whales that are struck but not landed count as PCFG whales in proportion to the presence of PCFG whales during the season in which the whale was struck (Alternatives 3 and 5).

PCPW10	RE: 1.4.1.2.2 Overview of Requests… Comment: NMFS reports here that "on May 5, 1995, … the Makah Tribal Council notified NMFS of its interest in reestablishing ceremonial and subsistence hunts…" NMFS does not report that on April of 1995, they were notified by Tribal representatives that… "the Makah are planning to operate a processing plant so as to sell (marine mammals) to markets outside the U.S."	The 2008 DEIS considered the Makah Tribe's 2005 request, which does not include the commercial sale of whale products. None of the alternatives examined in the 2008 DEIS or the new DEIS consider commercial sales.
PCPW11	RE: 2.3.3.2.7 Public Safety Measures. "All whalers would participate in … drug and alcohol testing." Comment: There is no explanation of whether tests and standards for passing will be promulgated and conducted by the Tribe or by NMFS. Where will accountability to the public enter into this extremely important monitoring process? Many members of the past crews have had well known drug and alcohol problems (A Whale Hunt, Sullivan 2000).	As with management of other tribal hunting and fishing activities, we anticipate the Tribe will be responsible for such testing.
PCPW12	RE: 2.3.3.2.7 Enforcement "Tribal enforcement" Comment: The Tribal Council has lost all credibility, enforcement wise. In spite of all management plans, rules, laws and promises, the Tribe was unwilling and unable to bring any charge whatsoever against the Sept. 8, 2007 whalers. In particular, the Tribe had promised to prosecute the State's animal cruelty and reckless endangerment laws.	In developing the 2008 DEIS, we recognized the concern raised in this comment, as well as the potential for attempted disruption of any tribal hunt by protesters. Accordingly, the 2008 DEIS included oversight and enforcement costs in its assessment of the economic impact of hunt alternatives. We have re-examined these costs in light of comments received and events surrounding the illegal hunt and its aftermath. The new DEIS includes additional costs of $50,000 per year associated with the potential need for a half-time position within NMFS to monitor hunt management (e.g., Subsection 4.6.3.2.5, Management and Law Enforcement).
PCPW13	Consequently, these important violations went unprosecuted.	The tribal members who participated in the 2007 unauthorized hunt were prosecuted in federal court and two served federal prison sentences. Three served probation.

PCPW14	Additionally, the accusations by the convicted whalers of Tribal Council participation in the decision to have that hunt, casts an even darker shadow on the willingness of a Tribal Council to abide by rules.	Subsequent to the release of the 2008 DEIS, some of the defendants filed documents in federal court alleging that the tribal council knew about and approved the hunt. The new DEIS describes the NMFS investigation of the illegal hunt, including allegations of tribal council endorsement (Subsection 1.4.2, Summary of Recent Makah Whaling – 1998 through 20012). The tribal council has cooperated with the agency as it has proceeded to evaluate the request and conduct an analysis under NEPA. NMFS' Office of Law Enforcement did not find evidence that the tribal government sanctioned the unauthorized hunt. Because there is no credible evidence that the tribal government has acted in bad faith, we will continue to consider the Tribe's request.
PCPW15	In fact, a day before legal whaling was to begin in 1998, (Sept. 30, 1998) the whaling crew approached a whale. According to the Coast Guard, a kill attempt was imminent before it was called off at the last moment. The Coast Guard noted their lack of confidence that the Tribe would play by the rules. From Coast Guard log, Oct. 1998, attached. "The Makah issued a whaling permit late on the 28th or 29th and commenced a hunt on the 30th. The Makah informed the Coast Guard and NMFS, but they did not inform NMFS is the agreed upon manner and NMFS did not have an observer onboard as is required per prior agreements. During the hunt, AP called the Coast Guard to ask if a hunt was taking place. We said yes, in keeping with D13 policy of not announcing hunts, but not giving false information to the press. Prior to dispatching the whale, NMFS found out and asked that the hunt be discontinued. Steadfast was on scene and confirmed that a whale was about to be taken when the Makah ceased the hunt. Upon returning to port, the Makah addressed the press stating that the permit was only a practice permit. Capt __(redacted)__ wanted to let you know that any confusion and/or animosity that may be expressed in the press regarding this incident is pretty much a result of the Makah	Any gray whale hunts by the Makah Tribe would be governed by the MMPA, by regulations adopted by NMFS through formal rulemaking, and by a permit issued under the MMPA and regulations.

	issuing a whaling permit, telling us they issued a whaling permit, then switching and saying it was just a practice permit." Then, from Coast Guard Log, Oct. 11, 1998: "Discussion with tribal chairman confirmed that the Tribe is awar of their responsibilities to make securite broadcast prior to initiating whaling operations and to fly the five pennant from whaling vsl in order for the MEZ to be in effect. CG reps at the meeting were left with the impression that the Tribe would not necessarily comply with these requirements viewing them as compromising their element of surprise." So from the very first attempted hunt to the most recent, a cavalier attitude towards "rules" seems to be in play. How will NMFS ensure compliance in the future from their "co-managers?"	
PCPW16	RE: 2.3.3.2.2 E.N.P Gray Whale Hunt Details. 2-10, lines 25 - 28 Comment: It is mentioned here and elsewhere that the allowable bycatch level of whales in the NMML's photo catalog would be calculated by a certain formula, and a number arrived at using current numbers, NMFS seems to be estimating that two resident whales per year can be harvested by the Makah. As photo IDs are added to the NMML's catalogue every year, will that allowable "bycatch" number go up to 3, 4, or 5? At that point will all considerations for resident whales be moot? If NOAA believes it is possibly for the allowable "bycatch" of identified whales to rise over 2, this must be analyzed and discussed openly. The number of catalogued whales will surely rise with increased efforts by NMFS and the Tribe to make photo ID's. But the few faithful Makah U&A whale numbers have not been shown to have	The subsection of the 2008 DEIS cited in this comment describes the Tribe's proposal, which includes setting an 'allowable bycatch level' using a PBR-like formula. This formula includes a term for minimum abundance, and as proposed by the Tribe, the group of whales used to set that abundance would be ORSVI whales. As noted in the comment, if minimum abundance of ORSVI whales went down, the allowable bycatch level would go down, and if the minimum abundance went up, the allowable bycatch level would go up. Given that surveys of the PCFG have been ongoing for nearly three decades, we consider it unlikely there are currently many 'undiscovered' PCFG whales, and that if the minimum abundance of ORSVI whales increased, it would be the result of an actual increase in abundance and not the result of having identified numerous previously undiscovered whales. In addition, in response to this and other comments, the new DEIS includes table 3-7, showing the minimum abundance estimates of PCFG whales and ORSVI whales. These tables show that the abundance has been stable since 2003.

		permanently risen. A disproportionate number of strikes and struck & lost will undoubtedly affect this small faithful group of 20 or so.	The comment refers to a group of 20 "faithful" whales repeatedly seen in the Makah U&A. Figure 3-6 in the 2008 EIS showed that the number of unique whales seen in the Makah U&A from 1998 through 2005 varied from 8 to 35, that many new whales were seen each year, and seen again in subsequent years, and that the total number of uniquely identified whales in the Makah U&A during this period was over 100. The new DEIS relies on the best available sighting information as reported by Calambokidis et al. (2014; Updated analysis of abundance and population structure of seasonal gray whales in the Pacific Northwest, 1996-2012). That report includes a table summarizing sighting histories of whales seen in the PCFG range in at least one year (Appendix Table 1), tables summarizing the history of mothers seen with calves and calf sighting histories (Tables 12 and 13), and a figure displaying the latitudinal distribution of sighting for whales seen 6 or more times after June 1 (Figure 8).
PCPW17	RE: Comment:	Strikes (5 year and Annual) 2-11 The issues of "strikes" and "struck and lost" is dealt with in a very confusing way throughout the DEIS. However, the bottom line seems to be that it will be acceptable to NMFS if up to 35 whales are killed every five years. At this rate, 70 whales could have been killed between 1998 and 2008. This is a completely unacceptable rate of slaughter which will have a devastating effect on our small resident whale population. What is the meaning of line 23: "If the struck and lost quota is met or exceeded…" How does NMFS envision quotas being "exceeded"?	The 2008 DEIS described, in tables and text, the total number of whales that may be killed under each alternative. The analysis assumed that any struck whale would be killed (whether the whale is subsequently landed, or is lost). Neither the 2008 DEIS nor the new DEIS offers a conclusion as to whether any level of mortality is acceptable. The Tribe's proposal includes safeguards to avoid exceeding the PCFG catch limit, but the Tribe's proposal also implies that more than one hunting party may be active at a time, which could lead to the quota being exceeded. This possibility would need to be addressed in any regulations NMFS ultimately adopted.
PCPW18	RE: Timing of Hunt	2.3.3.2.3 Location of Hunt and 2.3.3.2.4	The Tribe's proposal is designed to avoid the intentional harvest of identified whales by restricting hunting to the migration period. The 2008 DEIS (Table 3-5) reported that 17.9% of the whales present in

	Comment:	To proclaim that hunting among the near shore feeding sites during April and May is "designed to avoid any intentional harvest of gray whales that have been identified within the PCFA Survey area" simply defies common sense and the evidence. April and May represent the middle and end of the arrival to Washington State's near shore coast of the resident whales and the mothers and calves, two categories which NMFS claims to want to protect from death and harassment. The Tribe must go offshore to target migrating whales.	the coastal portion of the Tribe's U&A prior to June 1 are PCFG whales (Table 3-5). The new DEIS describes new information suggesting that about 33% of all whales sighted in the coastal portion of the Tribe's U&A before June 1 are PCFG whales (Subsection 3.4.3.4.2, PCFG Seasonal Distribution, Migration and Movements). In the same subsection the new DEIS also discusses more thoroughly the timing of the migration and the potential presence of migrating mothers and calves in the coastal portion of the Tribe's U&A during April and May. The new DEIS also includes the alternative of an offshore hunt, in response to this and other comments (Subsection 2.3.3, Alternative 3 (Offshore Hunt)). It also includes two alternatives that would count any whale struck and lost as a PCFG whale (Alternatives 4 and 6).
PCPW19	RE: Comment:	Securing and Towing the whale 2-14 … "The Makah Whaling Commission be able to amend tribal regulations periodically…" This Makah request is unanalyzed as to the potential to affect changes to policies that the public has been allowed to comment on, and is unacceptable. Could these "changes" include location of hunt? Timing of hunt? Method of hunt? Weapons? Vessels used? NMFS must reject this request or analyze it. What "changes" are potentially contemplated?	The full statement in the 2008 DEIS is "The Tribe proposes to conduct research and development to refine hunting methods further. After consultation with NMFS, the waiver request proposes that the Makah Whaling Commission be able to amend tribal regulations periodically to improve the safety, effectiveness, and humaneness of the gray whale hunt." (Subsection 2.3.3.2.5, Overview of Proposed Hunting Method (Element Common among Action Alternatives)). We do not understand the term "methods" to refer to hunting seasons or areas, but rather equipment and techniques. It is conceivable that over time there could be improvements to hunting methods. If we adopt regulations authorizing a hunt, the public would have an opportunity to comment on any permits issued under those regulations through the public comment process provided for in the MMPA. Tribal regulations would need to be consistent with NMFS' regulations.
PCPW20	RE:	2.3.3.2.6 Whale Product Use and Non-Commercial Use and Distribution.	If we approve the Tribe's request and authorize a whale hunt, we will promulgate regulations that address the use of inedible parts.

	Comment:	NMFS must clearly list what "inedible parts" can be used, and what handicrafts will constitute "authentic articles." Along with the new declaration that the meat itself can be freely passed off the reservation, the floodgates will be opened on our Peninsula for a whale product free-for-all, with no control or enforcement possible. It will be impossible to define any illegal possession or use of whale products, as anyone can fit themselves into one of the categories allowed to "share" the meat: "familial, social, cultural, or economically tied." While this may make some sense among the isolated villages of the high north, the Makah Reservation is connected by roads and waterways to the rest of the world.	
PCPW21		The Treaty of Neah Bay, 1855, specifically bans The Makah from trading with "Vancouver's Island." Although the tribes across the Straits fit all the above criteria, will the Treaty preclude the sending of whale meat to Canada?	If we approve the Tribe's request and authorize a whale hunt, we will promulgate regulations that address the sharing of whale meat.
PCPW22	RE:	2.4 Alternatives considered but eliminated from detailed analysis. 2.4.4.2 Hunt outside areas frequented by identified whales. Comment: This very important and often suggested alternative seems deliberately mis-titled to facilitate its dismissal. This alternative has always been proposed by commenters as: "Hunt offshore in the actual migratory corridor." This is an extremely reasonable and problem-solving alternative, as it addresses the gun-safety issue by getting the .50 cal at	In response to this and other comments, the new DEIS includes an alternative that would require the Tribe to hunt whales at least 5 miles from shore (Section 2.3.3, Alternative 3 (Offshore Hunt)).

		least 3 miles off the shore, and can quite reasonably be expected to avoid the great majority of whales who are feeding and resting inshore, particularly the mothers and calves, and most resident whales. Whaler's safety is assured by the presence of multiple chase boats and support boats. NMFS did not properly phrase or address this suggested alternative, which NMFS well knows would sooth many concerns about shooting resident whales at their feeding sites inshore and harassing mothers and calves. We request a reconsideration of this alternative, properly framed as a hunt in the offshore migratory corridor. Olympic National Park should be consulted for their input on this. Park visitor safety would be ensured by an off-shore hunt.	
PCPW23	RE: Comment:	3.4.3.1.4 Seasonal Migrations 3-66 "There are no direct observations that establish the timing of either phrase of the northward gray whale migration through the project area… it is reasonable to estimate that… migrants in the second phase would be in the project area from roughly early May until June." This "rough estimate" conveniently estimates that mothers and calves don't arrive along Washington until May. This is not "reasonable," and there have been many "direct observations," considering that the Quileute tribe, just south of the Makah U&A, has a brisk and enthusiastic season from early April until May based on the arrival of the mothers and calves. Hundreds of people flock	In response to this and other comments the new DEIS describes the timing of the migration in greater detail (Subsection 3.4.3.4.2, PCFG Seasonal Distribution, Migration and Movements).

		to La Push to see the calves playing in the breakers while the mothers feed close by. April must be considered the arrival of phase two, 90 percent of which (3 – 67 line 8) is "cow-calf pairs."	
PCPW24		Lines 18 – 30 page 3-67 documents the offshore migratory corridor as most north-bound migrants cut from near-shore Oregon to mid Vancouver Island. Average offshore distances for Phase I whales reported as 7.3 miles by Green et al (1995). Southbound migrants averaged 15.7 miles offshore (3-68). This information reinforces the argument that whaling should occur off shore, and that hunting in April and May will target many mothers and calves with harassment as they hug the coast. The only other whales who would logically be in the "project area" would be resident whales and desperately hungry north-bound migrants, taking a chance on locating a patchy feeding site.	The commenter has selected limited citations from this passage to bolster the argument that whales close to shore in the Makah U&A during April and May are likely to be mothers and calves or identified whales that will spend the summer feeding in the PCFG range. For the new DEIS, we re-examined the evidence regarding migratory distance from shore for any particular category of whale (including new information) but found insufficient evidence to draw any conclusions about the likely offshore distribution of PCFG whales (Subsection 3.4.3.4.2, PCFG Seasonal Distribution, Migration and Movements).
PCPW25	RE: Habitat Use. Comment:	3.4.3.3.1 Summer Range Distribution and This important section is very confusing, with Tables 3-2, 3-3 and 3-4 being almost impossible to decipher. What does come across, though, is one inescapable reality: There are a very small number of whales who return most years to the same feeding sites on the outer coast in the Makah U&A. That important number is hard to extricate from the mish-mosh of irrelevant data and charts, but seems to be between 20 and 30.	The purpose of Tables 3-2 through 3-4 in the 2008 DEIS was to provide information about how many new whales recruit into the different survey areas within the PCFG each year. This information was central to our evaluation of the likely impact of a tribal hunt. The new DEIS relies on the best available sighting information as reported by Calambokidis et al. (2014; Updated analysis of abundance and population structure of seasonal gray whales in the Pacific Northwest, 1996-2012). That report includes a table summarizing sighting histories of whales seen in the PCFG range in at least one year (Appendix Table 1), tables summarizing the history of mothers seen with calves and calf sighting histories (Tables 12 and 13), and a figure displaying the latitudinal distribution of sighting for whales seen 6 or more times after June 1 (Figure 8). This should aid

			the public and NMFS' decision-makers in better understanding how gray whales use these feeding areas during the summer.
PCPW26	RE: Comment:	3-95 "The number of these identified whales is a small fraction (less than 1 percent) of the total ENP gray whale population, almost all of which migrates through their survey areas on the northward migration. If these whales are randomly mixed… Dec. 1 through May 30 less than 1% of encounters between whales and Makah hunters… would be one of these identified whales." This misleading calculation minimizes possible impacts of hunts on Makah U&A whales, disregards many facts cited elsewhere in the DEIS: ● The favorable weather conditions for a hunt will occur in April and May at a time when most of Phase I has already passed Washington. ● Most whales in Phase I and many in Phase II are about 5 miles offshore, not in the near shore waters of all previous hunts and hunt attempts. ● This leaves a much smaller pool of whales for the hunters to "encounter", which will include unknown percentages of resident whales, mothers and calves, and hungry migrating whales who are stopping to eat on the way north. The "hunters" have never targeted the migratory corridor off shore, only the feeding areas very close to shore.	On the page cited in the comment, the 2008 DEIS states that <u>if</u> PCFG whales occurred in the Makah U&A in proportion to their numbers in the overall population, only 1% of whales in the Makah U&A prior to June 1 would be PCFG whales. The discussion on the same page notes, however, that <u>this is not the case</u>. The evidence shows they are <u>not</u> randomly mixed and in fact the evidence available for the 2008 DEIS indicated 17.9% of all whales present in the Makah U&A during May are PCFG whales. This discussion in the new DEIS has been modified to reduce potential confusion (Subsection 3.4.3.4.2, PCFG Seasonal Distribution, Migration and Movements). In addition, the new DEIS reports the findings in Calambokidis et al. (2012) that about 33% of all whales in the coastal portion of the Tribe's U&A during March-May are PCFG whales.

		It is logical that there will be a much higher than 1% chance that these vulnerable whales will be targeted. NMFS needs to provide a more realistic estimate of the number and make up of whales encountered in the Point of Arches/Cape Alava area in April and May.	
PCPW27		This section confirms the 9th Circuit Court's interest in the well-being of the Makah U&A whales, as well as their extremely low numbers, less than two dozen.	As described above, the 2008 DEIS reported 40 identified whales observed the Makah U&A in more than one year.
PCPW28		If NMFS is claiming that the numbers are rising slowly in all the survey areas, that must mean that none of the areas have reached its OSP. If the Makah U&A has still not reached its OSP, it must be hard for a randomly recruited whale to succeed at finding enough productive feeding sites to be satisfied with the area. This would explain why many whales are "newly seen" but few are "seen again." The calves that learn the feeding areas from their mothers have a great advantage in The Makah U&A. For example: Cascadia's whale #107 was identified as a calf in 1994 with his mother whale #43 who was identified in 1984 and seen many times over the years as has her calf #107. All this begs the question: What is the OSP of the Makah U&A? Why has NMFS not analyzed this important f actor? Before the Makah begin killing and harassing whales away from these feeding grounds every spring, it is vital to know how many whales should or could be utilizing this area.	The 2008 DEIS did not assert that the number of whales in the survey areas was slowly rising, but instead surmised that the data showed many new whales recruiting into the group every year (Subsection 3.4.3.3.1, Summer Range Distribution and Habitat Use). The new DEIS includes an updated discussion of PCFG stock structure and recruitment rates (Subsection 3.4.3.4, Pacific Coast Feeding Group (PCFG) of Gray Whales). The comment contains an implied question about the carrying capacity of the Makah Tribe's U&A – that is, how many whales it can support during the summer feeding season. That is unknown, but it is likely that the carrying capacity of summer feeding areas changes over time. This subject was more fully discussed in the 2008 DEIS, including examples of specific areas with variable distribution during the summer feeding period (Section 3.4.3.3.1, Summer Range Distribution and Habitat Use).
PCPW29	RE:	3.6.3.3 Summary of Economic Effects	Comment noted.

	Comment:	"No quantitative information is available concerning the economic effects of the Makah Tribe's practice whale hunt exercises in late 1998…" (line 3-4 3-196) "Practice whale hunt execises?" The Tribe should have told the Coast Guard, The National Guard, The FBI, The Clallam Country Sheriffs, The Whale Task Force, and all those who spent untold resources "protecting" their right to go hunt a whale that fall that this was just a "practice exercise." They should have told the hordes of media workers who left their families to live in Neah Bay to be on scene for "the hunt." They should have told all the protestors who the Tribe found so annoying and "threatening." They should have told Paul Watson he didn't need to park two ships in the bay. Or is this new labeling of the many false starts, tribal infightings, violence against protestors of 1998 a way of minimizing the many fiascos of the Fall of 1998 hunt season?	
PCPW30	RE: Comment:	3.8.3 Existing Conditions "According to a 2001/2002 household whaling survey… 93 percent responded that the Makah Tribe should continue to hunt whales…" Statements such as above, throughout the DEIS, must be stricken or reevaluated by an unbiased panel of anthropologists and statisticians. Renker's results are simply not trustworthy, tainted throughout all the Needs Statement with the inherent bias of her personal pro-whaling position.	The new DEIS clarifies that not all those surveyed responded to the questionnaire (Subsection 3.8.3, Existing Conditions). The text now makes clear that for the 2001/2002 survey, the numbers reported are a percentage of those who responded to the surveys, not a percentage of tribal membership or even a percentage of those surveyed. We agree that where the draft EIS relies on the 2001/2002 survey as evidence of the level of support for and interest in whaling within the Makah Tribe, the EIS should not overstate the conclusions. The new DEIS has been revised accordingly. To further ensure that NMFS decision-makers give appropriate weight to the information from Renker's household surveys, we have added to the new DEIS a discussion of the limitations of the data

		The world and the general public have been swayed by her results, showing an almost 100% unified tribe behind whaling. In a Lynda Mapes Seattle PI story of 2002, these questionable statistics are passed on without question to a wide local audience: "… 163 randomly selected respondents… were surveyed… The survey found 94 percent of respondents believed resuming whale hunts had affected the tribe positively…" And to quote the biased viewpoints of Keith Hunter, non-Makah pro-whaling activist who lived on the reservation for a short time is completely insupportable. (More comments on Renker results at 3.10.3.51)	from the surveys (Section 3.8.3, Existing Conditions). We have also revised that discussion to make clear that Renker has lived on the reservation for many years and has close ties to the community. In addition, where commenters cited additional reliable sources providing contrary information, those sources have been included. Parametrix retained two anthropologists to assist with the draft EIS – Dr. Dorothy Kennedy and Dr. Stephen Braund. Dr. Kennedy reviewed the material in the 2008 DEIS and assisted with responses to comments. Dr. Braund reviewed the anthropological sources, visited the Makah reservation, interviewed tribal members, and prepared drafts of his findings, which were edited by NMFS staff. Dr. Kennedy's and Dr. Braund's credentials are cited in the "List of Preparers" included in the 2008 DEIS and new DEIS. These professionals relied on numerous sources in working with us to prepare the 2008 DEIS. Their material is incorporated into the new DEIS.
PCPW31	RE: Comment:	3-214 lines 27-32 This section points out a couple things. Whalers were paid to practice (and attend meetings), which seems to add a commercial incentive at odds with "spirituality." And the changing nature of the Makah Tribal Council is highlighted. The makeup of the Council can change every year. The judges of the 9th Circuit Court pointed out the problematic nature of making agreements with any particular council. How will NMFS ensure the continuity of commitments made by a particular council?	Any gray whale hunts by the Makah Tribe would be governed by the MMPA, by regulations adopted by NMFS through formal rulemaking, and by a permit issued under the MMPA and regulations. The Makah Tribal Council also recently adopted new whaling regulations and these are described generally in the new DEIS (Section 2.3.2, Proposed Action) and included in full in Appendix B, of the new DEIS. The proposed regulations contain a variety of provisions intended to ensure compliance by the Tribe.
PCPW32	RE: Comment:	3.10.3.1 Makah Archaeological Resources Connected with Whaling Much of this section comes from Ann Renker and her sources. In both her 2002 and 2007 Need Statements, written to support a gray whale quota	In response to this comment, we asked Parametrix to retain Dr. Dorothy Kennedy to address certain questions and to review the 2008 DEIS. Regarding the assertion that Makah occupation of the Olympic Peninsula prior to 500 years ago is uncertain, Dr. Kennedy provided a

		request by U.S. at IWC, Ann Renker does her best to maintain the Makah story line that the Tribe has occupied the North Olympic Peninsula for thousands of years. Never does she mention that this version of the "mists of time" scenario is seriously questioned by numerous scholars. Specifically, there is ample evidence that the Makah usurped Quileute domination of the Peninsula possibly as little as several hundred years ago. Yet Renker pummels the reader with dates, painting a misleading picture of history. She mixes what is known about the pre-contact whaling culture of the Vancouver Island Nootka (relatives of the Makah) with references to the whale bones and artifacts found in midden layers on the Peninsula. These bones and artifacts cover a wide range of dates, and it has not been established that the older layers (pre-400 years ago) represent Makah occupation. Excerpts from <u>Needs Statement</u> 2007: Pg. 4: "whale hunting… for at least 1,500 years before present day." "750 years before (1,500 b.p.) Makah used drift whales." Pg. 5: "for 1,500 years, whale hunting…" Pg. 6: "… 2,000 year old subsistence culture."	lengthy analysis. In that analysis, she noted that two competing views were presented to the Indian Claims Commission in the 1970s as to whether Ozette village was autonomous or was a principal Makah village. The Commission accepted the view that Ozette village was part of the Makah Tribe at the time of the 1855 Treaty. The Commission also relied on the estimate made at the time, without the benefit of carbon dating and prior to extensive excavation, that Ozette village had been occupied for about 500 years. Dr. Kennedy also reviewed information available subsequent to the 1970s and the Indian Claims Commission findings. She concluded that the available evidence supports "Makah occupation of some places on the Olympic Peninsula at the time of the Treaty and back into the pre-historic period, some say anywhere from 500 to 1,000 years." Dr. Kennedy's analysis concluded: What we can say with confidence is that sites on the Olympic Peninsula associated with the Makah at the time of the 1855 Treaty show evidence of continuity of occupation extending from deep in the past. The Aboriginal residents of these sites practised[sic] whaling in a manner consistent with that described ethnographically for the Makah. Such lifeways were not restricted to the Makah, for these people practised a culture largely shared with their immediate neighbours to the north and south. I have not seen evidence that would discredit the assertion that the immediate ancestors of the Makah resided on the Olympic Peninsula at the time of initial contact, and likely for many, many generations before this. Certainly they resided here at the time of the 1855 Treaty. In conclusion, it is my opinion that both the ICC materials and the results of the Ozette investigations are two pieces in the puzzle of discerning Aboriginal occupation that remains to be completed—

	Pg. 11: "Archaeological data from…Makah village of Wa-atch indicates whale bone present some 3,850 +/- 75 years before present." "…data from Ozette site… 1,500 years of continuous whale use." Pg. 26: "…Makahs and their nu-ca-nu relatives hunted whales… at least 1,200 years" Pg. 55: "For approximately 2,000 years the Makah people relied on… the whale." Pg. 61: "The food products of the gray whale… have sustained the Makah people for over 2,000 years." The controversy over who occupied the Olympic Peninsula when, surfaces in the works of scholars referenced in Olympic National Park anthropologist Jacilee Wray's 1997 book – <u>Olympic National Park Ethnographic Overview and Assessment:</u> According to information provided for the Indian Claims Commission, the Makah came to Cape Flattery "from	one of these two sets of data alone cannot be said to be the more "persuasive scientific information" to support assertions of Makah occupation of the Olympic Peninsula. In addition to this analysis, Dr. Kennedy reviewed the 2008 DEIS and provided a number of edits relevant to this comment, in particular changing references from "Makah Tribe" to "aborigines" or "aboriginal people" in passages discussing the prehistoric period, including the prehistoric occupation of Ozette village. These recommendations are incorporated into the new DEIS (Subsection 3.10.3, Existing Conditions).

	Vancouver Island about 500 years ago." (ICC 1970:172) A story related to Ruth Kirk by a Nuu-Chah-Nulth elder (Kirk 1986:23-24). Powell states that the Quileute formerly occupied the entire northern area of the Olympic Peninsula, but were dislodged by the Makah and Klallam J.V. Powell, linguist and Vickie Jensen <u>Quileute: An Introduction to the Indians of La Push</u>, 1976. Reagan mentions an ancient midden heap 16 miles up the Hoh… Reagan believes that the Quileute once "owned" the entire Peninsula. Albert B. Reagan <u>Archaeological Notes on Western Washington and Adjacent British Columbia</u>, 1917. Reagan notes that the fishing grounds of the Quileute are at Cape Flattery and states that at one time the Quileute/Chimakum had complete control over the greater part of the Peninsula… The Makahs captured the Quileute settlement of Warmhouse, between Cape Flattery and Neah Bay; then captured villages at Tsooez, Waatch and headed toward Ozette… Albert B. Reagan	

	Some Traditions of the West Coast Indians, 1934. References to the "Makah/Nootka" invasion of the Peninsula are numerous and describe a bloody village by village take over that was still being vividly retold by Tribal elders in the 1800's. Helen Clark, who worked for the Women's National Indian Association in Neah Bay during the first decade of the 20th century, recorded many oral histories. Following is an excerpt from her rare manuscript entitled, "Chips From An Old Block." "Many years ago… the little village of what is now known to Indians as West Coast, was swept away by… a tidal wave. The natives determined to seek another home. All the families but one sailed southward until they reached an Island at the mouth of the Straits (of Juan de Fuca). These homeless Indians, afterward called Makahs, besieged this island (Tatooche)… starved the natives into submission and took possession. Part of them went south and settled at what is now called Osette.	

		The rest crept up to a little village on the bay. Although it was already occupied by a peaceful people, they determined to possess it. Stratagem, bloodshed, and active warfare soon gave them homes they had not built, and fish they had not dried. As was customary at the time they killed the old people and kept the younger ones as slaves." In summary, it is far from accurate for anyone to state as unequivocal fact, that the Makah have occupied the Peninsula beyond 400-500 years.	
PCPW33	RE: Comment:	3.10.3.5.1 Makah Whaling. Lines 24 – 26: "… some of those individuals taking a leading role in revitalizing (whaling) are from whaling families of high status who trace their ancestry to men who formerly hunted whales." One thing that is repeatedly mentioned in Renker's Needs Statement 2007, is the "complex pattern of social stratification" that is, unarguably, one of the hallmarks of the Nootka/Makah whaling culture. Some examples from the document (pages referenced are from Needs Statement 2007):	Dr. Kennedy reviewed this comment and provided the following response: The distinctions between "caste" and "class" are well discussed in the anthropological literature. Modern scholarship refers to the Makah, along with their Nuu-chah-nulth neighbors, as being "class-divided"—they are examples of societies having class, not caste. They had three named and ranked strata: titleholders, commoners, and slaves. Descriptions of social organization indicate that villages on this part of the NW Coast contained a number of cognatic descent groups, each headed by a titleholder, whose inheritance was believed to be traced to the founding ancestor. Inheritance of the title was by primogeniture. Oldest siblings and oldest children were titleholders, while junior siblings and children of such were commoners. Among the accounts

	pg. 10: "Emphasis on achieved wealth as measured in property and hereditary rights." "Complex pattern of social stratification." "Integration of rank and kinship as the basis for social interaction." pg. 11: "A highly regulated system of ceremonial and economic privilege including ownership of, and control over, … whaling grounds, fishing grounds and other sections of ocean and river property." pg. 15: "A whaling crew consisted of a chief, or the whaler… The whaler owned the canoe and the equipment… he also owned important ceremonial privileges through his hereditary status…" "Whaling was restricted to the men who… possessed the hereditary access to the position…"	where this stratification is described is the book by Leland Donald (1997:277) Aboriginal Slavery on the Northwest Coast, which focuses on the lowest possible class, slaves, but includes discussion of stratification generally. In the NW Coast's class-divided societies, each descent group has both titleholders and commoners, and each strata has differential access to resources. While it is certainly true that the head chiefs owned more resources and opportunities than the lower chiefs, and the commoners possessed none at all, Donald points out that both titleholders and commoners obtained their primary social identities as members of descent groups. Thus, the treaty was signed with headmen of descent groups that included both whalers and fishermen, and should not be thought of as representatives of only a "caste" of whalers.

		pg. 18: "strict protocol governed the butchering process… the distribution of the whale reinforced the Infrastructure of Makah society each time the process occurred." pg. 19: "The highly stratified nature of the Makah social system was a mirror of the status structure involved in the entire process of the whale hunt… whaling actualized the social organization of Makah society." "Whalers, or 'headmen,' were ranked at the top of the pyramid of social standing." "The anthropological literature tends to concentrate on the role of high-status men in the whale hunt… The women who married whalers dominated the top of the female analog to the male status pyramid." "Marriages between (two whaling families)… united two powerful, wealth families and ensured that	

	consolidated social, ceremonial, and political power would be transmitted to another privileged generation; this procedure is common to… royal families." pg. 20: "anthropologists were most interested in the ceremonial, social, and work activities of the privileged classes…" The United States did not make a treaty with another government. The United States made a treaty with whalers. The whalers *were* the "headmen." Whaling is what made them and their families the wealthy, powerful, privileged class, in control of strategic locations on and off shore. Of course they demanded the right to continue whaling. Their very lifestyle as chiefs depended on it. But everyone couldn't be a whaler. The "complex pattern of social stratification" was really a caste system, with sealers and fishermen ranked below whalers, and commoners and slaves at the bottom of the heap. The U.S. government signed a treaty with primarily, the "royal families." And in the family memories of some contemporary	

		Makah, these old claims to status are not forgotten. "Makah people had never stopped educating their children about their respective familial whaling traditions" (pg. 34). It should be no surprise that the prime movers of the "back to whaling" crusade are descendants of the whalers. Keith Johnson, a whaling family member and former Tribal Councilman, said in a Peninsula Daily News interview on Sept. 27, 1998: "(Whaling)… brings in all of the cultural aspects of our heads of family… and lifts that family up in its identity as a whaling family." That same fall in 1998, John McCarty, grandson of the last Makah Whaling Chief, and Makah Whaling Commissioner, interviewed on KIRO-7 TV said, "There could be with the lesser families that, uh, like I don't like to call them slave families, but the slave families and the less prominent ones, that there might be a feeling of what's going to happen now?" Renker bemoans "the introduction of American values" in the 1800's such as "the American philosophy of social equality" and	

		how that social equality "made it difficult for Makahs to continue to staff and organize whaling canoes, and therefore households, according to the ancient patterns" (pg. 30). Social equality is considered by most Americans today to be the hallmark of a free and just society. Are the whaling families actually hoping for a return to a traditional status and power structure that is above the shifting winds of the democratic process?	
PCPW34	RE: Comment:	3.10.3.5.1 Makah Whaling This section describes Ann Renker's Household Whaling Surveys, HWSI and HWSII, her methods, results, and excerpts from her Needs Statements. These topics raise so many questions it is hard to know where to start. We'll start with Ann Renker PhD., herself. While she is no doubt a fine person and an asset to her adopted home of Neah Bay, she is in no way an objective or neutral scientist. She is, in fact, married into a very prominent and activist whaling family, and her Needs Statements unabashedly reflect their support of whaling. Did NMFS critique the Needs Statement or have them reviewed by impartial anthropologists?	As reflected in the List of Preparers, we employed two cultural anthropologists to assist in preparing the 2008 DEIS – Dorothy Kennedy and Stephen Braund. These two experts contributed to sections of the document.
PCPW35	RE: Comment:	HWSI, 2002 It's a compelling premise for a community survey, to frame it in terms of defending one's Tribe from "outside attacks." "The expressed purpose of the survey was to address concerns of some non-tribal citizens who believed that the Makah Tribe did not	Comments noted. As described above, the new DEIS has been revised to more accurately reflect the circumstances surrounding Dr. Renker's work and the results of her surveys.

		support whaling and wasted the whale products received from the 1999 hunt." 3-241 One would think Tribal members would put differences aside and really pull together to show unity in the face of these comments from "non-tribal citizens." Jennifer Sepez (Sepez 2001) informs us that, "Typically, face to face interview surveys in the U.S. have a refusal rate of 5% - 20%." Her own survey in Neah Bay had a 10.9% refusal. Renker had a 31% refusal rate for her survey. Did NMFS ask Renker why that might be? The whaling proponents have done their best over the years to stifle dissent. Those who spoke out against whaling were threatened and intimidated. Renker even uses this Needs Statement as a platform to falsely accuse four dissenting tribal members of being responsible for all protests against whaling! (pg. 36) Considering the conflict within the Tribe over whaling, it is not surprising that in Household Survey (I) 2002, 58 out of 217 contacted households (31%) refused to participate in the survey. There is no effort to explain this large number. Four additional households were determined by the surveyors to be anti-whaling, so to "minimize external influences" they were not interviewed, and their surveys were filled out for them "to answer negatively." When 31% of the survey contactees removed themselves from the sample pool, "random sampling" was no longer random. It had at that point self-selected for cooperation with the Makah	

		Cultural Resource Center, whose oft-stated desire is the return to whaling. Add the 31% to the 5.5% who were scored as "anti whaling" and this is a total of 36.5% who are at the least, unwilling to help with the survey, and at the most anti-whaling. So to imply a 93.3% approval rate for whaling in 2002, is not honest, is not science, and disregards the implications of the election results of 2000. After the whale hunt in 1999, voter frustration with whaling swung tribal policy in a different direction in 2000 and 2002. New leaders slashed funding for whaling, arguing other needs were more pressing. With no budget, the Makah Whaling Commission was shuttered in 2002, and angry whaling families were told to go ahead at their own expense. No more tribal subsidies for family hunts. Keith Johnson said he was voted off the council after the first hunt amid criticism that the Council had spent too much time and money on whaling. "It was really clear that whaling was a dead horse," he said. Lynda Mapes Seattle Times April 15, 2002 Nowhere does Renker, or the DEIS, analyze, discuss or even mention the "dead horse" period, but Keith Johnson's startling statement throws open a small window to the large divisions in Neah Bay over whaling.	

		It is quite clear that the following Letter to the Editor that ran in the Peninsula Daily News on April 11, 1999 must speak for a large percentage of the Tribe: "I am a Makah and I am against whaling. I respect the whale's right to swim free. Killing whales will not wipe out all the ills of the reservation. It is not a cure for addictions; drugs or alcohol. … Hundreds of us do not want to see these wonderful creatures killed. Many of us believe there is more to be gained by saving the whales. In my humble opinion, this whaling issue was never brought to a ballot vote by the Tribal Council. If it was put to a ballot vote, I believe that we would not be facing this heart breaking issue." ***A Makah Tribal Member,*** ***Neah Bay*** So where does this leave Renker's "93.3% approval," touted in Table 3.32 and throughout the DEIS? NMFS must reevaluate the misleading results and methodology of the Household Whaling Surveys, and explain to the public why this biased work was	

		supported uncritically and submitted to the IWC shamelessly. How did Renker achieve such a response from a "random sampling"? With all the "refusals" out of the picture, who were her "respondents"? One cannot get a clear picture without all the data from the surveys. Renker has carefully cherry-picked the answers and percentages that support her conclusions and that she wants the readers of the Needs Statements to see, and the DEIS is happy to do the same. Renker's handpicked data is strewn liberally throughout the Draft reinforcing over and over the message that the Tribe overwhelming wants whaling, wants whale meat. Her "random sampling" says so. We found in our files a draft version of the 2002 Needs Statement. This old version happens to have a Household Survey filled out with Renker's data results for each question. A handwritten note at the top advises: "Will not be included as a part of Needs Statement. Will be available separately upon request. FYI for now." A cover letter addresses the Draft and survey data to Rolland Schmitten, March 8, 2002, CC: Michael Tillman, Chris Yeats and Roger Eckert. When the data results from questions 37 and 38 of the first Household Whaling Survey are compared to the numbers in Table 3-34 in the DEIS, interesting facts emerge. Sixteen (16) respondents to the HWSI identified themselves as members of the 23-member Makah Whaling Commission. Seven	

		(7) members of respondents' households also were counted as MWC members. 16 + 7 = 23. So, somehow, all Makah Whaling Commissioners' households were surveyed. Table 3-34 lists thirteen (13) members of the whale hunt crew. The HWS lists ten (10) respondents and eleven (11) household members on the hunt crew. With twenty-one (21) crew members in the survey, that certainly must include all thirteen (13) claimed by Table 3-34. Twenty-two (22) respondents identified themselves as support crew, as did nine (9) household members. That total of thirty-one (31) must certainly include members of the tow crew on the one fishing boat that pulled in the whale, as well as twenty or so others who worked in a "support crew" capacity. So, we have a "random sampling" that happens to include the opinions of: ● The entire Whaling Commission ● The entire hunt crew and almost enough for a second crew ● All tow-crew members plus an additional 20 or so "support crew." It strains credulity beyond the breaking point to believe that these respondents were "randomly chosen." The survey needed to achieve a pre-determined outcome: An overwhelming Tribal desire for whaling and evidence that the meat and blubber were utilized. This seems to be ample motivation to bias the sampling, and the magnitude of the bias does	

		falsify the conclusions. The survey results were not left to chance, and the fact that the complete results were not included in the Needs Statement is a big red flag. NMFS did see the results. What were Schmitten et al's comments to Renker upon receiving the Draft? There needs to be a complete and thorough review of Ann Renker's Household Surveys and the way her results were used to mislead the IWC in the Needs Statements, and the American public in the DEIS. The fact that Renker's survey results "were supported in an independent survey by anthropologist Jennifer Sepez" (3-242) is not reassuring, only more troubling, given the romantic relationship Ms. Sepez carried on with the captain of the 1998-99 hunt seasons as he helped her with her research for her doctoral thesis. (A Whale Hunt, Sullivan 2000) Did Ann Renker and Jennifer Sepez keep these relationships with whaling families in Neah Bay away from NMFS, or were they truthful and NMFS used their work without question anyway? If that is the case, the public should have been informed of the possible conflicts of interest inherent in their work. It is an important component in analyzing the reliability of the data in this DEIS, and information that is only available to commentors living very close to the reservation. NMFS has relied quite heavily on Ann Renker's Needs Statements to make the case for the Makah's "nutritional and cultural	

		need" to the world, and continues to do so. Dissent within the Tribe has been stifled, blame on "outsiders," and purged from or minimized by survey results in a methodical and dishonest way. It seems that NMFS has chosen to look the other way and not to ask questions or challenge findings in Renker's work. This does a disservice to a large faction of the Tribe, to the neighboring communities, and to the ones who NMFS is most charged with protecting: The gray whales. There is no great need for whaling or whale meat in Neah Bay. As on Makah elder has repeatedly stated: "We are not hungry. We don't need dead whales to know we are Makah." Whaling will be a novelty pastime for the rich. Divorced from its original cultural and nutritional importance, it will be an ego-driven exercise, marking time until the hoped for commercial harvesting materializes.	
PCPW36		NMFS can deny that this is likely, but has never put forward any binding assertion from the Tribe that they will not resume commercial whaling. In fact, it is the reverse: the Tribe has always stated that their treaty reserves for them the commercial use of marine mammals, and NMFS has remained silent on this topic, in spite being asked to clarify this issue. This current plan for an "open door" whale-meat policy will no doubt lead to money changing hands for this "nutritious and	The Ninth Circuit in *Anderson v. Evans* held that the Makah must comply with the processes in the MMPA in order to hunt whales. We have always maintained that the Whaling Convention Act applies to tribal whale hunts. Both the MMPA and WCA prohibit commercial whaling. Our position is that the Tribe may not engage in commercial whaling. The Tribe's proposal does not include commercial sale of whale meat or blubber and none of the alternatives in the 2008 or new DEIS contemplate commercial sales of whale meat or blubber.

		healthful" food. Smuggling of whale meat to anywhere in the world is quite feasible and maybe an irresistible temptation, given the monetary value of whale meat in Japan.	
PCPW37	RE: Comment:	3.10.3.5.1 Makah whaling, 3-24 "Makah whalers reported enduring intense physical and spiritual training." Author Robert Sullivan spent a great deal of time with the whaling crew in 1998-1999. His book A Whale Hunt (2000), had no preconceived agenda but by documenting his observations of crew preparations, inadvertently de-bunks the above statement from Braund. Braund is a Parametrix sub-contractor who paid a visit to Neah Bay in 2007. He spoke to whaling family members and found, no surprise, a support and need for whaling.	Comment noted.
PCPW38	RE: Comment:	3.10.3.5.3 Symbolic Expression of Whaling. This section serves to remind us that most of the world has adopted images of whales in art of every media to symbolize a renewedl effort to care for and protect nature and the environment. Sculpture, T-shirts, photos, paintings, "doodles" by children and even tattoos have been produced by the millions to reinforce the huge global cultural/spiritual connection to living whales. It is the feelings, sensibilities, and hopes and dreams of these – the great majority of people here and everywhere – that will be harmed and diminished by this unnecessary scheme to benefit from the slaughter of whales.	Comment noted.
PCPW39	RE:	3.10.3.4 Makah Historic Whaling 3-228 lines 11-13 "Chiefs had two methods of obtaining	Comment noted.

		whales: either hunting them from a canoe on the open water and harpooning them, or using ritual to entice them to die and float ashore… thereby permitting the chief to avoid the dangers of hunting at sea."	
	Comment:	We would propose this as an alternative. Cultural, safe, lots of rituals and the end result is a dead whale on the beach ready to be butchered. No shooting, no struck and lost: Sounds like an alternative we could live with.	
PCPW40	RE:	3.10.3.4.1 Cessation of the Hunt "Swan (1870) noted that even in the 1850's, the Makah Tribe was whaling less than in the past, but he could provide no clear explanation for the decline."	The 2008 DEIS contained an extensive discussion of the role sealing may have played in the cessation of the Makah Tribe's hunt in the subsection immediately following the subsection cited in this comment (that is, Subsection 3.10.3.4.2, Factors Responsible for Discontinuation of the Hunt).
	Comment:	In Winter Brothers, by Ivan Doig, Swan writes in his diary in 1887, "Captain Sampson informed me that whales have been quite plenty around the vicinity of the Cape this spring but the Indians have not been after them as they devote themselves exclusively to sealing."	

PCPW41	RE:	3.10.3.4.2 Factors Responsible for Discontinuation of the Hunt	Comments noted.
	Comment:	This section quotes Charles Scammon's 1874 Marine Mammals of the Northwestern Coast at length. As a whaler, his knowledge of whales, and gray whales in particular, is still considered valuable and accurate. On page 3-234, lines 12-14, the DEIS notes that "when the Makah Tribe… attempted to hunt whales in the early 1900's, few whales remained in the local waters." Scammon sheds light on a possible reason, with his description of kelp whaling: "The first year or two that this was practiced, many of the animals passed through or along the edges of the kelp, where the gunners chose their own distance for a shot. This method, however, soon excited the suspicions of those sagacious creatures. At first, the ordinary whale-boat was used, but the keen-eyed "Devilfish" soon found what would be the consequences of getting too near the long, dark-looking object as it lay nearly motionless, only rising and falling with the rolling swell. A very small boat, with one man to scull and another to shoot, was then used… This proved successful for a time, but, after a few successive seasons, the animals passed farther seaward…" Green et al. (1995), Offshore Distance of Gray Whales... references studies that concur with Scammon's observations: "… Hubbs (1959) and Rice and Wolman (1971) suggested that the few whales observed along traditional migration routes off California in the late	In developing the new DEIS, in addition to the information referenced in the comment, we sought additional assistance from Dr. John Calambokidis, who has first-hand experience surveying gray whales along their migration route. Dr. Calambokidis reviewed the 2008 DEIS and examined available data to assess the likelihood that gray whales would avoid the Makah U&A if hunting occurred there. The results of Dr. Calambokidis' review are reflected in the new DEIS (e.g., Subsection 4.4.2.3, Change in Abundance and Viability of PCFG Whales and 4.4.2.4, Change in Numbers of Gray Whales in the Makah U&A and OR-SVI Areas). In addition Alternative 6 of the new DEIS provides that the waiver and regulations authorizing a Makah gray whale hunt would expire in 10 years. This would allow an opportunity for NMFS and the public to evaluate the effects of a hunt on the distribution of PCFG whales within the Makah U&A.

		1800's and early 1900's (Townsend 1887, Andrews 1914, Howell and Huey 1930) was due to animals traveling farther offshore to avoid shore-based whaling pressure rather than an overall population decline." These suggestions that gray whales will learn to avoid hunt areas, serves warning to this Makah process: Do not ignore the possibility, indeed the likelihood, that the harassments and killings of gray whales at their feeding grounds will drive them offshore. Maybe not the first season, or the second, but according to Scammon, it will happen.	
PCPW42	RE: Comment:	3.16.3.1 "Early archaeological studies indicated that as much as 84 percent of the Makah diet was whale meat, oil, and other food products (Renker 2002) Considering that 80% of bones found at Ozette were Northern Fur Seal, how does that jibe with a calculation of whale providing 84% of the diet? With the Makah diet currently so high in healthful sea foods, and supplements such as cod liver oil readily available, where is the	In response to this comment, we have reviewed the original literature cited in Renker (2002), and modified the new DEIS to reference the original source of the information, which is Huelsbeck 1994 (Table 127) (Subsection 3.16.3.1, Nutritional and Health Benefits from Consuming Whale Food Products and Other Traditional Subsistence Foods). Huelsbeck conducted the original assessment of the archaeological evidence from the Ozette site. The analysis in the 2008 DEIS explored the impact on the Tribe of having or not having fresh gray whale meat (Subsection 4.16.2.1, Nutritional Benefits and Section 4.16.3, Evaluation of Alternatives).

		great need for contaminated whale meat in the diet?	
PCPW43	RE: Comment:	4.1.1 Alternative 1 There is no relevance to the gray whales utilizing the Makah U&A, in this speculation about Chukotka harvest levels with or without a Makah harvest. Analysis of Alternative 1 should have focused on the fact that without Makah hunting, the small numbers of gray whales utilizing the Makah U&A would be left in peace to thrive as functioning elements in this unique environment, and to gradually increase to the currently undetermined OSP of the Makah U&A Additionally, there would be no harassment of the mothers and calves in April and May in the "project area." Hungry migrating whales would also be able to feed and rest on their way north. With the continuing problem of "skinny" whales, utilization of the "project area" during north bound migration may be the difference between life and death for undernourished whales. The fact that this "analysis" of the effects of Alt. 1 – no hunting – contains no pertinent mention of positive effects to whales in the Makah U&A is a blatant smoking gun to the bias inherent in this DEIS. The paucity of balance by NMFS/Parametrix is nowhere more visible than in this little section. NMFS must answer why they could find no beneficial consequences to Alt. 1.	The comment cites the introduction to Section 4 of the 2008 DEIS (Subsection 4.1, Introduction). Section 4 examined the environmental effects of each of the alternatives, and the introduction to that Section described the activities we anticipated would occur under each alternative (e.g., Subection 4.1.1, Alternative 1). The introduction section described the basis for certain assumptions that are important to the analysis of each alternative (for example, how many whales would be killed, how many days of hunting would occur, during what time period would hunting occur). The analysis in Section 4 then examined the likely environmental effects of each alternative based on the assumptions established in the introduction. Section 4.4.3.1, Alternative 1, described the effect on ENP gray whales if NMFS did not authorize a hunt, which is that the status quo would prevail. This is the baseline against which other alternatives were measured. Thus in its analysis of other alternatives, the DEIS described potential effects of hunt alternatives compared to the no-hunt alternative. For example, Subsection 4.4.3.2.3, Change in Distribution or Habitat Use, described the risk that gray whales could change their current use of the coastal portion of the Makah U&A, or other coastal areas, as a result of authorizing a hunt.

PCPW44	RE: Comment:	4.1.2 Alternative 2 This section devotes (44) lines to explanations and predictions as to why a Makah hunt should and would occur in the months of April and May. Considering that whales in the Makah U&A during April and May will include large proportions of Phase II whales (90% mothers and calves) and resident whales, it is not surprising that there is such an over-kill of justification for allowing this timing for a hunt, and raises the big red flag of a biased assessment bent on justifying a preconceived NMFS decision, not allowing the possibility of science to direct a reasonable outcome. NMFS seems preoccupied with finding the perfect weather conditions for whalers. Is this really NMFS's mandate? Or should NMFS be at least equally concerned with the safety and wellbeing of the gray whales under its care?	The analysis in the 2008 DEIS predicted and analyzed impacts of alternative actions. Unless the EIS describes what we expect will happen under a given alternative, the analysis of impacts will not be complete. For this reason, the 2008 DEIS included a full discussion explaining why we expected the Tribe to hunt primarily in April and May. The analysis was not offered as a justification to explain why hunting "should" occur at that time, but as our prediction of what the Tribe is most likely to do if a hunt is authorized under the terms proposed by the Tribe. The comment offers no information to suggest that we were wrong in our expectation that the Tribe would most likely hunt in April and May if we authorize a hunt as the Tribe requested.
PCPW45	RE: Comment:	Allowable by-catch of identified whales (4-6) While this PBR methodology claims to be protective of whales faithful to the Makah U&A, there is an unexplained implication. If the abundance levels of whales returning to the ORSVI area will be "annually updated," then the allowable by-catch at this point in time (DEIS May 2008) may be different when/if a hunt is allowed. In fact, the numbers of ID'd whales only has to rise by a small number to tip the ABL level of 2.35% (rounded down to (2) in the DEIS) to over 2.5 which would be rounded up to (3) or (4) or (5). At which point any protection of resident whales would be moot.	The comment is correct that under the Tribe's proposal, the allowable bycatch level could change in response to a change in abundance of returning OR-SVI whales. Such abundance-based harvest management is consistent with the proposition that a larger population can withstand more human-caused mortality. Abundance-based management is included as an element of all five action alternatives in the new DEIS. The 2008 DEIS states that "The allowable by-catch level using the current minimum abundance estimate of 102 would be 2.4 whales (102 times 0.0235)" and that the 2.4 would be rounded down to 2. For the allowable bycatch level to increase to 3, there would have to be an increase in abundance of 26 OR-SVI whales (128 times 0.0235 = 3). This represents a nearly 25 percent increase in abundance. To

			achieve an allowable bycatch level of 4 whales, abundance would have to rise to 170. While abundance levels and other elements of the PBR-like calculation have changed since the 2008 DEIS, the same principle applies, in that fairly large changes in abundance would need to occur before the allowable bycatch level increased.
PCPW46		And if the Tribe is allowed to "apply the ABL only to whales landed, then all 35 whales killed every 5 years could be from the Makah U&A. Sooner or later, that would extirpate our faithful whales. While NMFS assumes that "other" whales will "fill in," there will be over 20 years of science flushed down the drain if these specific whales are "harvested." These whales include many who have been adopted through Cascadia Research's adoption program. These whales include many who are seen by and known to residents along the Straits. These whales provide profound enjoyment to tourists and fishermen. The whales who return to bays and rocky points farther in the Straits must first pass through the "project area." Eventually they too will feel the harpoon and the .50 cal. NMFS is participating in an experiment with unknown consequences to our Washington State resident whales.	The 2008 DEIS examined the potential maximum impact to identified whales under the Tribe's proposal, including the possibility that struck and lost PCFG whales would not be accounted for in the bycatch limit. Table 4-2 displayed both the potential maximum number of Makah U&A whales that could be killed over the 5-year period (20) and the likely number of Makah U&A whales that could be killed over the 5-year period (6.27). The estimate of the likely number of Makah U&A whales killed was based on estimates of the proportion of Makah U&A whales likely to be present in the Makah U&A during the spring hunting season. The new DEIS provides this same information in Table 4-1, based on updated information on the presence of Makah U&A whales in the Makah U&A during the spring. In addition, the new DEIS includes two alternatives that would count all struck and lost whales as PCFG whales and two alternatives that would count struck and lost whales as PCFG whales in proportion to their presence in the Makah U&A during the season they were struck.
PCPW47	RE: Comment:	4.1.2 Alt2 (4-8) The amount of harassments predicted by the Tribe on this page are bad enough: 140 attempts on whales and 700 whales approached every five years. But these	In response to this and other comments, we re-examined the information available regarding likely gray whale pod size in the project area during the time the Makah Tribe proposes to hunt. Our assumption that the average pod size in the project area is 2 whales is based on the average observed pod size during the southbound

		numbers are based on the untruth that whales in the "project area" during May and April are "migrating" in "average pod size of two." It is much closer to the truth to admit that these whales are where they are because they are feeding. The mothers and calves are also resting, nursing and hiding from orcas in the kelp beds near shore. The whales in these areas at this time are also milling, circling, feeding, resting, moving around in groups and numbers that change as they look for food between the various and variable patchy areas on the coast. Helicopter coverage of the unsuccessful hunts in 2000 clearly showed mud plumes in the same frame as the whaling canoe. The approaches and harpoon attempts could be plainly seen from above, frightening the feeding whales and causing them to flee the immediate area. The truth of the matter is that the approaches and the harpoon attempts will come down over and over again, year in and year out on many of the same whales. The faithful ones who specialize in feeding in the Makah U&A. If we are to believe the observations of Charles Scammon (cited earlier), gray whales are not stupid or oblivious to their surroundings and experiences. They will learn. They will feed elsewhere. The consequences of that are unanalyzed. They may crowd feeding areas to the north or south. Mothers and claves may move off	migration (Laake et al. 2009). It is possible that average pod size is different in the project area during the spring. However, there is no available information to support a different assumption of what the pod size might be. Like the 2008 DEIS, the new DEIS examines the possibility that an ongoing hunt in the Makah U&A under any of the action alternatives could disrupt normal behaviors and cause gray whales to abandon the area as a feeding area. In addition, Alternative 6 of the new DEIS provides that the waiver and regulations authorizing a Makah gray whale hunt would expire in 10 years. This would allow an opportunity for NMFS and the public to evaluate the effects of a hunt on the distribution of PCFG whales within the Makah U&A.

	consequences.	shore where conditions are much more dangerous for the vulnerable calves. NMFS is encouraging an experiment with grim All other Alternatives but (1) risk the same predictably bad consequences to the near shore U&A whales of the outer coast and the Straits.	
PCPW48	RE: Comment:	4.3.3.2.1 Pelagic Environment (4-26) The second paragraph on this page states that the number of whales "allowed to be removed" will be "less than 1 percent of the some 20,000 whales, and less than 5 percent of the 464 whales observed in the Makah U&A…" This sentence raises a problem of definition: In most cases, this DEIS uses the term "Makah U&A whales" to define the smallest number of identified whales in the PCFA. These are all whales who have been identified in the very n ear shore areas where the whale hunts of '98, '99, and 2000 have all occurred. It is confusing and self-serving to mix the whales near shore ("to be removed"), with the "20,000" and the "464" (PCFA) 'observed in the Makah U&A. In this last case, NMFS is using the entire "the Makah U&A" to mean the fishing grounds out to 40-50 miles off shore. This is the same misleading terminology that the DEIS used to state that the resident whales (Makah U&A whales) will only have a 1% chance of encountering a Makah hunter. The Makah hunters will not be out in the migratory corridor used by the great majority of migrating whales. This	The section of the 2008 DEIS cited in this comment discussed the likely impact on the pelagic environment in the project area. The pelagic resources in the marine environment are highly mobile and variable. Gray whales likely have little ecological interaction with these resources, except to feed on them opportunistically as they pass through.

		mixing of word usage seems intended to minimize fears about the well being of local whales and their habitat in a very dishonest way. NMFS must reword these statements to differentiate between off-shore migration corridor portion of the Makah U&A and the near shore whales and hunt areas of the Makah U&A.	
PCPW49	RE: Comment:	4.4 ENP Gray Whale & 4.4.2.1 "NMFS currently considers the ENP gray whale stock to be within it's OSP… and viable" This section should have discussed the potential for any of the many threats to the gray whales' habitat to greatly and suddenly change that viability. The die off of 1999-2000 is still not fully understood, but may relate to the worsening conditions in the Arctic. As the sea ice melts away, so do the hopes for a healthy future for gray whales. The ever-present threats of oil spills, dead zones, algae blooms, Navy sonar, projects off shore such as wave energy buoys, oil exploration and drilling, threaten all whales, including the whales in the Makah U&A. NMFS should be taking the most protective measures when it comes to the gray whales. The gray whales are in much more peril than the elite Makah whaling families, and NMFS priorities should be to protect them. The EIS must acknowledge the nature and extent of the threats to their viability.	The 2008 DEIS addressed the multiple threats to the ENP gray whale stock (Subsection 3.4.3.6, Known and Potential Anthropogenic Impacts). In response to this and other comments, we have expanded that discussion in the new DEIS, including potential future trends for the stock. In the event the ENP gray whale stock were to decline below its OSP level, we would not be able to issue a permit to the Makah under the MMPA, thereby eliminating any authorized hunting by the Tribe.
PCPW50	RE:	4.4.2.2 (4 – 36) "There is no evidence of familial recruitment in the local survey areas"	The new DEIS reflects new information about internal recruitment into the PCFG, as well as updated information from Calambokidis et al. (2014) regarding recruitment of calves into the PCFG feeding areas

	Comment:	This is just not so. The Peninsula Citizens for the Protection of Whales have adopted whale #107. He was identified as a calf with his mother, #43. They are both seen most years, with #107 feeding at the near shore places in the Makah U&A that his mother took him to as a calf. Additionally, in the Dec. 2000 Final Report "Range and Movement of Seasonal Resident Gray Whales," pg. 12: "there is some evidence for maternally directed site fidelity." The statement quoted above, "there is no evidence," should be stricken from the DEIS and replaced with the known facts.	(Subsection 3.4.3.4, Pacific Coast Feeding Group (PCFG) of Gray Whales).
PCPW51	RE: Comment:	PBR of whales in ORSVI Survey Area The Makah must not be allowed to dictate the ABL for PCFA whales. Struck and lost must go against the PCFA quota, and the total PBR must never rise above two. How can NMFS consider it reasonable to allow a possible 15 ORSVI whales to be killed every five years? By NMFS' own admission, that "would exceed by 2.5 whales the PBR level resulting form the Tribe's proposed method." It is not sufficient for NMFS to next state a lower "likely" number. Does NMFS not put stock in the precautionary principal? Why bend over backwards to satisfy the whaling families at the expense of our very small number of resident whales?	The 2008 DEIS makes no judgment as to whether the Tribe's proposal is reasonable. Its purpose is to analyze the likely impact of the Tribe's proposal on the human environment. The conclusion that it is likely that on average 1.25 whales out of seven would be identified whales was based on information available at the time. The new DEIS contains updated information and a revised estimate. In response to this and other comments, the new DEIS includes two alternatives that would count all struck and lost whales as PCFG whales and two alternatives that would count struck and lost whales as PCFG whales in proportion to their presence in the Makah U&A during the season they were struck.
PCPW52	RE:	4-38 "Estimates of the proportion of PCFA whales in the Makah U&A during April and May… are based on a small number of observations."	We have for several years funded survey efforts in the Makah U&A and elsewhere in the PCFG survey areas, as described in the 2008 DEIS and the new DEIS. In addition, we have funded research to collect and analyze biopsy samples (the research is reported in Lang et al. (2011), summarized in the new DEIS (3.4.3.4.1, PCFG Population

	Comment:	NMFS has had ample time – years – to do the research needed to know what whales are present where and when. This DEIS should never have been prepared without this vital information. How can decisions about hunts in April and May be made without the facts that are needed to protect the Makah U&A whales? It is bad enough that NMFS well knows mothers and calves are using this area at that time. NMFS must obtain and provide longer term data on the composition of whales in the near shore Makah U&A in April and May.	Structure). As noted in previous responses, Calambokidis et al. (2014) report on the additional information gathered regarding PCFG whale presence in the Makah U&A prior to June 1 and now estimate that about 33% of whales present are PCFG whales. These results are summarized in the new DEIS. While it would be ideal to survey the area more frequently, sea conditions make it impractical (Calambokidis et al. 2014). In part to account for this uncertainty, Alternative 6 of the new DEIS provides that the waiver and regulations authorizing a Makah gray whale hunt would expire in 10 years. This would allow an opportunity for NMFS and the public to evaluate the effects of a hunt on PCFG whales within the Makah U&A after 10 years of hunting.
PCPW53	RE: Comment:	4.4.2.3 Change in Distribution or Habitat Use 'It is reasonable to expect that whales approached by Makah whale-hunting vessels would react in a similar, temporary manner… (as to whale watching)" Comparison of whale watching and whale hunting: <u>Vessels involved in hunt: (3-275)</u> - Coast Guard Helicopters - Coast Guard Cutter - Coast Guard Utility boats (several) - Coast Guard Zodiacs (several) - Tribal Canoes – one or two - Tribal Chase Boats – one or more (24' long, 200hp engines) - Tribal Fishing Vessel (tow boat) - Protest Vessels – five to fifteen – various sizes (3-273) - Protest Aircraft (3-274) - Media Helicopters – three (3-274) - NMFS Research Vessel(s)	In response to this and other comments, the new DEIS contains a revised discussion comparing whale reactions to hunting with whale reactions to whale-watch vessels (e.g., Subsection 3.4.3.6.6, Vessel Interactions). It remains uncertain how a tribal hunt might cause whales to change their distribution in the Makah U&A or other local survey areas.

	Vessels involved in whale-watching in Makah U&A: - One to five vessels out of Neah Bay and Sekiu - One to five whale watching vessels in Straits - Small number of kayakers Behavior of vessels involved in locating and pursuing a kills: - Many very loud engines - All vessels searching for and pursuing whales moving at high speeds. Canoe being towed by support boat. Coast Guard vessels, protest boats, media boat, and NMFS boats keeping pace. - Helicopters circling above Behavior of whale watch boats searching for and observing whales: Guidelines: 1 Be cautious and courteous. Approach areas of suspected marine mammal activity with extreme caution. 2 Slow down: Reduce speed to less than 7 knots when within 400 yards of whale. Avoid abrupt course changes. 3 Avoid approaching closer than 100 yards to any whale. 4 If vessel is unexpectedly with 100 yards of a whale, stop immediately and allow the whales to pass.	

	5 Avoid approaching whales from the front or from behind. 6 Keep clear of the whale's path. 7 Limit viewing time to maximum of 30 minutes. Source: NMFS and Fisheries & Oceans Canada <u>Vessels involved in hunt: attempted approach, harpoon, kill shots.</u> - All vessels close in on whales. - Canoe(s), chase boats, Coast Guard vessels, media boat, protest boats, NMFS boat all in vicinity of whales being approached. Harpoon attempts made from within feet of whale. Shots fired within yards of whale. (Composite description of failed hunts and successful hunt – Observers Report). <u>Vessels involved in watching whales in Makah U&A:</u> - One or two vessels floating quietly no closer than 100 yards. Comment: The behaviors and numbers of vessels involved in the whale hunts of 1998, 1999, and 2000 are in no way comparable to the behaviors of the very few whale watching boats the Makah U&A whales are likely to encounter on their northbound migration in March and April, on the coast, or even on their entry into the Straits. Whale watching has not yet blossomed on the outer coast of Washington or on the U.S. side of the Straits.	

		But we can learn from other areas. Farther north, on the outer coast of Vancouver Island, in Clayoquot Sound, more significant whale watching does occur. During a three year period (1991 – 94) D.A. Duffs, University of Victoria, Victoria B.C., studied the foraging tactics and movement patterns of the gray whales of the area: "Over the 3 year period, the whales gradually moved further from the main commercial whale-watching port of Tofino, necessitating a significant increase in travel distances for the whale-watching fleet, from only 10km in 1991 to as much as 30 km in 1994. The implications of this for the management and sustainability of whale-watching are discussed." From: "The recreational use of gray whales in Southern Clayoquot Sound, Canada. Applied Geography 16(3): 179-190 1996. Additionally, from Randall's "The Problem of Gray Whale Harassment: at lagoons and during migration" 1977: Harassment involves evasive action, taxing the "energy budget." "This energy may be important to the animal's reproductive fitness or survival." He describes behaviors of gray whales that signal harassment by boats, including: 1. Speed up 2. Slow down 3. Breathing changes 4. No blow 5. No roll 6. No flukes 7. Dodge reverse	

	8. Bottom dodge 9. Disappear 10. Sun slick "trickiest and most intelligent" He also makes this important statement about whale response: "Some whales are skittish and react with panic when approached by even the most careful observer. Others are unafraid and even attracted to boats." From Heckel, et al 2001 "Influence of Whale Watching on Gray Whales": "The intentional approach of vessels might elicit escape reaction in whales, and the vessel's speed, direction, distance and sound seem to be important factors." (Bird 1983) "… vessel's proximity and speed probably resemble a chase as experienced by gray whales when pursued by killer whales (Goley and Straley, 1994) or by aboriginal subsistence hunters off Chukotka (IWC. 1993)." Comment: These are just a few references to the effects of whale watching on gray whales. It is eye opening to realize the potential effects of an activity that means the whales no harm, an activity that only seeks to observe them from a distance as they pass by or mill and feed. Most people participating in whale watching would be heart broken to ponder the power of their cumulative presence to drive whales off shore away from their feeding areas, to cause evasive behavior that saps their energy reserves, to disrupt resting, sheltering, and	

		nursing of young, and to cause actual panic in some sensitive whales. It is no wonder that Heckel, when contemplating the potential long-term effects of whale watching on gray whales concludes: "The precautionary principal adopted by the U.N. Conference on the Environment and Development (UNCED) urges caution when making decisions about systems that are not fully understood." (Meffe and Carroll, 1947) How much more frightening and severe harassment will the gray whales face from Makah whaling? The hundreds upon hundreds of "approaches" that are in actuality aggressive attack moves. The dozens and dozens of harpoons flung at close range with numerous motorized boats and ships clustered around. The glancing blows, the strikes, the struck and lost, the dead and dying whales. The gun shots hitting and wounding and killing over and over and over, year after year after year. Scammon says the whales will leave. Observers of the whale watching effects in Tofino say the whales will leave. Those faithful few whales whose presence around us here on the Peninsula, make every glimpse of the Straits and the ocean a potential "joyful happening." Those faithful few will surely be among the dead and vanished. And then it will be too late for "adaptive management" to mitigate the loss. A few less strikes? A lesser number of approaches? Bigger weapons? Just quit caring about "resident' whales?	

		The 9th Circuit Court's decision requires NMFS to care. Require NMFS to protect the faithful few. NMFS' current Alternatives Two through Six mock the Court. All will lead to the elimination of local whales by either fear or death. Does NMFS have evidence to support its theory that whale hunting and whale watching will have a "similar and temporary" effect? None of the references provided by NMFS "suggested the whales might become habituated and have less of a reaction the more frequently they are approached" (4-39). The references cited above conclude the opposite is much more likely.	
PCPW54	RE: Comment:	"It is uncertain how whales would react to unsuccessful harpoon attempts, but the reaction may be similar to that observed in whales that are tagged or biopsied. Whales may be less likely to habituate to unsuccessful harpoon attempts than to approaches... It is unknown whether whales near successful harpoon attempts will… over time avoid vessels." All this uncertainty defies common sense, and available studies by NMFS. Herb Sanborn writes in Gray Whale 5 Year Monitoring Plan about biopsy samples of blubber collected from north bound whales in 1995: "The effective range of current equipment is 20 meters, however many animals could only be approached to within 40 meters. Additional testing will be necessary to determine whether biopsying from a greater distance is	As described above, in response to this and other comments, we sought additional expert review of the 2008 DEIS from Dr. John Calambokidis. The results of that review are incorporated in the new DEIS.

		possible, with modification of the present equipment…" This indicates that the comparison between harpoon attempts and biopsy collection may not bode well, as harpoon attempts must be made from a few feet away, not 40 meters.	
PCPW55	RE: Comment:	4.4.3 Evaluation of Alternatives NMFS refuses to consider an Alternative that takes the hunt offshore to the migratory corridor. Every alternative other than Alt. 1 makes it mathematically likely that every Makah U&A whale will be approached by Makah hunting vessels on multiple occasions and could repeatedly be subjected to harpoon attempts. Mothers and calves that will be in the hunt area in April and May will feel the "collateral harassment" as well. Therefore, the only Alternative that satisfies the 9th Circuit Court and the MMPA' mandates is Alternative I. How can we take this DEIS seriously, when it ends section 4.4.3.2.3 with this statement: "Thus available information indicates that gray whale distribution and habitat use will not change compared to the no-action alternative." NMFS' own studies cannot possibly lead to this conclusion. And NMFS' own uncertainties cannot logically lead to this declarative statement.	In response to this and other comments, the new DEIS includes an alternative that would require any hunt to occur at least 5 miles from shore (Alternative 3, Offshore Hunt). During public scoping for the new DEIS some commenters objected to the inclusion of an offshore hunt, while others supported its inclusion. As described above, in response to this and other comments, we sought additional expert review of the 2008 DEIS from Dr. John Calambokidis. The results of that review are incorporated in the new DEIS.
PCPW56	RE: Comment:	4.4.3.2.3 Migrating Whales "Migrating whales travel one to two miles offshore on their northward migration…" At 3-67, lines 29-30, the DEIS states: "These sightings farther offshore are consistent with	In response to this and other comments, we reviewed all available information regarding the distance from shore that migratory whales travel, both during the northbound and southbound migrations, in the Makah U&A. This updated information is described in Subsection 3.4.3.3.2, ENP Seasonal Distribution, Migration and Movements).

		Green et al (1995), who documented phase one north bound migrants off the coast of Washington… averaging a distance of 7.3 miles." This is another example of conflicting "facts" that seem to be deliberate attempts to confuse. In this case it suits the desired outcome to continue to place all "20,000" migrating whales into the "project area," thereby "diluting the chances of a resident whale being harassed or killed."	
PCPW57	RE: Comment:	4.4.3.5.3 (4-59) "Thus even if some whales do abandon the area as a result of hunting disturbance, new whales... ***might*** come into the area, indicating that gray whale distribution and habitat use ***will not*** change compared to the no-action Alternative." For a paragraph that includes the following: "***is likely to be***," "***is less certain***," "***is uncertain***," "***is also uncertain***," "***may be***," "***if***," "***might not***," "***if***" and "***might***" to end in a statement of fact is absolutely astounding. Does NMFS stand behind this conclusion with enough certainty to base decisions on it? Even if a population of gray whales on the coast were thought to be relatively constant, harvest regimes that remove maximum sustained yields annually would change whale behavior, reduce densities and observability and alter established relationships between whales and their environment.	Comments noted.
PCPW58	RE:	1.2.2 Treaty of Neah Bay… "Courts liberally construe treaties, resolve ambiguities in the tribe's favor, and "interpret Indian treaties to	The 2008 DEIS stated that "some Northwest Indian tribes traditionally harvested and used products from . . . marine mammals;" that tribes in the past have "expressed an interest in harvesting marine mammals;" and that "some tribes may continue to

		give effect to the terms as the Indians themselves would have understood them." "The Treaty of Neah Bay is the only treaty, between the U.S. and an Indian tribe that expressly provides for the right to hunt whales."	believe and assert that their treaty rights to take marine mammals are not subject to the MMPA." It concluded that a waiver for the Makah Tribe "may influence these other Indian tribes in the Northwest and nationally to seek waivers of the moratorium to take marine mammals," and that the "outcomes of any future processes would depend on facts not presently known, but it is possible that [a waiver] could lead to increased federally authorized take by other Indian tribes." (Section 4.17.2.1.2, Increased Take of Marine Mammals by Indian Tribes).
	Comment:	The words "and seals" has been left out of the above statement. Olympic National Park anthropologist Jacilee Wray wrote in her 1997 book Olympic National Park Ethnographic Overview and Assessment: *The Treaty of Neah Bay is the only Stevens treaty with language that specifies the right of whaling and sealing. However, the privilege to hunt included in the other western Washington treaties have also been construed as including whaling and sealing (Mitchell 1992). Currently the Makah, Quileute, Quinault, Skokomish, Port Gamble S'Klallam, Jamestown, S'Klallam, Lower Elwha Klallam, as well as the Muckleshoot, Tulalip, Lummi, and Nooksack have tribal regulations regarding the harvest of the harbor seal and the sea lion (Northwest Indian Fisheries Commission: Personal Conversation 1996).* It is becoming clear that many western Washington tribes are closely monitoring the Makah legal battle. When and if a legal precedent is established, any or all may claim	

		"discrimination" if they are not also allowed to whale. In 2004 the National Congress of American Indians passed Resolution #MOH-04-025 supporting Makah whaling rights, which concludes with these words: *Now therefore be it resolved, that the NCAI does hereby go on record in full support of the right of the Makah Tribe to freely exercise their treaty right to hunt whales* ***while supporting the rights of fishing Tribes to marine mammal management without threats, intimidation, harassment or interference.*** *Be it further resolved, that NCAI supports the Makah Tribe* ***and other effected tribes*** *to take all necessary steps, judicial, legislative and administrative, to reverse the court's ruling in Anderson v. Evens.* *Be it finally resolved, that NCAI calls upon the United States government and all of its agencies to support the efforts of the Makah Tribe* ***and effected tribes*** *to restore its full treaty whaling rights.* The Quileute Tribe has often claimed to have the identical whaling rights to the Makah, although they have renounced any desire to return to it. (Whales – Touching the Mystery, 2006, Doug Thompson).	

PCPW59	RE: Comment:	1-12 "The federal government has a trust responsibility to protect the treaty hunting, fishing, and gathering rights of Indian tribes." 1 "Preparation of the EIS is the first step…: it will aid NMFS in future decisions related to the MMPA (and WCA). Table 2-2 "may prompt other tribes…" 4.17.2.1 Marine Mammals Nationally "NMFS' waiver of the moratorium… for the Makah hunt… has the potential to lead to additional requests for MMPA waivers from… Indian Tribes and to additional requests for a quota under the WCA by those claiming aboriginal subsistence whaling rights." 4.17.2.1.2 "A successful completion … in response to the Makah in this waiver request may influence these other tribes in the Northwest and nationally to seek waivers…" It seems pretty clear where all this is heading. NMFS is prepared to take precedent-setting actions without even estimating how many other tribes could likely pursue waivers for take of marine mammals. NMFS concludes that because it has been nine years since the Makah received an allocation and no other tribe has requested or inquired about an allocation, this "suggests" there is little interest by other native groups to seek take of gray whales. This is extremely flawed reasoning. There have been 9 years of see-sawing court battles. Nothing is settled. Why would there be inquiries during this delicate phase of court ordered NEPA compliance?	The 2008 DEIS acknowledged that a successful request by the Makah could lead other Tribes to make similar requests to hunt marine mammals: A successful completion of the authorization process in response to the Makah in this waiver request may influence these other Indian tribes in the Northwest and nationally to seek waivers of the moratorium to take marine mammals. The outcomes of any future processes would depend on facts not presently known, but it is possible that implementation of Alternatives 2 through 6 in the draft EIS could lead to increased federally authorized take by other Indian tribes. With respect to the No-action Alternative, it is uncertain whether a decision by NMFS to deny the Makah Tribe's request would result in less harvest of marine mammals by Indian tribes in the future. (Section 4.17.2.1.2, Increased Take of Marine Mammals by Indian Tribes). NMFS recognizes that some Northwest Indian tribes traditionally harvested and used products from seals, sea otters and other marine mammals. Northwest Indian tribes have in the past expressed an interest in harvesting marine mammals (Schmitten 1994). Additionally some tribes may continue to believe and assert that their treaty rights to take marine mammals are not subject to the MMPA. A successful completion of the authorization process in response to the Makah in this waiver request may influence these other Indian tribes in the Northwest and nationally to seek waivers of the moratorium to take marine mammals. The outcomes of any future processes would depend on facts not presently known, but it is possible that implementation of Alternatives 2 through 6 could lead to increased federally authorized take by other Indian tribes. With respect to the No-action Alternative, it is uncertain whether a decision by NMFS to deny the Makah Tribe's request would result in less harvest of marine mammals by Indian tribes in the future.

		It is much more reasonable to conclude that any interested parties, on the west or east coasts of the U.S., are waiting for the precedent to be set by the Makah. Granting the Makah a waiver could have a domino effect with unknown consequences. The flood gates could be opened on a marine mammal slaughter that will be impossible to monitor or control. Alternative I is the only way to hold onto the protections guaranteed by the MMPA. All marine habitats are degrading and imperiled. This is not the time to unnecessarily reduce population numbers. It does not make sense to conclude that the no-action Alternative is "unlikely" to result in fewer requests from Indian tribes in the future. It is more logical to conclude that considering the 10 year legal battle, the denial of a waiver would be quite discouraging to others. The granting of the waiver will have the opposite effect.	Thus, we did not conclude, as the comment suggests, that the No-action Alternative was "unlikely" to result in fewer requests from Indian Tribes in the future. Rather, we acknowledged that the results of no action were uncertain.
PCPW60	RE: Comment:	4.15 Public Safety – Bystanders A scant (9) lines are devoted to the safety of "bystanders." This in spite of the real dangers of using a .50 cal rifle close to shore. There is no argument among ballistic experts that the range of a .50 cal weapon greatly exceeds the "hundreds to thousands of yards from shore" that the DEIS reasons makes it "extremely unlikely that bystanders on land would be exposed to injury," from a Makah whale hunt.	We have incorporated the information presented in this comment in the new DEIS to provide a more complete picture of potential impacts to public safety of authorizing a Makah gray whale hunt (Subsection 3.4.3.5.4, Method of Killing and Time to Death). In addition, the new DEIS includes the alternative of an offshore hunt (Alternative 3, Offshore hunt), in which we selected the distance from shore specifically to avoid the potential for someone on shore to be injured by a bullet from the hunt.

		The most recent Makah safety protocols call for 500 yards visibility and "pointing the rifle downwards." Ballistics expert Roy Kline recommends no firing within 6,670 yards from shore. NMFS' comment at 3-262 unfairly minimized the potential danger to campers and hikers on the narrow coastal beaches of Olympic National Park (ONP), when the statement is made that "May is not a peak month," and that "hunts were well-advertised." According to ONP data, April and May are actually quite popular months on the coast; and there never was definitive advance warning of hunts. Coastal Strip overnight wilderness permits (each permit represents 1 – 14 people camping overnight on the outer coast) ● April 2002: 231 permits ● May 2002: 396 permits ● April 2003: 426 permits ● May 2003: 355 permits ● April 2004: 355 permits ● May 2004: 408 permits Considering these high numbers of park visitors within range of the .50 cal, NMFS must consult with ONP about enhancing safety for these innocent bystanders. The Tribe estimates 140 rifle shots every 5 years. NMFS must also confer with ONP on the following: ● What will policy be in the event that a near-shore hunt results in a dead, dying,	

		or simply frightened whale beaching on the wilderness strip? ● What will policy be regarding the pursing, killing (with .50 cal), and butchering of whales in ONP? ● How close to ONP beaches are motorized vessels allowed to approach? Many of these issues would be resolved if the hunt was taken off-shore in the migratory corridor, an alternative that for safety issues alone, should have been considered. See attached chart/map showing identified whale sightings, camper numbers, hunt sites, .50 cal danger zone, and migratory corridor.	
PCPW61	RE: Comment:	4.6 Economics "… potential effects on Clallam County as a whole will not be addressed in this analysis." This statement encapsulates the biased nature of Parametrix's treatment of tourism issues throughout this DEIS. In the Scoping Report 2005, prepared by Parametrix for NMFS, there is the admission at 3.1.1.7 socioeconomics and tourism, that "there were 47 comments regarding a need to analyze the effects of whale hunting on socioeconomics and tourism." There is no possibility that these comments could have been construed to represent a concern for tourism in Neah Bay rather than the off-reservation communities of Clallam County.	The 2008 DEIS examined economic impacts in Clallam County (for example, Section 4.6.2.1, Tourism, describes the potential for a gray whale hunt to change tourism in Clallam County). The 2008 DEIS found it unlikely that implementation of the Tribe's proposal would have an economic impact in Clallam County (Section 4.6.2.1, Tourism). The commenter provides no evidence to the contrary. The new DEIS contains updated information on the economic status of Clallam County (Section 3.6.3.1.3, Tourism) and continues to conclude that a Makah gray whale hunt would have little economic effect on the county (Section 4.6.2.1, Tourism).
PCPW62		While the potential for a "tourism boycott" is given token mention here and there in the DEIS, it is discussed only in reference to the	The 2008 DEIS states that any positive effects of a whale hunt on tourism (both locally and county-wide) could be offset to some extent if opposition to the hunt resulted in boycotts of Olympic

		effect on the reservation, not on Clallam County or Washington State, where tourism is increasingly important as the fishing and timber industries provide fewer and fewer jobs. There is a huge likelihood that if whaling begins again and is no longer stoppable through legal actions, the cumulative consequences of the slaughter of gray whales, identified or not, will be negative. The Olympic Peninsula has long marketed itself to tourists as a natural wonderland. The presence of the Olympic National Park is the heart and soul of the eco-tourism advertising directed at families. For Parametrix to put a favorable spin on whaling-related tourism, reveals the Parametrix strategy in its other job description to work with the Makah Tribe on promoting whaling-related tourism! The conflict of interest involved in Parametrix overseeing an analysis of the effects on tourism of whaling, is certainly mind boggling, and needs to be reassessed by NMFS. NMFS' judgment in hiring Parametrix is called into question and deserves an explanation, as nowhere is the relationship between Parametrix and the Makah Tribe revealed to the DEIS reader. The unanalyzed likely fate of tourism on the Peninsula is grim. It is likely that a tourism boycott will worsen with every whale killed, year after year after year. The great majority of people everywhere believe that whales should be watched, not	Peninsula tourism activities, including boycotts of Neah Bay specifically (Section 4.6.2.1, Tourism). The comment presents many statements of those offering an opinion about how whale hunting might affect tourism, but presents no data. Absent data, it would be speculative to quantitatively estimate the economic impact on tourist-related businesses in the area, should calls for boycotts of Olympic Peninsula tourism occur. Data presented in the 2008 DEIS that were taken from the annual travel economic impact report produced by the Washington State Tourism Office show that travel spending in Clallam County decreased in 1999 but increased in 2000. Because a Makah whale hunt occurred in both 1999 and 2000, it is uncertain whether the spending decrease in 1999 can be attributed to the whale hunt. In the new DEIS we include updated economic data regarding Clallam County. To reflect the uncertainty about the impacts that whaling may have had on the tourism industry, Subsection 3.6.3.1.3, Tourism, has been revised as follows: "It is unknown whether businesses experienced a decrease in sales because of negative attitudes toward whaling by whale-watchers or other tourists, but it is possible that some businesses were affected."

		killed, especially where there is no survival need for the meat. It will also be very hard to erase the horrendous Sept 8, 2007 "hunt" from the minds of the public. Bill Sperry was the president of the Forks Chamber of Commerce in 2001 (Forks is the larger of the communities close to Neah Bay). Mr. Sperry was quoted in the Peninsula Business column by business consultant Jim Walker, in the Peninsula Daily News, July 3, 2002, in a column entitled "A Vision for West End Tourism:" "Sperry hopes that the Makah tribe will become part of the Peninsula tourism plan, but first Makah whaling, which he views as a put-off to many visitors, must end." Parametrix only referenced one website in regard to boycott "research": a website called "Boycott these companies." This site is irrelevant to tourism or whaling. But there are dozens and dozens of websites providing details and updates on whaling-related boycotts around the world. To studiously avoid this information serves the Makah whaling agenda, but disregards the potentially devastating effects a decrease in tourism would have on local businesses and the low-wage employees in tourism service jobs on the Peninsula. A few headlines from boycott information on-line: - "The resumption of whaling hurts Iceland tourism" Nov. 12, 2006 InTransit	

	- "More than 65,000 say no to Caribbean commercial whaling" Dec. 21, 2006 Caribbean Net News - "Whaling foes say support for hunting could backfire on the Caribbean nations that helped Japan end a 20-year moratorium - are told tourism may suffer" June 20, 2006 L.A. Times - "The resumption of whaling by Iceland and the potential negative impact in the Icelandic whale-watching market" 2003 Current Issues in Tourism - "Pro-whaling St.Lucia suffers tourism decline" April 20, 2007 Cyber Diver News Network - "French Polynesia could profit from international vote (against) whaling" June 22, 2007 Pacific Magazine - "Tourism: Whale threat looms again could threaten visitor business" article from Tonga - "Bauger chief (head of Icelandic bank) blubbers about whaling." From article: "This whaling could hurt us because many pressure groups have been saying they will encourage others not to buy things from Icelandic companies." Jan. 12, 2007 Times Online - "Tourism boycott hurts St. Lucia" May 28, 2007 Eco The statement by Parametrix at 4.6.2.1 Tourism that there is "no evidence that calls for boycotts of Olympic Peninsula tourism had any negative economic impact on tourism in the area" is incorrect and irrelevant. Incorrect: The Peninsula Daily News in July 1999 quoted Al Seda, the then owner of Big	

		Salmon Resort in Neah Bay: Commenting on his fishing business being down quite a bit from the past (75 boats compared to 200), Seda "attributed the decline to several factors, among them the Makah killing of a gray whale off the coast May 17…" Irrelevant: Only one whale was killed in the years since 1998, outside of the Sept 8, 2007 debacle. Most people feel that whaling has been stopped, not to return again. There has been nothing overt to boycott in the quiet behind-the-scenes actions by NMFS the past many years. If whaling does return, with that return will come the boycotts that will hurt many more off the reservation than on. The DEIS does get it right at 4.6.2.1 Tourism: "Persons opposed to whaling under any conditions would be likely to participate in a boycott under any of the action alternatives." As that describes most Americans, NMFS must reevaluate the Parametrix decision not to analyze the probable impacts of whaling on economics off the reservation. If NMFS approves a waiver, they will be setting in motion an experiment unknown in the lower 48 states of the U.S.: resumption of the killing of whales in the midst of 21st century America. To refuse to analyze the potential for devastating economic effects to the Olympic Peninsula is unconscionable.	
PCPW63	RE:	4.10.3.1 Cultural Identity – Alt. 1 "Without whale hunting activity… young tribal members would lack any active whaler role models… living a culturally proper life…"	Comment noted.

	Comments:	With most of the previously active whalers in prison, on probation, accused of various crimes including domestic violence and many with drug and alcohol problems, any references in this DEIS to whalers as role models must be stricken or labeled as speculative. For NMFS to fail to honestly characterize the current whalers is to endorse the concept that whalers can break federal, state, and Tribal law and still be considered "role models." And to complain that Alt. 1 could "reinforce their feeling of disillusionment with the federal government," one comment: Join the club!	
PCPW64	RE: Comments:	Cumulative Effects 5.1 Context for Analysis It is commendable that the DEIS devotes pages to the Wave Energy Pilot Project, but while it may be the only "projected development in the area of which NMFS is aware," there are other developments afoot which should have been considered in this section. The Peninsula Daily News, 3-19-06 ran an article titled "Navy Plans Pacific Marine Mammals Study – Another proposal may intrude on Olympic Coast Marine Sanctuary." To quote the article: "U.S. Navy officials say they will study the movements of marine mammals in the Pacific Ocean as they develop procedures for avoiding conflicts with sensitive species such as killer whales. The Navy is also preparing an E.I.S. on its plan to expand a testing range off the coast of Washington	In response to this and other comments the new DEIS includes a discussion of projected Navy activities as well as other activities and developments within the ENP gray whales' entire migratory range (Section 5.4, Gray Whales).

		One proposal would increase the size of the existing range by some 50 times and intrude on protected habitat inside Olympic Coast National Marine Sanctuary, according to Michael Jasney of the Natural Resource Defense Council." This must fit the criteria of "reasonably foreseeable future action," but there is no mention of it in the DEIS. NMFS should also acknowledge the potential for off-shore drilling, as it is being discussed daily by the President and both presumptive nominees for the Presidency.	
PCPW65	RE: Comment:	5.4 ENP Gray Whale "Ocean energy projects would have a greater impact on summer-feeding whales in the PCFA… (and could) negatively affect the abundance of gray whales identified in the ORSVI. Under Alternatives 3, 5 and 6… it is possible that the abundance of identified whales in the ORSVI would decline as a result of cumulative effects." This finding begs three questions: 1 Did NMFS submit comments to the wave energy project expressing concern for the ORSVI whales? 2 Will NMFS now remove Alternatives 3, 5 and 6 from consideration as unreasonable? 3 If answer to above is no, will NMFS admit the obvious: NMFS has no stake or interest in the well being or survival of our specific local gray whales?	The new DEIS reflects the fact that project applicant has withdrawn from this proposed project (Section 5.4, Gray Whales).

PCPW66	RE: Comment: 14, 2005	"For gray whales in local survey areas, there are no other cumulative effects from those that affect the gray whale stock as a whole." This statement comes without any discussion of the specific habitat threats off Washington's coast that seem to be tied to climate changes. The following headlines and stories appeared in the Peninsula Daily News: - "Effects of 'dead zone' unclear. Scientists remain puzzled by low-oxygen levels (off the central Olympic Peninsula coast) "Sept 6, 2006. - "Coastal ocean suffers from famine" Aug. - "Research in Pacific reveals its troubles" Acidity rises, oxygen drops. April 7, 2006 These headlines hint at the recurring problems of the "highly productive and nearly pristine" habitat described at 5.3 Marine Habitat and Species. It seems reasonable to predict that the cumulative impacts of these erratic and poorly understood new problems will have an impact on the prey availability on the coast, a topic unanalyzed by NMFS.	The new DEIS contains an expanded discussion of the potential effects of climate change and ocean acidification on gray whales and their habitat (Subsection 3.4.3.6.11, Climate Change and Ocean Acidification).
PCPW67	RE: Comment:	Cumulative effects on individual whales Along with stress mortality, another cumulative effect on individual whales would be the instilling in these calm and trusting whales a fear and distrust of boats. The problem will go beyond "personality change" and will no doubt result in many faithful whales leaving the Makah U&A and the feeding sites they know so well and pushing	The 2008 DEIS considered time to death and manner of death as evaluation criteria for evaluating impacts to individual whales because these criteria are objective and quantifiable. Impacts such as personality change would be too speculative and subjective to attempt to analyze. However, the possibility that hunting in the Makah U&A would cause PCFG whales to abandon the area as a feeding area were explored in the 2008 DEIS (e.g., Subsection 4.4.3.2.3, Change in Distribution or Habitat Use) and are explored in the new DEIS in the same subsection (e.g., Subsection 4.4.3.2.4,

		further north. The effect of the loss of these whales, experienced at finding food here or the fate of these whales themselves, is not explored in this DEIS.	Change in Numbers of Gray Whales in the Makah U&A and OR-SVI Survey Areas).
PCPW68	RE: Comment:	5.6 Economics "Given the current economic climate… in Clallam Country… no cumulative effects anticipated on the local economy." To avoid analysis of the potential for a snowballing boycott of the Peninsula is no surprise on these last few pages of the DEIS. But the rosy "current economic climate" described in 2006 is no longer "current" or rosy. The Peninsula Daily News Aug. 12, 2008, has coverage of a Clallam County Commissioner candidates' forum. The incumbent, Mike Chapment references to the "current economic down turn": "While paring county employment and reducing workers' hours, the current county commissioners have denied $4 million in proposed new spending." And from his opponent Terry Roth: "The economic structure of the Peninsula is not good." Additionally, the PDN, Aug 13, 2008, reports that the unemployment rate in Clallam County is now 7.4%, not the 5.6% the DEIS found in 2006. There must be an updated analysis of the Clallam County economy.	As noted above, the 2008 DEIS did not find evidence to suggest that a Makah gray whale hunt would affect the economy of Clallam County either positively or negatively (e.g., Section 4.6.3.2.1, Tourism). An action that is unlikely to have an economic impact is also unlikely to have cumulative economic impacts. The new DEIS continues to conclude a Makah gray whale hunt is likely to have little impact on the local economy (e.g., Subsection 4.6.3.2.1, Tourism). Given this conclusion, it also finds there is likely to be no cumulative economic effect, regardless of the underlying local economic conditions (Subsection 5.6, Economics).
PCPW69	RE: Comment:	5.7 Environmental Justice Nowhere in the DEIS have any potentially positive effects of the no-action Alternative on the Tribe been envisioned. Envision this: Without whaling sapping the energy, attention and funds of the Makah Tribe, it is possible that the Tribe could come	Comments noted. We did not receive any comments from the Tribe or from tribal members that are consistent with these comments.

		together and bond over other needs. In fact Ann Renker could write a whole new Needs Statement, elucidating the needs of youth, parents, elders. Needs like jobs, education, after school programs, drug rehabilitation programs, nutritional supplements, improved housing, secure water supply, assisted living houses for elders who currently have to be sent away from home for care to Forks, Port Angeles and Sequim. Neah Bay is a small community with so much going for it: spectacular surroundings, lots of sea food, lots of activities, strong families, medical and dental coverage for all, churches, a decent median household income, and lots of good people who just want a good life for their families and their community. Of course there is poverty and some people need help. This must be within the power of a caring community to do something about, given the resources and will of the Tribal government. In the Needs Statement 2007, Ann Renker reveals that the Makah Tribe has spent "675,000 of its own funds" during the 2003-2007 period on the pursuit of whaling. This has not surprisingly "placed a substantial financial burden on the Tribe," (pg. 39) and has no doubt caused many other pressing projects to go without. Several articles that appeared in the Peninsula Daily News during this time period shed light on a few of those projects:	

	June 16, 2004: "Tribal members look to help Neah Bay kids" A group of Makah tribal members is hoping to raise enough money to give elementary school children a place to play. "We need to raise about $70,000 for the new playground… All children should have a playground." The group has raised about $18,500… and the children completed a readathon to raise money. In a tepid show of support for the Tribe's children, "the Makah Tribal Council gave $5,000" towards the project. **July 18, 2005: "Tribal housing efforts face cuts"** The threatened cuts in federal funds for low-cost tribal housing would affect the Makah: Projected $300,000 loss. Housing needs for 50 families would probably not be built. Maintenance on existing units would be cut to "bare bones." Tribal members employed in maintenance would be laid off. Many families would continue to overcrowd	

	current housing, and some would remain homeless. Keeping a decent roof over the heads of all Tribal members should certainly be a top priority, even for the current "whaling" council. **Sept. 3, 2006: "Makah, Navy may resolve water crisis"** The Makah are working with representatives of the Navy to get a temporary back-up system (desalination) for drinking water, says Ben Johnson, Tribal chairman. … the Tribal Council declared a state of emergency last Tuesday. The impending water crisis has been looming for years, why was it ignored until water ran out? These three important issues: A safe playground for the children, housing for low-income and homeless Makah, and drinking water for the Tribe all came before the Tribal Council during the same time period that they authorized the expenditure of $675,000 on whaling related activities, including multiple group trips to Russia and Alaska. Here's a question for the next Household Survey: Do you approve or disapprove of the	

		way these precious Tribal resources were allocated?	
PCPW70	RE: Comments:	5.8 Social Environment For NMFS to conclude that "it is too speculative to consider whether the issue of Makah gray whale hunting would result in substantial cumulative effects within this larger social context" is to ignore all evidence documenting the "social effect" from 1998 – 2000. PCPW has submitted stacks of news clippings over the years. There is nothing speculative about the hurt, sadness, anger, frustration, protests, threats (to both sides) and physical confrontations that are all bound to recur as a cumulating effect of whaling. To call this "too speculative" shines a light on either the bias or the laziness in effect throughout this DEIS.	The potential effect of a hunt on the social environment was thoroughly explored in the 2008 DEIS in Section 4.8, Social Environment. The purpose of the cumulative effects analysis is to consider whether there are other activities that may combine with the alternatives to result in effects to resources not already considered in the analysis in Chapter 4. Because the potential impacts on the social environment were considered in Chapter 4, revisiting them in the chapter 5 cumulative effects analysis would provide no additional information to agency decision-makers. The comment points to no effects of past, present, or reasonably foreseeable future actions that might combine with the proposed alternatives to result in effects not considered in Chapter 4. The new DEIS includes any new information regarding the social environment, which is reflected in Section 3.8, Social Environment).
PCPW71	RE: Comments:	5.11 Aesthetics "… there may be some temporary aesthetic effects to those viewing hunts." Federal and State regulations refer to whales as "aesthetic resources." The WCA states that "whales are unique resources of great aesthetic and scientific interest to mankind." The MMPA calls whales "resources of great international significance, aesthetic and recreational, as well as economic." For NMFS to dismiss aesthetics with 6 cold lines about "viewing" the hunt, and to claim "no cumulative effects" is to reduce the meaning of aesthetics to a distaste for viewing the gore of a particular kill. Thus a "temporary" effect would be expected. What	The potential effect of a hunt on aesthetics is thoroughly explored in the 2008 DEIS in Section 4.12, Aesthetics. The purpose of the cumulative effects analysis is to consider whether there are other activities that may combine with the alternatives to result in effects to resources not considered in the analysis in Chapter 4. Because the potential impacts on aesthetics were considered in Chapter 4, revisiting them in the chapter 5 cumulative effects analysis would provide no additional information to agency decision-makers. The commenter points to no effects of past, present, or reasonably foreseeable future actions that might combine with the proposed alternatives to result in effects not considered in Chapter 4. To prepare the new DEIS, we sought new information regarding aesthetics (which is reflected in Section 3.12, Aesthetics).

		does NMFS believe the declarations of the WCA and the MMPA refer to, when they extol the "aesthetic resource?" The word "aesthetics" comes from a Greek word meaning "to perceive – to feel." Why is this word used by our codes of law to describe whales? In the same way that we value the preservation of the wilderness and the mountains so that humans can feel the awe and mystery of creation, many people feel a spiritual awe in the presence of the largest living beings on earth. The human psyche seems to crave this wonderment. It's not just about seeing a foot-square patch of gray skin. It's about how it makes you feel to see it. The aesthetic enjoyment of watching, photographing, and simply knowing that we live in a place where a whale might pop up at any time, is a heart-filling happiness to many. To raise children to be thrilled to the core to merely catch sight of a whale exhaling is to have hope for the future. For NMFS to reduce the aesthetic issues involved with whaling to simply the witnessing or not of the actual death of a whale is to not comprehend the words of the MMPA. Simply knowing that any whale seen in our home area could be a future target of harassment and death immensely reduces the enjoyment of seeing them. It actually creates a feeling of anxiety along with awe. To see kayaks glide gently past gray whales feeding in the neighborhood bays, revives the sad	

		feelings at the thought of whaling canoes gliding up to harpoon a whale who has known only kayaks. The aesthetic enjoyment of whales is as big and mysterious as the whales themselves. And whaling will take that magic away from so many men, women and children here and everywhere. Will there be a cumulative effect to the sadness generated with every whale death? That seems reasonably predictable. The cumulative effects of sadness will likely include frustration and anger. Aesthetic enjoyment turned upside down. We believe this would constitute a "taking" of our right to the aesthetic enjoyment of our resident whales. A right the MMPA was passed by Congress to protect, along with the whales themselves. Our resident whales must be left in peace so the non-lethal enjoyment of them can be pursued by the great majority who live on and visit the Olympic Peninsula.	
PCPW72	RE: Environment Comment:	5.16 National and International Regulatory It is fitting that the last paragraph in this uncertainly-laden and deficient DEIS is a mere 6 lines, two sentences. Each sentence containing the phrase "it is too speculative to conclude." And this on a topic of immense importance: Whether or not the authorizing of a Makah whale hunt will influence other domestic tribes or other countries to follow suit. If NMFS cannot or will not come to reasonable and informed conclusions on	The potential effect of a hunt on the National and International Regulatory Environment is thoroughly explored in the 2008 DEIS in Section 4.17, National and International Regulatory Environment. The purpose of the cumulative effects analysis is to consider whether there are other activities that may combine with the alternatives to result in effects to resources not already considered in the analysis in Chapter 4. Because the potential impacts on the regulatory environment were considered in Chapter 4, revisiting them in the Chapter 5 cumulative effects analysis would provide no additional information to agency decision-makers. The commenter points to no effects of past, present, or reasonably foreseeable future actions that might combine with the proposed alternatives to result in effects not considered in Chapter 4.

	these important questions, then NMFS has no business authorizing a Makah hunt and thereby creating a precedent for future requests.	The new DEIS includes updated information regarding the national and international regulatory environment, which is reflected in Subsection 3.17, National and International Regulatory Environment).
PCPW73	In summary, the following points are reiterated as being some of the main conflicts of interest and deficiencies in the DEIS.	This is primarily a summary of previous comments, with responses provided above. Some points raise in this summary were not made elsewhere in the comment letter. We have addressed those issues that appear to be raised only in the summary.
PCPW74	Conflicts of interest: ● Parametrix Inc.: The company itself, its preparers and sub contractors. Tourism issues are particularly suspect, as dealt with by Parametrix. ● Ann Renker Ph.D.: Her Needs Statements, her Household Surveys I and II, all references to her work in the DEIS must be peer-reviewed and reevaluated. ● Jennifer Sepez: References to her work in the DEIS represent the opinions and results of an expert with a personal bias. Taken together these three conflicts of interest completely taint the entire process and results. A new DEIS needs to be prepared by unbiased entities. The actions contemplated are too important, precedent-setting and far reaching to be entrusted to vested interests.	See the response to comments above.
PCPW75	No Analysis of: ● Which whales and how many whales are actually in the Makah U&A (near shore) in April and May. ● What is the OSP of the near shore Makah U&A? How can NMFS know how many to	See the response to comments above.

	risk removing from the small resident group without knowing how many the environment can support? ● Prey health and abundance on the outer coast of Washington in times of healthy conditions as well as during low oxygen/dead zone events? ● Alternative: whaling in migratory corridor only. ● The cumulative effect of whaling-related harassment on whales in the Makah U&A. For NMFS to conclude at 4.4.3 that the "increased risk" to the abundance of Makah U&A and ORSVI whales of Alt 2 - 6 over Alt. 1 "would be small," is not supported by fact or reason. The "1% of 20,000" argument does not hold water.	
PCPW76	No analysis of Makah proposals to: ● Not count strikes and struck and lost against quota for ORSVI whales. ● Share meat outside community. Where is analysis of the needs of those "outside community?" What percentage of harvest will leave reservation? Will there be monitoring, or will "don't ask, don't tell" be good enough for NMFS. What about meat to Vancouver Island? ● No analysis of: "Change their management plan periodically" – What does this mean? ● Likelihood of other domestic Tribe following Makah's lead; extremely important but not estimated. ● No analysis of importance of Makah U&A feeding sites during the 1999-2000 die	The comment points to no information, nor could we find information, regarding (1) the extent to which the 1999-2000 die-off differentially affected PCFG whales versus the larger ENP stock or (2) the extent to which southern feeding areas might buffer risks to northern feeding areas. Regarding the comment: "What do the Treaty words 'in common with' mean, as used by the 9th Circuit Court in Anderson v. Evans? How is 'aesthetic use' preserved by this DEIS," the purpose of the draft EIS is to analyze potential impacts of alternatives, not to explore or resolve legal debates.

	offs, considering that no identified whales were found stranded. ● No analysis of whether the Treaty of Neah Bay enshrines commercial whaling or not. Many more groups and individuals would be alarmed at this waiver request if they understood the will within the Tribe to continue pursuing commercial whaling. ● No mention or analysis of the high level of uncertainty in this DEIS. How much uncertainty is acceptable to NMFS in this precedent-setting action? ● What do the Treaty words "in common with" mean, as used by the 9th Circuit Court in Anderson v. Evans? How is "aesthetic use" preserved by this DEIS?	
PCPW77	No analysis in the DEIS of the numerous implications of the Sept. 8, 2007 "hunt": ● Tribal enforcement/Tribal court: all references need to be reassessed in light of complete failure of either to bring charges. ● "Spirituality" – whalers put a whale to death based on "frustration" – how do we forget that and go back to the story line of "spiritual hunts" when it is the same cast of characters? ● "Role models" – hard to continue justifying "need" for whaling that includes "role models." ● NMFS enforcement/investigation called into question by the utilization of John Haupt, a Makah Tribal member, to conduct the investigation.	Regarding the comment: "NMFS enforcement/investigation called into question by the utilization of John Haupt, a Makah Tribal member, to conduct the investigation." The commenter makes no connection between the analysis in the 2008 DEIS and the fact that a NOAA enforcement officer is also a member of the Makah Tribe.

PCPW78	Makah MMMP: - Jon Scordino – Makah marine mammal biologist – in spite of being tied off to the dying whale for at least 5 hours, could not or would not: - Take effective ID photos - Take tissue samples The fact that Jon Scordino is Joe Scordino's son raises many questions about conflicts of interest and vested interests between NMFS and the Makah Tribe.	Regarding the comment: "The fact that Jon Scordino is Joe Scordino's son raises many questions about conflicts of interest and vested interests between NMFS and the Makah Tribe." The comment makes no connection between the analysis in the 2008 DEIS and the fact that the marine mammal biologist employed by the Makah Tribe is related to a former NMFS employee.
PCPW79	Implication of the Tribal Council by all five Sept. 8, 2007 whalers in the decision to go whaling that weekend: - Someone is lying: the "role models" or the Tribal leaders.	Comment noted.
PCPW80	No analysis of impacts to Olympic National Park (ONP): ● Why did NMFS not consult with ONP on plans to allow whaling within the external boundaries of the Park? ● How can ONP visitor safety be ensured during hunts? ● What protocols are in place incase of a beaching of a wounded or dead whale on ONP beach? ● What will protocols be if Makah whalers pursue a whale onto the beach at ONP? ●	We did not include the Olympic National Park as a separate resource in the 2008 DEIS. Several resources we did analyze are relevant to the Park, such as recreation, tourism, safety, and aesthetics.
PCPW81	There were factors, controllable by NMFS, which made this process difficult for commentors. Years in preparation, the 900 plus page bulk of the DEIS is so unwieldy, that NMFS had to schedule special	It is common practice for federal agencies to hold public meetings during comment periods so that members of the public who wish to comment have an opportunity to interact with agency staff and better understand the documents before commenting.

	meetings, part way through the initial comment period, to help people understand how to use it. This postponed most commentors from beginning an analysis until after the meetings occurred. Extensions were requested in the 60 day comment period. There was a "likely" extension announced but no verification for some time. As the hugeness of the document and the numbers of problems to address became apparent, another extension was requested by a great many organizations. The request seemed reasonable and there were hopes it would be granted. NMFS took a great deal of time to "consider" the requests. When the refusal to extend came from Donna Darm, many were taken by surprise by her decision. Many commentors work full time in jobs other than reading through and commenting on documents such as this. It has been quite difficult to do justice to the task of adequately commenting on an issue of such long-term concern to so many. Especially for those of us who are not scientists or writers. Requests for DEIS references from the Portland office were responded to fairly quickly, but it was unfortunate that Steve Stone took a week off during this time. Some documents that we feel should have been provided were not. Some questions we asked were answered in evasive ways or not at all. Thirty more days of comment period would have been quite useful in acquiring information on our own, once we were told that is what we would have to do. More depth could have been added to topics touched on but not fully analyzed by us. Some topics had to be passed over completely due to lack of time. Hopefully the comments of others will fill the gaps in our own. Margaret Owens	We granted an extension of the comment period for an additional 30 plus days. We appreciate the time and effort demonstrated in these comments, and the efforts of the commenters in obtaining input from fellow citizens.

	Submitted for: Peninsula Citizens for the Protection of Whales 612 Schmitt Rd. Port Angeles, WA 98363	

P. Ness – Comments submitted August 15, 2008.

COMMENT CODE	COMMENT	DRAFT STAFF RESPONSE
PN1	All of the following text should be considered my comments. I will underline any direct quotes from the DEIS. NOAA, or someone, has put much effort into this DEIS, proven by it being an extremely lengthy document. I believe much of the statistics, research and text, however, was meant to cover up, manipulate and mislead the average reader from the truth. In general, when data has been listed correctly, the relevance has been downplayed or all out ignored. Overall, reading this huge document is a déjà vu experience. Once again it has been proven that NOAA is extremely biased in favor of the Makah, and has blinders on to ignore any contradicting information or research that would prove this waiver should never be granted. The stage has been set. Throughout this DEIS are threads tying together and leading to the exact same conclusion given a decade ago by NOAA…….the Makah can whale. Anywhere they want. Anytime they want. No regulations will be in place to protect the resident whales. No consideration for the negative economical effects on tourism in Washington. No adaptive management for the ill-fated consequences of too many whales being harassed and hurt. No recourse for how this will lead to numerous additional waiver requests. No limits to the amount of financial support NOAA will provide for the killing of a species NOAA is entrusted to protect. No consideration of the 'take' from tourists and the whale-loving population of the United States. No enforceable methods to oversee what the Makah tribal council does, or doesn't do, as in the case of the recent prosecutions of the illegal whalers' actions. One has to question, if NOAA is so extremely biased in favor of the Makah that none of the directives from the 9th Circuit Court matter, that none of the true science is important? This DEIS is based on inaccuracies, flimsy recommendations , decades' old research, not new research as directed by the courts, and overall will be an embarrassment in the scientific community also.	Comment noted.
PN2	Negative Economic Effects I have found this DEIS totally lacking in representing the negative economic and social effects returning to whaling will have in the neighboring communities of Clallam Bay and Sekiu, on the Olympic Peninsula and the State of Washington. Chapter 4 - Page 97 "Because the economic contribution of the Makah Reservation to the countywide economy is so small, the potential for any changes on the reservation under the alternatives to have a noticeable effect on economic conditions in Clallam County as a whole is negligible. Moreover, economic effects outside the reservation are expected to be negligible in the context of the countywide economy. For these reasons, potential effects on Clallam County as a whole will not be addressed in this analysis." **This is not only untrue, but a major cover-up of the facts by NOAA, or someone. By minimizing the role whaling has had on the Olympic Peninsula, you have done an injustice to this EIS process.** Is NOAA only considering, and basing their faulty conclusions, on a possible positive economic effect? I will present in my comments the negative economic impact to this area, as a direct result of the Makah's return	The DEIS states that any positive effects of a whale hunt on tourism (both locally and County-wide) could be offset to some extent if opposition to the hunt resulted in boycotts of Olympic Peninsula tourism activities, including boycotts of Neah Bay specifically. However, it would be speculative to estimate the economic impact on tourist-related businesses in the area, should calls for boycotts of Olympic Peninsula tourism occur. Therefore, the text of the new DEIS is similar to that of the 2008 DEIS.

COMMENT CODE	COMMENT	DRAFT STAFF RESPONSE
	to whaling. I predict the future negative economic effects of whaling will be catastrophic to the economy of the Olympic Peninsula, which is already struggling. I also will show that this DEIS is inaccurate and extremely biased due to NOAA's inability to present both sides of the economic factors related to the whaling episodes between the years of 1998-2000.	
PN3	Chapter 3 – Page 179 Additionally, Olympic National Park, which has attracted an average of 3.2 million recreation visitors per year since 1990 (National Park Service 2008),….. When checking ONP's web site statistics, it shows in 1998, Olympic recorded 269,702 fewer visitors than in 1997. Again in 1999, Olympic recorded 212,741 fewer visitors than in 1998. Again in 2000, Olympic recorded 36,544 fewer visitors than in 1999. Olympic National Park took a big hit, 518,987 (over a half million) fewer visitors to be exact, in the years the Makah were actively whaling. This DEIS does not provide adequate emphasis on how many thousands of visitors to Shi Shi beach access the trailhead on the Makah reservation. This trailhead has been utilized for many decades, and is one of the most used trails in the Olympic National Park coastal strip. The trail allows hiking in from the Makah reservation to Portage head, at the north end of Shi Shi. The Makah built a new parking lot for day hikers to Shi Shi. A Makah family has provided overnight parking in their fenced yard, for a small parking fee for decades. Obtaining a Back Country Permit (ONP) is required for an overnight stay on Shi Shi. During the period 1997 to 2001, fewer backcountry permits were issued in 1999 and 2000 than any other year. In addition, these Shi Shi hikers are the most exposed to gun fire according to where the whale hunts have taken place. NOAA's theory that because there are fewer ONP coastal tourists in April and May, whale hunting is safely justified near shore. This is ridiculous. Hundreds of hikers may be on that coastline - every day. I suppose bullet-proof vests could be sold along with the recreational use permits in Neah Bay.	Data presented in the DEIS that were taken from the annual travel economic impact report produced by the Washington State Tourism Office show that travel spending in Clallam County decreased in 1999 but increased in 2000. Because a Makah whale hunt occurred in both 1999 and 2000, it is uncertain whether the spending decrease in 1999 can be attributed to the whale hunt. To reflect the uncertainty about the impacts that whaling may have had on the tourism industry, Subsection 3.6.3.1.3, Tourism, has been revised as follows: "It is unknown whether businesses experienced a decrease in sales because of negative attitudes toward whaling by whale-watchers or other tourists, but it is possible that some businesses were affected." Information on the popularity of Shi Shi Beach campground is included in the new DEIS. Subsection 3.6.3.2.4 has been revised as follows: "Shi Shi Beach is a popular destination for campers during summer months. National Park Service public use statistics show that the number of "camper-nights" at Shi Shi Beach camp area increased from 2,341 in 1999 to 7,206 in 2011 (N. Hendricks, Olympic National Park, pers. comm., December 10, 2008; B. Bell, Olympic National Park, pers. comm., June 30, 2012)."
PN4	Liability	

COMMENT CODE	COMMENT	DRAFT STAFF RESPONSE
	I wonder how Olympic National Park feels about assuming the liability for hikers on the coastal strip, being accidentally shot with stray bullets from tribal actions, as we know, that are protected from liability litigation? Per Chris Melly, attorney for Clallam County, in a memo on file at the Courthouse, dated 9/29/98, he states, "The US Supreme Court recently ruled that Indian tribes were not amenable to suit unless 1) the tribe waived its sovereignty or 2) congress said they were." It's going to be interesting, isn't it?	
PN5	Table 3-16 - Page 180 Please note that overnight visitors to the Olympic Peninsula enjoy sightseeing/driving tours, hiking, wildlife viewing, visiting historical/cultural site (non-Native), and shopping in greater percentages than those visiting Native American sites. The top three categories are ecologically –minded, nature-loving tourists, of which the majority, do not support whaling. To attempt to push 'whale-hunting-tourism' through to reality, by supporting even the idea this could possibly work, as NOAA has done throughout this document, is absolutely ludicrous. If NOAA or Parametrix, as the case may be, believes this hogwash, you must think all Americans are idiots. Hope NOAA hasn't paid Parametrix for this! In the October, 1999 issue of the Olympic Peninsula Business Journal, in an article on Tribal Tourism, the Makah tribe's Tourism Planner admitted whaling has had an effect on tourism. She was quoted as saying, "Tradition of whaling aside, the Makah may have difficulty marketing nature to an eco-tourist, while tribal families are killing the creatures these same tourists willingly travel great distances to see."	Comment noted.
PN6	Tourism in general on the Makah reservation has not been welcomed most of the last 40 years. Vandalism to vehicles parked at the Shi Shi trailhead was common in the '70's and 80's. My personal vehicle had all the windows, front, back and side, blown out by gunfire in 1978 at the Shi Shi trailhead, along with four other vehicles. A family with children from Iowa, who were guests at our resort in 2001, had been chased off Hobuck Beach by a group of Makah young adults, being told they were not wanted on the reservation. I personally was with a group of kayakers on Hobuck Beach in 1993, and experienced a group of Makah men throw beer bottles, breaking them against the sides of our vehicles, while yelling to get off their land. In 2000, an elderly man was chased down the Cape Flattery trail by a group of stick wielding Makah young adults. A friend teaches school in Neah Bay. One day in class, in 2006, she asked the middle school children, "What would you do first if you ruled the world?" An eleven year old replied, "I'd kill all the white people!" These young adults are being fed this hatred in their tribal homes. The anti-non-native hostility is displayed by a portion of the tribe every day. Sadly, on the other hand, anyone objecting to the killing of gray whales has been called racist. In recent years, the tribal council has finally realized there's grant money available for trails, roads and the development of tribal tourism, but convincing the tribal members of the merits of tourism has not been easy. During the last decade, the whaling issue has set a new foundation for the 'us against them' mentality of the tribe. This crevasse will only deepen in the future between the Makah and the rest of the world, who dislike the tribe over the whaling issue. Those of us who live on the Peninsula, and/or very near the Makah reservation don't look at this tribe through the same rosy glasses NOAA wears.	Comment noted.

COMMENT CODE	COMMENT	DRAFT STAFF RESPONSE
	In the October 1, 2000 Peninsula Daily News, an article stated "Makah not necessarily open to tourism." The Makah tribe's Tourism Planner was quoted saying, "The tribes will control the tourism, rather than tourism controlling the tribes." In this same article, the Executive Director of the Makah Cultural and Research Center stated, "the way that the tribe operates dancing has absolutely nothing to do with tourism. We're smart enough to know people would pay money to see that, but we're also smart enough not to do it." Finding a means to earn great sums of money from the commercialization of whaling, without having to deal with outsiders to the reservation is very attractive to the opportunistic tribal council.	
PN7	Chapter 3 - Page 181 The statewide growth rate of travel-related spending also slowed after 1999, with the statewide slowdown similar to the change in Clallam County (Table 3-18). This is untrue. Table 3-18 - Page 181 Clallam County, between the years of 1995-2003, only experienced a negative loss in 1999, a full two years before the State of Washington registered any significant downturn in travel spending, which occurred during 2001 & 2002. In the October, 1999 Olympic Peninsula Business Journal, the Clallam Bay - Sekiu Chamber of Commerce reported a weak June, July and August. Sequim, Port Angeles, Quilicene and Port Townsend were down also. The cartoon showed a boat, named "Tourism '99 North Olympic Peninsula", sinking. On a good note, the editorial for this issue stated Eco-tourism time has come to region, and predicts whale watching best new business. The business leaders of this Peninsula were hoping then to turn the tide towards a more beneficial economic focus. In the Peninsula Daily News, 8/15/08, appears an article by Dan Youra, President of the Olympic Peninsula Travel Association. He states there has been 123,800 fewer vehicles crossing the Hood Canal Bridge to the Olympic Peninsula, since 1/1/08. With each trip being conservatively valued at $100 spent per vehicle, this adds up to a $12 million lost in business and a $1.2 million lost in tax receipts to the North Olympic Peninsula, with $7 million missing during peak tourist season. Mr. Youra states tourism is the main industry. "We've lost timber and fishing. Now, we are losing tourists." He goes on to say, "In 30 years, I have witnessed big changes in the number of travelers to the North Olympic Peninsula. They increased in the '80's and '90's, but those numbers have been stagnant since 2000. Now they are decreasing. The situation is serious." This is not the right time to create another huge decrease in the economy of the Olympic Peninsula, by authorizing the return to the killing of gray whales, one of our most important natural resources. This can not be mitigated in any way!	Comments noted; we have updated relevant information in Subsection 3.6, Economics of the new DEIS.

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PN8	Chapter 3 – Page 19 DEIS states the Makah Cultural and Research Center averages 14,000 visitors annually. **This figure is inflated to look good.** Chapter 3 - Page 188 The Makah Museum visitations have steadily, overall, decreased over the six year period listed of 2000 - 2006. Evidently, the Makah tribal members were included in the higher statistics. The latter (page 188), were indicated as Non-Makah visitors. The significant difference between the sets of statistics has the appearance of data manipulation. Doesn't this mean fewer non-native visitors to Neah Bay are less and less interested in the culture, or perhaps they don't want to see the whale skeleton from the 1999 whale hunt? (By the way - what happened to the statistics from 2001? I would guess they revealed a significant drop?) Let's look now to the Dean Runyon study of 1995, where 15,000 – 20,000 visitors to MCRC were reported. **How can the statistics from 2000-2006 not be an indicator of a very significant economic downturn in Neah Bay itself, from the return to whaling?** Chapter 3 - Page 189 The annual recreation fishing permits sold by the tribe, have decreased yearly. In 2004, 616 permits were sold, to just 460 permits in 2006, 156 fewer permits. Chapter 3 – Page 197 It is unfortunate that NOAA believes anecdotal information from the Seattle Times is an appropriate source of economic information. A brassy reporter is not an economist. It also is a manipulation of the truth to quote Rick Hert, NOPVCB, who had indicated room tax figures from Clallam County hotels and motels appeared relatively flat during the summer of 1999. **This is inadequate and misleading information.** The truth of the matter is that room tax figures had been growing prior to that summer, therefore, 'relatively flat' (whatever that means?) indicates a significant drop in income from accommodations in the unincorporated portion of Clallam County during the summer of 1999. Regarding the Neah Bay Marina in 1999, NOAA printed: "Last, Bob Buckingham, manager of the marina in Neah Bay, was quoted as saying, "We haven't seen any sign of that [the hunt] affecting us out here. Our actual marina revenue is up from last year so far. We're getting quite a bit of tourism up here." **This is untrue.**	The statement that the Makah Cultural and Research Center receives approximately 14,000 visitors and researchers annually has been deleted in the FEIS. Data presented in the DEIS that were taken from the annual travel economic impact report produced by the Washington State Tourism Office show that travel spending in Clallam County decreased in 1999 but increased in 2000. Because a Makah whale hunt occurred in both 1999 and 2000, it is uncertain whether the spending decrease in 1999 can be attributed to the whale hunt. To reflect the uncertainty about the impacts that whaling may have had on the tourism industry, Subsection 3.6.3.3.1 has been revised as follows: "However, information about the economic effects of the Makah Tribe whale hunt on tourism is incomplete, and it is possible that some businesses experienced a decrease in sales because of negative attitudes toward whaling by whale-watchers and other tourists."
PN9	Table 3-39 – Page 272 This table indicates that during 1999, a significant drop in recreational fishing vessels was recorded in the Neah Bay Marina. This was further substantiated in the Peninsula Daily News article of July, 1999, on record. The owner of Big Salmon, in Neah Bay, stated that his business, and other resort owners had also stated, fishing business was down quite a bit from past fishing season openers. He stated he leases 200 slips in the Makah Marina and would typically fill them. This year (1999), only 75 boats have signed up. He went on to attribute the decline in part to the killing of the gray whale in May, 1999.	Comment noted.

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	In this same article, resorts contacted in Sekiu stated the number of boats on their docks were also down when compared to other years.	
PN10	Table 3-37- Page 269, Figure 3-11 – Page 270, and Table 3-38 - Page 270 Average weekday traffic counts on Hwy 101, near State Route 113, are not representative of actual traffic on Hwy 112. It is not known where these counts originate, as 'near' could mean west of Hwy 113, which would be totally irrelevant. Most visitors to Neah Bay travel Hwy 112, from west of Port Angeles, and would not be counted in the statistics of these tables. **This is non-relevant information, and typical of Parametrix style.**	Comment noted.
PN11	Chapter 3 – Page 198 Congress also found that "marine mammals have proven themselves to be resources of great international significance, aesthetic and recreational as well as economic" (16 USC 1361(6)). Congress meant live whales. Prior to the IWC meetings of 1997, forty-four members of Congress signed a declaration to the IWC to not approve gray whale hunting by the Makah Tribe. Those congressmen, representing their constituents, felt this hunt would yield negative impacts on both the tourism industry and the ecological environment of the Pacific Northwest, which it has. On June 18, prior to the IWC meetings of 2008 in Chile, Congress passed House Concurrent Resolution 350 to protect whale species. "From sea to shining sea, Americans love whales, and the U.S. has a record of leadership in whale conservation of which all our citizens can be proud. Now, American leadership is once again needed to help end commercial whaling once and for all." Also highlighted were alternative measures taken to promote whale conservation, including responsible whale watching, which IFAW analyses indicate is now a US$ 1 billion dollar-a-year industry for coastal communities and businesses in more than 90 countries and territories worldwide. "Animals and people both do better when whales are seen and not hurt. We are hopeful that with strong U.S. leadership, next week's IWC meeting will chart a new course for the commission and whale conservation in the 21st century." Are the U.S. Delegates, NOAA and the Makah listening? Do you care? The world is at odds against the countries who have returned to whaling. Country is pitted against country. The world has, in my opinion, always looked to the U.S. for strong guidance. NOAA is harming our image in the world, and you are letting all Americans down with supporting this tribal whale hunt. Your decisions will haunt those of us who live on the Olympic Peninsula for years to come. This DEIS is a disgrace to what we all stand for.	Comment noted.
PN12	Chapter 3 – Page 199 Whale-watching primarily occurs during autumn and spring, corresponding with the annual southern and northern migrations of the gray whale. **This is untrue.** It is well known that the Quileute Tribe in LaPush, has developed a significant niche in the market of eco-tourists who stay in their Ocean Park Resort during the gray whale migrations, especially in the spring. According to the Olympic Peninsula Business Journal of June, 1999, people have been coming to LaPush for	The 2008 DEIS noted that tours to see locally feeding gray whales during the summer feeding period are available from April until October or November. However, gray whale watching trips taper off in May, as many of the charter boat operators shift

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	the past 40 – 50 years to watch gray whales as they migrate north to Alaskan waters. Whale watching season is different on the Northwest Coast, when the whales feed close to shore during the summer months. Viewing whales along the coastline of the Strait of Juan de Fuca, is a significant tourist draw for the resorts between Neah Bay and Clallam Bay. From May through October, during the peak tourist season for the Northwest Coast, thousands of ecologically-minded, nature-loving tourists travel just to see a whale. They are rewarded with frequent sightings of the resident gray whales that feed up and down this coastline, not only during that period, but all year long.	their offerings to sport fishing during the summer months.
PN13	<u>PCFA</u> I believe the renaming of these whales the Pacific Coast Feeding Aggregation is ridiculous. NOAA has spent probably, hundreds of thousands of dollars trying to cover up calling these whales 'resident whales', which is what they are! Not including the Straits of Juan de Fuca in the PCFA survey areas of study was another aspect to this cover-up. One of the goals for this DEIS, was to have determined how many resident whales exist, you know how to do this - take their pictures, compare with known identity catalogs, such as those John Calambokidis has developed. Instead, NOAA claims to have a different catalog of photos. This is difficult to believe. Why was there no cooperation with the leading scientist in Washington State regarding these resident whales? If the Makah don't whale, NOAA's photo project won't even be funded. I hope the only photos NOAA plans on taking aren't those of the dead whales! Please answer why identification photos were not taken, or released, of the whale killed in September, 2007? Yet another cover-up! Or is funding the photo project if the Makah do whale, just another way to give the Makah $65,000 a year? I hope that goes out on bid. If NOAA was truly interested in conducting adequate research into the resident whale issue, perhaps the Quileute Tribe would be interested in taking these photos? They need the financial support also, and have access to most of these whales, and demonstrate an attitude supportive of these whales, with no hidden agendas. Why couldn't NOAA reveal what is already known, that these resident whales feed up and down the Strait of Juan de Fuca, in and out of the PCFA survey areas, however, remaining in the Straits for months on end. There is a great deal of good research that already has determined these whales should be protected. They are a limited resource. The courts agreed. Instead, NOAA pretended they didn't exist, and apparently, will soon allow the Makah tribe to kill the entire resident population within a few years. What a waste solely due to NOAA's stubborn arrogance! The entire topic of PCFA, and how NOAA has chosen to deal with this issue, is one of the weakest elements to this DEIS. Even the recreational fishermen state they like fishing out of Sekiu in the summer as they frequently saw the gray and humpback whales. Some summers, the fishermen actually have a difficult time maneuvering around the whales at a safe distance. That was the scene in September, 2007, off Seal and Sail Rocks, when many fishermen found themselves in the middle of a gun fight between five Makah men and one gray whale.	As part of its implementation review for gray whales, the International Whaling Commission's Scientific Committee recently reviewed the best available information regarding these whales (now referred to as the "Pacific Coast Feeding Group"), the PCFG range, and the implications of the Makah Tribes hunt proposal. The results are included in the new DEIS under Subsection 3.4.3.4, Pacific Coast Feeding Group (PCFG) of Gray Whales. Regarding the whale killed in September 2007, its identity and sighting history was later described in the report by Calambokidis et al. (2009) "Summary of collaborative photographic identification of gray whales from California to Alaska for 2007. Final Report for Purchase Order AB133F-05-SE-5570. April 2009"
PN14	<u>Safety</u>	In response to this and other comments, the new DEIS does not include an

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	Are the thousands of tourists, fishermen, divers', kayakers' and hikers' safety at risk from unknowingly finding themselves in the middle of a whale hunt? Absolutely! After witnessing how dangerous the illegal whale hunt of 9/07 became, it should be NOAA's prime responsibility to guarantee the safety of others when selecting where the Makah may hunt, if approved. Allowing whale hunting during the summer, in the Strait of Juan de Fuca, will never, ever be safe for other recreational activities. This DEIS ignores one expert, and finds another that concludes there is a safe way to shoot a 50 caliber rifle in the Strait of Juan de Fuca, without putting the tourists standing on the adjacent beach, at risk. The whalers' behaviors demonstrated in the illegal hunt of 2007, i.e., at least 16 gunshots, should be evidence that someone is going to get hurt one of these days. There is another risk factor in this equation. The whale itself could explode into a frenzy that would put any other person in the vicinity in danger. I can not fathom how NOAA can even consider allowing whaling in the Strait of Juan de Fuca.	alternative that contemplates hunting in the Strait but does explore an alternative of an offshore hunt (Alternative 3).
PN15	<u>Coastal Tourism</u> My husband and I owned a resort on this coastline, roughly 10 miles east of Neah Bay, between the years of 1996 and 2008. The majority of guests at our resort were naturalists, traveling from all over the United States and the world. They came to see this rugged coastline, and to glimpse a large whale. During periods of active whaling in September-October, 1998, May, 1999 and June, 2000, our records show numerous cancelled reservations. The reasons were always the same. We do not want to visit during a whaling episode, we don't want to witness whales being harpooned and killed, and we don't want our children to be exposed to these actions. Many were concerned with their safety from the use of high powered rifles. Some did not want to be in the middle of a confrontation between law enforcement and active protestors. By 2000, most potential guests would first ask if the Makah were whaling before they would even make a reservation. Of the tourists that did stay with us, most expressed being horrified that our government couldn't stop the whaling. I was sure to tell them that it actually was our government helping the tribe to kill the whales. It repulsed them. Hundreds of times I listened to a guest state that they had seen a whale that day, and thanked GOD it was still alive! We felt whaling had a significantly negative financial impact on our peaceful resort. Whaling deterred the very guests we were spending our advertising money trying to attract. But worst of all, those hundreds of guests that did stay, showed me the depth of despair, the true emotional sadness, the immense respect, the level of worship they all had for the whales. The feelings of all of the quiet protestors are being ignored, while it is sickening to realize how much attention has been given to the historical respect the Makah, supposedly had at one time for the whales, who now are demanding with ultimatums the right to use violence to find that respect again - the same respect the rest of us already have! Also affected are the thousands of residents of the Olympic Peninsula themselves. They know the whales are on the Northwest Coast during the summer. Day trips to hike along the beaches with hopes of seeing a Gray, humpback, minke or Orca, are part of life for the nature loving residents of the Olympic Peninsula.	Comments noted.

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	Besides lost revenues in accommodations by overnight tourists, Clallam Bay and Sekiu lost revenues in their restaurants, gas stations, and grocery stores, having already taken a hit due to the actions of the Makah tribe, they stand to lose the most by what's ahead.	
PN16	The Corridor Management Plan for the national scenic byway designation for Highway 112, produced by the Washington State Department of Transportation and Clallam County in 2000, by Parametrix I might note, states whale watching along that coastline was strongly emphasized as one of the lead activities, with even a drawing of a gray whale printed within this plan.	Comment noted.
PN17	When I first learned of Parametrix also working with the Makah tribe, to develop a tourism plan in conjunction with the tribe's scenic highway designation, I knew they would then have to change gears, and promote whaling. I was struck by the ability of Parametrix to appear so unethical, but then I realized it was just about the money…….they were being paid to say whatever was necessary - even if it wasn't true! The Clallam Bay - Sekiu Chamber of Commerce has a web site directed at appealing to tourists from around the world to visit, with whale watching listed throughout this web site, along with an award winning photo of a whale tail. Hundreds of thousands of inquiries from around the world access this web site all year long. How can the Chamber of Commerce quantify the damage through the misrepresentation of attracting tourists to come watch the whales, when less than 10 miles away these same whales are being killed? The economic fallout from this polarized view of respect for whales will have a long-term affect on the communities that share the coastline with Neah Bay. Clallam Bay and Sekiu have suffered from the cutbacks in logging and commercial fishing, and are overly dependent on recreational fishing, with imposed season cuts looming yearly. Tourism is the most viable industry to fill the economic gaps. Whaling will surely have drastic affects on coastal tourism, and will hit these small neighboring communities very hard. Is there a significant negative financial consequence to the businesses outside of the Makah reservation? Absolutely! Could this be why NOAA chose to avoid this issue for consideration? Absolutely! **This is a cover-up.**	The substance of this comment is responded to in previous responses to comments.
PN18	<u>Boycotts</u> As of today, 8/14/08, there are 96,400 web sites on Google for the topic 'whaling boycotts'. They cover around the globe, in every single country, in every single manner possible, where whaling has been, is, or will be considered. Country after country, documentation is floating to the surface that whaling has devastated tourism. Is NOAA paying attention here, or has NOAA become so blinded, or arrogant, that this huge body of information is not even being considered? I just don't understand how NOAA can continue with attempting to re-create the wheel in making statements that the negative effects will be minimal. The only conclusion I can arrive to is that NOAA doesn't care. Has there been a boycott of the northwest coastline? Absolutely! Once the Makah's whaling was stopped in court, many felt it had been stopped permanently. I believe the boycotts threatened during the active whaling episodes (1998 -2000) should be taken into consideration yet.	The substance of this comment is responded to in previous responses to comments.

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	The passionate negative comments received during the previous whaling episodes still apply. These people have not changed their minds. I've heard NMFS state, as I remember it….."well, only a few people attended the scoping meetings", or "no one has been protesting whaling in years", or "we don't think anyone objects to whaling presently". Not true! NOAA made a big deal in the DEIS of the protestors being a small group of misguided, law-breaking, rebels to be mistrusted and/or feared. Yes, a few of the active protestors may have crossed over the line in getting the attention they needed, to expose this issue to the rest of the world. Their actions worked, and it was because of their actions that the news media blitz occurred, in protest of the whaling, not in support of the Makah tribe. NOAA has minimized the harm to two of the protestors by misrepresenting what actually happened. The protestor thrown off the dock in Neah Bay, was not hurt by that action, however, when he reached shore, he was pushed down on the ground, caused a bleeding wound to his head. The second misrepresentation was over the jet ski incident, where NOAA states she ran into the Coast Guard boat, when in reality, the boat ran over the jet ski. Let's tell the truth here. The protestors were passionate - not evil.	
PN19	Whaling Protest Letters, Emails and Phone Calls I believe this DEIS minimizes and shows absolutely no regard for the millions, who themselves are to this day, protesting whaling at a different level, in a different way. Treaty or no treaty, how can thousands of American opinions mean nothing? Isn't this where the "in common with" language demands these opinions be considered? My understanding of the ruling in Anderson v. Evans is that the tribe may not exploit the whales to the detriment of other non-tribal citizens' rights to also use the whales for other non-consumptive purposes (whale watching, e.g.). As this pertains to the resident whales, the Makah do not have the right to kill them all. NOAA does not have the authority to allow that to happen. Again, this is a 'take', and against the law. **This may be one of the main issues that will return this case to court.** The DEIS included these statements and figures: - Although most letters and calls received by newspapers after the successful 1999 whale hunt opposed the whale hunt, - The *Seattle Times* reported that they received almost 400 phone calls and emails running about 10-to-1 against the hunt within hours of the Makah Tribe's successful kill of a gray whale (*Seattle Times* staff 1999). - More than 350 groups from 27 countries have expressed opposition to the Tribe's whale hunt (Oldham 2003). - Of those Clallam County residents who expressed a view during scoping, more expressed disapproval of than support for the hunt. - Another local group, Washington Citizens Coastal Alliance, based in nearby Friday Harbor, sent out a travel advisory to several hundred travel organizations, media groups, and individuals, expressing opposition to	Comment noted.

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	whaling (Hamilton 1999b). The advisory warned potential tourists to Neah Bay of recent conflicts and violence stemming from the whaling issue. - The *Seattle Times* reported that other activists have said that the controversy was ripping apart rural Clallam County and Washington as a whole (Welch 2001). - After the successful 1999 whale hunt, 25 Tribe members and the Coast Guard received emails and phone calls with death threats and anti-whaling messages (Hamilton 1999c). I would like to add that thousands of emails, phone calls, and verbal comments against the return to whaling, were received by the Makah Tribe, up to and including the present. Hundreds of emails and phone calls against the return to whaling were received by the Clallam Bay - Sekiu Chamber of Commerce, with all of them stating they would not return to the Clallam Bay or Sekiu area again, which was a tourism boycott, because of the whaling. The Forks Chamber experienced the same comments against the return to whaling, with additional tourism boycotts. Clallam County I have tallied, with the assistance of three other volunteers, all of the comments, in email, fax, letter and phone calls, received by the Clallam County Board of Commissioners concerning the Makah's return to whaling. I will be providing several comments that have been copied verbatim from the Commissioners' correspondence, that I found thought provoking. All of this information is legally on record at the Clallam County Courthouse, in Port Angeles, Washington. All of these documents were received between 12/16/97 and 6/9/99. The following countries around the world sent in comments against the return to whaling by the Makah tribe. Indicated in ( ) behind the country's name, will be the number of individual documents from that particular country submitted as comments. Some of the documents represented from one to thousands of individuals. Australia (7) Belgium (2) Canada (822) England (13) France (4) Germany (2) India (1) Ireland (1) Malaysia (1) Mexico (2) Newfoundland (1) New Zealand (5) Nova Scotia (1) Russia (1) South Africa (2) United Arab Emirates (1) -13-	

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	Here's the same type of listing for States within the United States, however, a comment may be for or against the return to whaling by the Makah tribe. Alaska (1) Arizona (3) California (167) Colorado (3) Connecticut (1) Florida (18) Georgia (8) Hawaii (7) Idaho (1) Illinois (5) Indiana (2) Kansas (1) Kentucky (1) Louisiana (3) Maine (2) Maryland (1) Massachusetts (15) Michigan (74) Minnesota (4) Mississippi (2) Missouri (3) Nevada (1) New Hampshire (2) New Jersey (3) New Mexico (1) New York (26) North Carolina (6) Ohio (4) Oregon (16) Pennsylvania (2) Rhode Island (2) Texas (7) Utah (3) Vermont (2) Virginia (4) Washington (663) Wisconsin (4) Wyoming (1) The totals for opinions were 30 people in favor of the Makah tribe's return to whaling, and 14,690 people against, with most promising to boycott the Olympic Peninsula, Washington State and/or all Washington products. Within the documents on file at the Clallam County Board of Commissioners' office were several organizational resolutions and petitions, passed against the Makah tribe's return to whaling, that were received during the period 12/97 – 6/99, from the following groups: Animal Protection Institute of America - six pages of groups opposed British Columbia, Canada, Premier Glen Clark Coastal Commission of California Depoe Bay, Oregon, Chamber of Commerce Depoe Bay, Oregon, City Council District of Tofino, British Columbia, Canada District of Victoria, British Columbia, Canada Friday Harbor City Council International Wildlife Coalition, Ontario, Canada, Vice President	

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	He provided results of a survey conducted by Vancouver, B.C. Television. Results were: 74% polled do not support the Makah's right to hunt whales, 76% polled were against a ceremonial hunt, and 92% polled were against a commercial hunt. -14- Here's a continued list of resolutions received by the Clallam County Board of Commissioners' office, passed against the Makah tribe's return to whaling. Malibu, California, City of, Resolution Monterey County, California San Juan County, Washington, Board of County Commissioners, Resolution San Juan County, Washington, Marine Resources South Island Metis Nation, Victoria, British Columbia, Petition - Chief and entire tribe of 752 members District of Vancouver, British Columbia Washington State Legislators, Morris, Dunshee and Quall Westport, Washington, City Council My conclusions, from having read through these resolution documents, are the entire western coastline of the United States, from Mexico, through California and Oregon, along the coast of Washington, throughout the San Juan Islands, and including the entire coastline of British Columbia all agree that these whales do not belong just to the Makah tribe, that they, and other marine mammals, belong to everyone. One comment stated due to the fact these whales were born in Mexico, they really belong to the Mexican government. I will now list verbatim, comments from some of the documents that came in from various countries and states within the U.S., that I found represented many of the main issues. -"A live whale will return year after year to support your communities. A dead whale loses its economic value." -"We adults preach conservation on one hand and then make decisions that baffle children on the other." -"To set a precedence of hunting whales again now would only erase all the hard work the conservationists of the world have dedicated to saving our oceans." -"You will set back the conservation efforts of the last 50 years." -"It is extremely illogical that we have an industry built around whale watching just south of the area where the Makah will kill them." -"I'm against using U.S. resources in assisting a sovereign nation to hunt whales in U.S. waters is wrong." -"The Makah tribe will survive without killing whales."	

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	-"My husband is native. We both oppose whale hunts as do all our First Nation friends and acquaintances. Cultural heritage angle does not wash." From the documents addressing boycotting this area, county or State come a sampling of those comments: -"The desire to pretend that this is the 19th century is not sufficient justification for undermining International covenants on conservation. There is now overwhelming evidence that the Makah are looking forward to the day when their trade partners succeed in relaxing regulations sufficiently to once again allow for an international trade in whale products." -"This whale hunt is making our State look pretty bad." -"Whaling is a monumental stain on the image of the State of Washington." -"I have been visiting Washington State for the past 5 summers - but no more." -"We are cancelling our trip through your state and will continue to boycott anything related to Washington state." -"We plan to stay away from the whaling capital of the U.S." -"I will not be traveling to the Olympic Peninsula." -"Just to let you know we were regular visitors to WA (from Vancouver, BC) and the area, but we will not be visiting again, or spending another dime in the States as we are disgusted by what has happened with the Makah whale hunt." -"I am not at all proud to be living in the leading bloodbath state." -"Watching the Olympic Coast be transformed from one of our favorite ocean retreats to the whaling capital of the USA, has been devastating as it will surely be to Clallam County's tourism trade. Like us, many in Washington will be spending their tourism dollars at Long Beach or Ocean Shores now." "My company has considered establishing a base in your area. We have decided we will not." "I will not be able to travel to your county even though my family loves the beach." "I will not spend one dollar in a place that advocates whale killers." "I for one will make sure that when I travel west that I will avoid your area at all costs." "I will not come anywhere near Washington State." Now – can NOAA, or any reader believe the cumulative negative economic effect from the return to whaling doesn't exist??? I have read in this DEIS, NOAA believes the effects are "minor" and "temporary" and not cumulative on the local economy. You are wrong! NOAA has also stated "boycott attempts, however could reduce any long term benefits from tourism". Now there you are right! Does this appear to be double-talking to anyone else but me? By trying so diligently to downplay, disregard, ignore and minimize the negative economic effects the Makah's return to whaling will have on the rest of the Olympic Peninsula, Washington State and the U.S., this DEIS has become a meaningless, garbled mess. The return to whaling has been already, and will always be in the future, devastating for the economy of all, including the Makah, that is, unless they make millions from the whales, then they won't feel the sting, but we all will.	
PN20	<u>Individual Topics from DEIS</u>	

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	Due to the lack of adequate time to prepare my comments, I will now jump from topic to topic with questions and/or comments that I did not feel were adequately addressed or answered in the DEIS. Chapter Four If individual families were to finance hunts under the action alternatives, the economic impacts on some Makah households could be substantial, given the high costs of supplies and services necessary to participate in the numerous activities related to whale hunting. Is this NOAA putting their foot in the door to finance the Makah's whaling - AGAIN? When did NOAA adopt this tribe, and agree to support it forever with my tax dollars? I speculate another known costly effect of whaling can be found by looking at NOAA's own present or future budgets?	
PN21	Renker's Needs Assessment I find this research to be biased and full of conflict of interest due to her husband being an influential member of the whaling community. I believe it possible only whaling families were questioned, altering the survey results to obtain the statistics wanted in support of whaling. She has not questioned the same number of people in true research format, however, has manipulated her R population throughout the questions. She jumps around from questioning 163 – 145 – 152 – 268 – 20 – 79 – 58 – 77 – 59 – 82 – 100 – 101 – 214 – 105 – 180, depending on the question in her survey. This research should either be removed from the DEIS, or redone. Renker's tribal survey found that 81 percent of the respondents consumed whale products (blubber, meat, or oil) obtained from the 1999 hunt, although 87 percent would like to have these products available in the future (Renker 2002). Sepez (2001) also quantified the consumption of whale products obtained from the whale taken during the 1999 hunt. The whale provided roughly 2,000 to 3,000 pounds of meat and 4,000 to 5,000 pounds of blubber, most of which was consumed at the community potlatch. Community households received approximately 1.8 pounds per capita distribution of blubber. Together with the estimated 0.55 pound of meat, Sepez calculated that the whale products consumed in 1999 equaled about 2.4 pounds per capita. All of the above calculations are misrepresented and in error. According to her assessment: - 63 (39%) of households did not receive whale meat from the 1999 whale. - 48% either gave it away or did something else besides prepared it. 32% gave it away. - 86 (52.8%) did not receive blubber and 43% of the 79 polled didn't want blubber. - 28% don't want future whale oil - 13.5% don't want future whale meat - 44.2% don't want future blubber - 75.5% do want whale bone. [Sounds to me like commercial enterprise.] One last comment regarding subsistence needs. I have purchased weekly groceries at Washburn's Store in Neah Bay for many years, as it was closer to my residence than the Clalllam Bay store, which eventually	The substance of this comment is responded to in previous responses to comments.

COMMENT CODE	COMMENT	DRAFT STAFF RESPONSE
	closed. Washburn's does an amazing business, provides food goods to every single Makah, and offers all the meat and vegetables of a full scale grocery. The Schwan's frozen food, home delivery, truck spends one full day in Neah Bay, every week and cleans the truck out every trip. It easily could be proven exactly how much regular good 'ole American food is consumed on a weekly or daily basis in Neah Bay. I think this data would surprise most of you, and would once again prove Renker's needs statement full of glorified misinformation. All through this DEIS, the stage has been set for the Makah to commercially sell their whale bone products within the U.S. If they are so keen on selling bone products, they could start with elk, deer or bear for example. I can not support an entire whale being sacrificed mainly for the bones, to create a market that presently doesn't exist, or to give away the food products to others, or to benefit commercially from these whales after they have been killed. What a horrible ecological waste, don't you agree? All of us who have been watching for the last decade, have few doubts that the long term plan includes, adding humpbacks into this equation at some point, sea otters and other marine mammals will be next, building the processing plant on the reservation, or purchasing a processing boat to use off shore, and striving towards commercial whaling as soon as possible. It was the Makah tribe's goal in the early '90's, and NOAA was aware of the tribe's commercial intents from the beginning. How horrible to sit back and watch how this depressing scenario plays out. NOAA is the main accomplice to this crime - and we all know it. I also can not support most of the whale meat and blubber being used for the Makah tribe to host a community potlatch for other natives. What will they be getting in return, status or money? I believe this entire process needs to be transparent, with no secrets behind the scenes. Where exactly does the dollar originate (NOAA?), whose hands does it go through (Makah Whale Research?), and who benefits (Tribal Council?) from the spending of my tax dollars? The most surprising to me was that from Renker's survey, only 35.5% want to hunt whales for nutrition or food reasons. Seems like NOAA inflated that figure significantly, didn't you? Makes me wonder just how much of this entire DEIS has been fabricated to look as if the tribe has only honorable intentions? Again, Renker's research is totally flawed.	
PN22	<u>Stinky Whales</u> NOAA needs to update information on Stinky whales. According to the IWC web site data from the 2008 meetings, the Russians presented a report, claiming the chemical compounds identified from stinky whales are used for extinguishing fires, however, are not used in Russia for fire suppression. Flame retardants appear to be the cause of the smell. Japan has asked the U.S. to identify the chemical compounds used in fighting mountain and forest fires in North America. <u>Table 3-44</u> Results indicated PCB and DDT levels were much higher in the tissue samples from the Makah whale in 1999 than from any of the other samples taken for any of the other whales tested. The text on page 3-302 appears to minimize this issue. Do the Makah have an understanding of how toxic whale meats are for their	The substance of this comment is responded to in previous responses to comments.

COMMENT CODE	COMMENT	DRAFT STAFF RESPONSE
	consumption? Has anyone developed a monitoring procedure to prevent consumption if the testing shows too much contamination?	
PN23	Treaty Issues During the protesting in 1998, while the reservation border was road-blocked, the State Patrol upheld the Treaty law, and required all vehicles coming in to the reservation to turn over all of the noticeable alcohol in the vehicles. A considerable amount of alcoholic beverages of all kinds were confiscated. The tribal police unit then obtained the alcohol from the State Police and turned it back over to the tribal members from which it had been taken. I have a problem with only bits and pieces of the treaty being upheld, while other parts are being ignored. I believe to uphold this treaty and receive the waiver to whale, the entire treaty must be honored and alcohol must be off the reservation. A second treaty conflict applies to the Makah treaty prohibiting trading with Vancouver Island. The waiver may not grant off reservation trading, gifting, selling, whatever to anyone of Vancouver Island. Even though the Makah tribe pushes honoring the treaty into the faces of all of us, they should be careful what they are asking for. Fair is fair.	Comment noted.
PN24	Drug Issues In an article on the Seattle PI on August 20, 2007, the following story was sadly told. "Neah Bay, a native fishing village at the extreme northwest tip of the continental United States, has been devastated by illicit drugs. About six in 10 homes owned by the Makah Tribe are contaminated with meth residues, according to a tribal study. Tribal police say assaults and thefts -- and fatal overdoses -- are on the rise. "It's really bad and sad to see," said tribal Chairman Ben Johnson Jr. "The children are really taking a beating. We've had meth babies born here. But it's tough to even get the FBI out here." Now let's return to the issue of the whalers who have failed drug and alcohol testing before whaling episodes. One of them has a prior felony for heroin possession, from just a few years before he was in the whaling canoe. How is NOAA proposing to regulate the clean and sober whaling crew before giving them guns to use in public areas? This is significant and needs to be transparent also.	Comment noted.
PN25	Regulation With the recent implications of the Tribal Council by the whalers themselves, it was finally uncovered that the Council had indeed given their blessings to the illegal hunt. The Council chairman had gone on record in the Peninsula Daily News, admitting he knew beforehand. How, oh how, is this whaling going to be supervised and regulated? If the power is given back to the tribe, through a reenactment of the Whaling Commission, there is a potential for chaos. Even in the waiver request, this statement was included: "Tribal regulations will include provisions requiring Tribal enforcement of the regulations. The enforcement regulations shall include criminal sanctions, including fines and imprisonment, up to the limits imposed by the Indian Civil Rights Act." This statement no longer carries any clout in any of our minds. Once the regulation of the whaling is violated, the tribe will have control over what happens next. Nothing will happen next. No one will be able to control the chaos, not even NOAA, but you can bet we are all going to blame NOAA, and rightly so.	The substance of this comment is responded to in previous responses to comments.

COMMENT CODE	COMMENT	DRAFT STAFF RESPONSE
	It remains imperative that NOAA develop a measurable criteria for appropriate contingency plans for the ongoing adaptive management of how the system will ever work, or how it can be fixed when it breaks. And it will break! It already has…..	
PN26	Hunting Near Shore Everyone but NOAA, feels there are extreme safely issues of not being able to protect any humans recreating on the water, or on the shoreline, during an active hunt episode. My questions now center on how you are planning on protecting the whales themselves; the females and calves? It is known that the females and calves will be closest to shore in the spring migration, when hunting is being considered by NOAA. Yearly whale watching in LaPush is centered on looking for those calves, just feet off shore. There is no amount of monitoring to protect these very valuable members of the Eastern Northern Pacific whales. Protecting the females should be a guarantee. It is also known from observations from the U.S. coastal migrations, that the males travel farther off shore and that 90% of the migration northward in the late spring is female and calf pairs (Herzig and Mate 1984). In the IWC Scientific Committee Report document, from Chile (2008), a couple of interesting facts were presented. First, in the summarized data from the 126 gray whales landed and utilized by the aboriginal hunters of Chukotka, in 2007, it is reported a total of 48 gray whale males, and 78 females were taken in 2007. Also reported was the landing of two "stinky whales", which were inedible. This report goes on to say: "In response to a question regarding hunter selectivity for females, it was reported that there are more females and calves in the inshore hunting area; males are farther offshore. Hunters do not take females with calves; only single whales are harvested." I wonder how the ENP whales will continue to prosper, if the Russians are opportunistically taking the females as evidenced, and the Makah follow with wanting to hunt near shore, in the middle of the female and calf late spring migration? At some point, the continued growth for this whale population will be hampered by a significant loss of available mating females. Add to this situation the additional statistics from the same IWC report: "San Ignacio based on boat surveys during several periods: 1978-82, 1996-2000, 2003 and 2005, 2006-08. Counts were greatest during the baseline period of 1978-82. Overall counts in 2008 were the lowest recorded in Laguna San Ignacio during winter." Has NOAA adequately studied the population distribution to categorically state that the ENP population is healthy, and that taking a larger proportion of females in the authorized hunts, will not cause a problem? I've heard it stated, in a film documentary on these whales, by Jean-Michel Cousteau, that the ENP whale population is not growing, but that the hazards to this population are growing. It is unknown what the long term consequences will be, from the future increase in Navy sonar testing and 'war games' within the migratory route of these whales. Needing to be added to this questionable future will be the push for oil and gas developments off shore. I was disappointed in the DEIS for not having adequately covered either of these pending risks.	The substance of this comment is responded to in previous responses to comments.

COMMENT CODE	COMMENT	DRAFT STAFF RESPONSE
	I would be remiss to also not add somewhere, that the effects on global warming, it's effects on the food chain for these gray whales, and the possibility that adding this all together will soon require a relisting of these creatures for their protection. Will there be statements within the FEIS that clearly guides this waiver to closure, when the gray whales are relisted? On the same topic of near shore whale hunting, I also found fault with Braund's conclusions: "Some Makah tribal members believe that excluding the Strait of Juan de Fuca from their hunting area would place whalers at increased risk, would prohibit them from whale hunting where their ancestors had traditionally whaled, and would affect their ability to successfully take a whale (Braund et al. 2007). The Makah traditionally hunted in the Strait, where boating conditions are safer because the weather is calm, compared to the ocean, which can have 25-foot waves (Braund et al. 2007). The restriction on location would contrast with traditional hunting, which occurred when and where the whales presented themselves, including in the Strait (Braund et al. 2007)." NOAA hired 'the big gun" from Alaska, Braund, who came to Neah Bay, visited for three days, talked with a few tribal members, and delivered platitudes of wisdom, that he really didn't know much about. He knows much about the Alaskan natives, he knows much about how to assess their needs for oil and gas development, and may be well respected in some circles. He did not demonstrate to me, that his words should now become the all important standard to comply with. I would like to contradict by saying, having lived on the Strait of Juan de Fuca, I have witnessed horrible conditions on the Straits, and that having lived on this Peninsula for 30 years, I have also witnessed hundreds of times, the ocean was totally flat and calm. Since the Makah historically have hunted whales miles and miles out to sea, I can only conclude the Braund research is extremely biased and smells like those stinky whales! The least controversial bottom line would be to hunt off shore in the migratory path, to avoid hunting the females and calves, to hunt closer to the migrating males, to hunt where their ancestors had traditionally whaled, to avoid the entire conflict of harming the resident whale population in any way, to keep the tourists, hikers, fisherman, kayakers, divers and residents along the coastline totally safe, to keep Olympic National Park out of the skillet you've put them in, to uphold the sanctuary part of the National Marine Sanctuary, and it would add an element of bravery to the image of any whaler, that could only be construed as 'in sync' with their ancient customs and societal structure. The numbers of whales harvested should be dropped to a level of documented food consumption use by the Makah tribe only, with strikes and misses, and stuck and lost whales, counting within the total given yearly, not in addition to. One last criticism would be against the line drawn in the sand by Renker and Braund that five whales - one for each village should be the golden number. Anthropologists sure get all choked-up over history don't they? Get real. There's one village now. One whale yearly for Makah Days, would be enough. However, the best bottom line of all, the one most humans on this planet would support, the option that representatives and governments of Mexico, California, Oregon, Washington and British Columbia have already gone on record supporting; the most legal outcome, would be that this waiver not be granted. The Makah should never be allowed to resume killing whales!	

Attachment 2: Additional Comments

We have carefully reviewed and considered the following comments and found that the issues they raise have either been addressed in previous responses to comments, have been addressed in the new DEIS, or are outside the scope of the EIS.

COMMENTER	COMMENT
Anonymous.pdf	Commenter provided newspaper article “Makah learn patience, hunting skills.” Claim that Makah lack the skills to hunt and the hunt is an outdated tradition.
Arnold_05-22-08.pdf	Request for comment period extension
Aulaw_05-14-08.pdf	We need to do more to protect our seas and marine life. We are stewards and the Makah are stewards of our culture. We made the treaty in good faith. – At that time life was very different for the NW Indians, (no casino’s, unlimited smoke shops, firework shops, etc.) I agree that subsistence as in Alaska natives is right. Allow Makah 1 whale/per year to be used by the whole tribe as ceremonial renewal and not wasted. We as U.S. citizens can’t control what other countries do to these animals when they migrate out of the Makah waters. How many Makah members are they (and do they include those that are only 10% Native American)?
AWI etal_07-30-08.pdf	Request for comment period extension
AWI_05-30-08.pdf	Request for comment period extension
AWI_08-08-08.pdf	Request for comment period extension
Bell_05-16-08.pdf	Request for comment period extension
Bell_08-15-08.pdf	There is no purpose in killing any whale. The National Marine Sanctuary should be protection for all the whales. NMFS should not allow any harpoon attempts. Citizens must be protected from .50 caliber rifle bullets as a matter of safety. Tourists would appreciate viewing whales.
Berass_07-02-08.pdf	Opposed to the hunt. Just because the Tribe hunted whales a thousand years ago does not mean they should be allowed to now. Circumstances are different now. We need to take a stand for our natural world before it is gone.
Bidwell_05_21_08.pdf	Our understanding is that when Federal laws and Indian treaty rights are in conflict, Federal laws must (always) prevail. These mammals are currently protected by the majesty and authority of U.S. Federal Law: The Marine Mammal Protection Act. A subsequent mandate by the 9th Circuit Court has ordered The National Marine Fisheries Service "to examine the broad effects of a whale hunt" ... - not ask the- public to .comment .on .various conditions of hunting or no hunting. My understanding is that this is strictly a matter of Federal Law, not popularity contest or straw vote by those motivated to respond. We don't know that the Mammal Protection Act has been amended or rescinded. Again, we emphasize: this is fundamentally an issue of Federal Law, not a contrived or programmatic political process exercise. The recent "deferred prosecution" for five tribal members who illegally killed a grey whale, in a particularly inhumane way, is a current example of political process judgment, at the tribal level. The press release on this simply states that "Chief Tribal Judge Stanley Myers said the charges will be dropped after a year if the five abide by conditions to be set June 30 by a Federal Court in Tacoma".So much for tribal judgment on this matter. None of us should have any delusions or illusions about where this is going, irrespective of admitted wrongdoing and Federal Statues regarding illegality.

COMMENTER	COMMENT
	We are opposed to administratively changing the prohibition regarding whale hunts and injuring or killing them, humanely or inhumanely. We do request that our letter be made part of the official record in this matter.
Big Blue Research Associates.pdf	If the whales could speak I am sure the first thing they would say is "Please stop killing us. We have never wronged you! We have been living peacefully in our ocean for over 20 million years and only wish to continue to do so. Who are you to kill us and for what reason do you do so?" And they would be talking to the Makah and the Japanese and the Norwegians who all still continue to murder these mysterious inhabitants of all our oceans. The Makah. Historic whale killers. Their rights protected in the Neah Bay Treaty of 1855. One hundred and fifty three years ago. Much time has passed and many changes have occurred. There is no justifiable reason for any country, tribe, or person to kill a whale anywhere in the world in the year 2008. Yet still the slaughter continues. Just what does this Neah Bay Treaty of 1855 say? Article 4- The right of taking fish and of whaling or sealing at usual and accustomed grounds and stations is further secured to said indians in common with all citizens of the United States etc. In 1892 Judge Cornelius H. Hanford ruled that the treaty assured the Makah "rights in common with all citizens of the United States (but) certainly such treaty stipulations give no support to a claim for peculiar or superior rights or privileges denied to citizens of the country in general" and thus their illegal seal killing was stopped at that time. "In common with all citizens of the United States ... ". The Makah rights are only the rights of all US citizens. No more. No less. In 1855, the year of the treaty, the United States was hard at it, killing whales all over the world. Some of the Makah worked on those boats like other U.S. citizens. When the U.S. finally closed our last whaling station in 1972, no citizen could go and kill whales. In common with all citizens of the U.S., the Makah clearly have no rights to murder whales. Article 13- "The said tribe finally agrees not to trade at Vancouver's Island or elsewhere out of the dominions of the United States ... " They wouldn't sell their butchered whale meat to the Japanese would they? So now the Makah want to murder five grey whales. Why? For food? In 1995 there were 1500 Makah living on the reservation. If they kill five 30 ton grey whales and utilize only half of that mass that is still 75 tons of edible meat which would give each man, woman, and child the task of consuming 411 pounds of whale meat every day for one year. Would they eat that? Do they have the freezer storage capacity? Was it legal for non-tribal people to try to help butcher the whale killed in 1999? What was sacred about that 1999 hunt/kill? Where was the need? In light of the 2008 poaching of a gray whale, have there been other killings unreported? The whale s a peaceful animal. The Orca is the largest of the dolphin family and fills the niche of predator. In fifty million years the Whale has managed to survive in its now rapidly deteriorating environment, our oceans. The Whales have never polluted their environment. Most Whales brains are at least three times the size of ours. We pride ourselves on the size of our brain over the rest of the animal kingdom. From David Rothenberg's Thousand }.file Song, p. 160, "'In humans, (brains), the anterior cingulate cortex senses pain, admits errors, and focuses attention. Also involved in the control of breathing, pulse, erections, and other involuntary responses, it directs feelings of fear, pain, and pleasure. The frontoinsular cortex is

COMMENTER	COMMENT
	active when our brains empathize with the suffering of others, as when a baby cries or another person is hurt. It also fires into action when we try to spot attempts at deception, to help us detect when someone is lying." These brain cells, called the spindle neurons, occur in exactly the same place in the brains of Whales as they do in us. For so many reasons, as we increase our knowledge of these wonderful animals, the best way to learn about them and from them is to let them live. Untouched and unharmed. Whale watching makes far more money than whale killing.
Boyd_05-10-08.pdf	Concerning the whale hunt that the Makah tribe is proposing. This is crazy! I have lived on the peninsula most of my 65 years, and have lived around and gone to school with the tribe members, they have no more right to hunt whales than I do. In fact with my ·European heritage, I probably have MORE rights to the whales, seeing that my ancestors were here long before the indians. Sounds nuts doesn't it?? I am making the point that reviving an age old heritage is something few Makah's give a damn about, and the few that do, are driven by getting there name and pictures in the paper more than reviving history. It is a damn shame that a whale has to die in order to give bragging rights, at the tavern, (not wigwam) to a few that have nothing to contribute to there tribe or our community other than a dead whale that no one eats I J Guaranteed, if no newspaper covered the event, it would stop in a few months. If all reason. goes away in this endeavor, at LEAST make the hunt proceed as in the 1 800 's with hand made weapons and dug out canoes - not with 200 horse power out boards and 50 caliber rifles - If they are sincere in there endeavor to relive the hunts of there ancestors- make them do it in the manner of there ancestors - Guaranteed H If this were to happen, there would be no further discussion of this matter.
Branum_07-07-08.pdf	I write you this letter today with deep sadness and concern of the pending Makah Tribe's whale hunt. I do not have a lot of rhetoric; I am no big time celebrity. I live in Pasadena California and pay my taxes, abide by the law. To be honest, I am just an ordinary person, deeply concerned that the US government is considering of allowing the Makah tribe to take and kill whales. I find no purpose or significance to allow this tribe, or any tribe for that matter to kill a whale. Whales at one.point were near extinction, and thank goodness the government put a stop to it. I know that many foreign countries, particularly Norway, Japan and China kill whales by the thousands. I wish there was more to be done to stop those countries. I read up on the Whaling Commission yet they do not enforce tough bans on killing whales. To have no regard for wildlife is unconscionable. The Makah tribe claims this was a cultural practice that is a tradition. I do not at all want to take away from the history of any nationality, especially the American Indians. Yes, they suffered greatly, (as did Jewish people and African Americans). However I cannot sit still and agree with them in 2008, that they need and should kill whales due to "tribal rituals". They do not live as tribesmen, in other words, most Indians tribes of today live and function like all the rest of us. They have homes, they drive cars, they work, eat beef, fish, have internet, and own casinos. If this were the time period of the 1800's maybe I would see their point. With the technology and the resources available today, why in the world do they think they have the right to kill whales and some of the whales they could potentially kill could be a young calf or a mother which would cause the young calf to be an orphan? The earth is in shambles and Mankind is responsible for it all. We have so many issues going on with Global warming, terrorist, inflation, recession, unemployment, foreclosures; all of this is so disheartening and now to read that the Makah tribe wants to take whales! It is absurd and I will continue to fight to protect the whales. I am not wealthy; do not know a lot of politicians but one thing is for certain, no one has the right to kill whales because it dates back to their ancestral days. There is no reason to kill other than it was something that the tribe did some 140 years ago. It was essential for survival back then, as they used the whales' meats, oils, skin in many ways. I doubt that is the reason now, as the Food and Agricultural Dept provides an abundance of food in this country. So please, help me understand why this is necessary. Whales have a right to live freely in our ocean waters.

COMMENTER	COMMENT
	I urge you please; please stop the Makah tribe of killing the whales. Most of our wildlife is pretty much gone and what will our children have to look forward to when mankind is killing everything, absolutely everything off. Please understand that I am a strong believer in preserving culture and tradition. But I do not believe the tradition needs to be practiced if animals are being senselessly killed. I will continue to write to any and all parties that can make a difference.
Broschart_07-02-08.pdf	Thank you for the opportunity to comment on the proposed Makah whale hunt. I fully support the Tribe's request for Alternative 2 in the Draft EIS. I strongly support native treaty rights and especially the Makah right to harvest whales. I hope that you will proceed with all due haste to approve this request and grant the Tribe their authorization.
Broughton_06-25-08.pdf	That “Makah Gray Whale Hunt” was a sad farce. The “hunters,” helped and babied by our Coast Guard, acted throughout as if it were a fraternity stunt. When they danced on the body of the female whale who’d learned to trust human beings, I’m sure I wasn’t the only one who felt sick to my stomach. You can’t be considering allowing this to happen again. You can’t.
Button_08-14-08.pdf	(I was asked to respond to an inquiry, pro or con, concerning the recent 'illepl whale hunt' by the five Makah tribal members. I have no idea who received my original letter.) I think the start should be that everyone in Washington State, especially Clallam County, read the Treaties of 1855! (It wouldn't hurt to read the Treaties of Canada also.) You will then see, and hopefully understand where the Makah are coming from. How many of you have read them? It's shameful. It's also shameful that these treaties were barely followed and in all cases the contents indiscriminately and/or purposefully not respected, promises broken, tools not supplied, health care and education pushed aside, and the land taken by money hungry, land hungry, gold/silver hungry, fish hungry (you get the point) settlers and government. Besides the written word, have you ever looked at an original map of the original reservation lands mapped out by the government? Again. shameful. And you wonder why there has been so much depression, alcoholism. drug use and suicide in Indian Country. But I do remain confident that they will continue to carry on as the Sovereign Nations they are, maintaining culture and spirit. ... regaining what was lost until they decide otherwise, with dignity and grace. Note: It also used to be against the law for Native American/First Nations to leave their reservation/reserve. The 'Pass System' existed for those that had to leave for a specific purpose, and thrown in jail if caught without it ... or worse. This existed well into the 1900's. The Residential School System is another story for another time. Shameful! Reading the Treaties is the first thing everyone needs to do. Then hopefully there will be an understanding of the Makah's position on whaling .... besides just mindlessly saying, "It's part of an old archaic Indian Treaty". It's actually fairly recent. and, it's called standing up for your rights. (Spelled out in the Treaty for whatever reason… food, spiritual, cultural...it doesn't matter.) The rest is nothing more than a personal belief on animal harvesting. (Personal position--> I don't hunt, and rarely fish. And, I love the whale as well as the deer and hate to see any of them killed. I'm also not giving a personal opinion on -whether or not I approve of unsanctioned whale hunts by Makah tribal members, or anyone else.) Reading the Treaties is the start. ... as everything else evolves from that point. Very emotional indeed! I remember Billy Frank back in the late 60's-early 70's. I was always intrigued as a teenager by his commitment and self sacrifice to the salmon issue. He was perfectly right in doing so. I couldn’t believe my luck to have met him :face-to-face a couple of years ago .... as he reached out to take my hand.
Byng_05-13-08.pdf	Leave the whales alone. The Makahs should offer to change the Treaty – real men don’t need to kill whales.
Byng_05-16-08.pdf	Position: Against Whaling by Makah Tribe My ancestors sacrificed sheep and goats, and later bulls, to the Gods/God in exchange for a successful hunt of game.

COMMENTER	COMMENT
	In some cultures around the world there were human sacrifices to ensure safety and prosperity for the tribe. It is time for the Makahs to enter the 21 51 Century and shed the yoke of superstition. To kill an innocent whale to boost your courage is insulting to the rest of the world and to the men of the Makah Tribe. If you want to be on an equal footing with the whales, take a camera instead of a weapon. See how close you can get and photograph its eye. But honor your opponent. Leave the whales alone.
Camac_06-11-08.pdf	After careful thought and review of all the materials, to me, it comes down to 'justification' for killing the whale(s). As far as the main reason given for wanting to hunt the gray whale, described as "pride, self-esteem, and for a reason to abstain from alcohol and drug abuse", I find these to be misguided, and grossly immature reasons to justify the suffering and killing of a gray whale. I recall clearly the aerial views of the killing of the whale in the late 1990s by the Makah. This haunting aerial documentation was highly disturbing and did not bring favorable view of the tormentors of this whale, the committees, or the administration who allowed it to take place. Since the 70 year moratorium on gray whales was initiated, whale-watching excursions, scientists, and animal behaviorists have taught the American public and the world about the intelligence and unique sociability of these great animals, actually dubbing them "our human counterparts of the sea." Also, being of American Indian heritage myself, I have always understood the reverence Indian tribes have always had for all the creatures they shared the Earth with, and life was only taken out of absolute necessity. This was a gentle and wise culture and therefore this application to take life unnecessarily is surprising and to some in the Indian culture, even shameful. To be a tribal member a Makah can boast as little as ten percent Makah biological identification, and this may explain some of the detraction from Indian culture. As far as killing a gray whale for sustenance, there seems to be no justification there either. All products that the killing of whales once supplied have been replaced by science and technology. I have read the material sent to me explaining the Makah detractors of the hunt incidentally finding wasted whale meat and blubber in fishing nets. The portion of the Makah Tribe who do not want the hunt as they do not consume or like whale products, and those protesting on moral grounds, should also be heard. There was much protest. We, as Americans, should be homogenizing and not allowing every subculture within our culture to renew "traditions", as then we would have to legalize other un-American rituals, such as cock fighting, dog fighting, Voodoo with its animal sacrifices, etc; exceptions cannot be made just for one group or one subculture. Certainly, traditions are not always a good thing; we had a few American traditions like slavery and witch-burning, and thankfully we have realized our shameful mistakes as a people. Time moves on, progress happens, and there comes a point where the old traditions can no longer be justified, as in the case of barbaric hunting of the gray whale. Again, thank you for allowing me to review the material sent to me and be assured I took this responsibility seriously and have made the above conclusions.
Cetacean Society International _08-15-08.pdf	With respect, Cetacean Society International (CSI) urges the National Oceanic and Atmospheric Administration (NOAA) to review and correct the overwhelming number of DE IS deficiencies, whether inaccurate, misleading, unclear or omissions of fact. We have no doubt that many of these deficiencies wilt be presented to NOAA in public comments, and NOAA professionals are certainly aware of many of them. However, the unwieldy scale of the DEIS, and the overlapping of the comment period with many other priority issues of concern, likely will preclude even the most ardent reviewers from catching all deficiencies. CSI acknowledges that our best efforts could not review this document adequately, even with an extension period, and we reserve the right to revisit the document. The mechanism for these corrections may require an eventual Supplemental EIS (SEIS), but no matter how they are accomplished, they must be done.

COMMENTER	COMMENT
	To assist with making these corrections, CSI urges NOAA to pay particular attention to the DEIS-referenced critique by the Peninsula Citizens for the Protection of Whales. Their local expertise, exhaustive review of the OEIS, and long-term familiarity with the Makah Tribe is an incomparable asset that can help NOAA avoid even more complications in this arduous process. Overall, this DEIS is the worst presentation of relevant material of any of the 23 EIS related documents I have reviewed since 1976, beating out a US Navy DEIS for midfrequency active sonar training that simply vanished after the public comment period. The reason the DEIS is so bad is that it could only be written by omitting and misrepresenting relevant facts, and the ultimate responsibility is NOAA's. The Final EIS provides an opportunity for NOAA to award a contract for preparation of the NEPA document to an objective, disassociated and knowledgeable preparer, defusing a potential conflict because of the preparation of this DEIS by Parametrix Inc., under contract to NOAA. It is obvious to many that the flaws in this DE IS may be related to the connections between Parametrix and the Makah Tribe. These are so pervasive that the DEIS is irrevocably inadequate and biased, contrary to the intent of the National Environmental Policy Act (NEPA). Parametrix's conflict of interest justifies intense scrutiny, and CSI believes this scrutiny will show, given the relationship between Tribe and company, that Parametrix could not have been objective or substantive in its preparation of the DE IS. Whether these flaws were intentional or not may be decided in court. We do not know of any DEIS intentionally prepared by an entity with such an obvious conflict of interest as with Parametrix's long-term financial and contractual interest in aiding the Makah Tribe. For example, Parametrix profited from facilitating the Juan de Fuca Byway, and in 2002 supported the Tribe's attempted annexation of their reservation road into the Byway. Public opposition to the "whaling road" stopped the annexation, so in 2003 Parametrlx had a Corridor Management Plan contract for the Makah Tribe's Cape Flattery Tribal Scenic Byway. Parametrix's motives were linked to helping the Tribe "interpret" whaling to tourists, and are clearly reflected in their self-interested emphasis on improved whaling...related tourism that they repeat several times in the DE IS ten. At one point Parametrix writers blissfully say: "Overall, it is reasonable to expect more visitors would be drawn to the area than avoid the area as a result of a whale hunt." This is contrary to an of the demographic facts CSI is aware of; watching whales being killed or butchered is not on many tourists' itinerary, and is not offered by any tour promoting services outside of Japan and Norway. CSI is aware of other links between the DEIS preparer and the Tribe. For example, the Makah Tribe in 2006 selected TranTech to administer the ten million dollar paving of the Tribal Byway through Neall Bay. TranTech is linked to Parametrix. Parametrix is also linked to the Neah Bay wave energy project NOAA was derelict for allowing this conflict of interest to happen. If another example is necessary, Parametrix's self-serving DEIS discussion of the effects of whaling on tourism focuses improperly only on the Makah reservation, not surrounding Clallam County. While the DEIS states that there is ~no evidence that calls for boycotts of Olympic Peninsula tourism had any negative economic impact on tourism in the area", locals believe there were economic impacts and the 2005 Scoping Report acknowledged the many comments about the need to analyze the effects of whale hunting on regional socioeconomics and tourism. While Parametrix serves Itself best by downplaying the current regional, US, and worldwide public perception about whaling, there should be no question that the reaction will affect tourism and necessary support for real Makah needs. Countering its own text, the DE IS even dismisses boycotts as being probable no matter what whaling alternative is chosen. Another categorical reason this DEIS is Inadequate, biased and flawed, contains comments that appear to be misleading, arbitrary and capricious, and does not satisfy requirements of the NEPA includes NOAA's failure to make public material relevant to the DE IS. For example, CSI is not aware of any public release of the agency investigation into the September, 2007 illegal whaling event. We are aware that several people have tried and failed to see it. A review of that investigation is mandatory for an adequate review of the DEIS,

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	because the event and aftermath demonstrate several fundamental reasons why permitted Makah whaling will be akin to letting an uncontrollable genie out of the bottle. The fundamental DEIS pretense that permitted Makah whaling can be effectively regulated was destroyed by the illegal whaling event. In brief, four men avoided all pretext of cultural whaling, subsistence need, and humane methods to try to kill a whale simply because they wanted to. Itis inconceivable that, within the insular and small Makah community, the Makah leadership and enforcers were not aware of or alert to the potential whaling. If they truly were unaware then they are inadequate to the responsibilities implied in the OEIS. However, additional evidence suggests that Makah Tribe officials were aware of the impending and illegal hunt in September, 2007, in addition to one convicted whaler's court testimony to that effect. Whether or not Makah authorities were aware, the whaling event demonstrated that these authorities lack the will or capacity to constrain unpermitted whaling. The Makah Tribal Court, for another example, is unable or unwilling to enforce the law. The Court had initial jurisdiction over the event, and in bringing the whalers to trial declared that the defendants would face punishment on tribal charges, to the fullest extent of the taw, of a year in the Neah Bay jail, $5,000 fines and temporary suspension of their treaty right to hunt and fish. However, after considerable trouble empane11ing a jury. tribal judge Stanley Myers agreed to waive any punishment and drop all tribal charges against the whalers in return for a year's good behavior. Myers was dismissed later. The DEIS and Needs Statement arguments for Tribe's ceremonial and spiritual needs were mocked by the illegal whaling, which obliterated all the forced connections between modern whaling and Makah whaling lore, tradition and social structure. It clarified that, to some Makah whalers, whaling is like any other hunting. To them the Tribe's ritualized ceremonies, and whaler crew selection, celibacy, preparation and special training in dedicated canoes is for museums, and the whole Makah hierarchy from whaling captains down to slaves is meant for the tourists. In fact, the illegal whaling demonstrated a fundamental flaw in the DEIS and Needs Statement: While many Makah may want to be proud of their heritage and history, they do not want to live as their forefathers did. This has as much to do with the demand for social equality for all Makah as US citizens as with the conveniences and comfort of modern living. Some American values have been accepted by the Makah, at least the many living in poverty, or from low-ranking families; no one wants to be a slave. The Makah who illegally whaled showed distain for the Tribe's heritage, custom, and hierarchy, and declared that they had a right to whale when and how they wished. The illegal whaling also demonstrated that the humane aspect of killing whales is not reinforced or regulated adequately in the DEIS or US policy. The DEIS expresses some concerns that any hunted whale be killed as humanely and quickly as possible, but the rogue whaling clarifies that it is not enough to require Makah whalers to be trained and proficient in the use of weapons, and it is not enough to give them adequate weapons. No one can deny that the wounded gray whale suffered unnecessarily for many hours before it finally died. One of the rogue whalers was a trained whaling captain. and the four men had the best equipment at their disposal, stolen or not. Nevertheless, their performance was so inept, despicable and ludicrous that the whale's time-to--death rivaled the worst cases the IWC is aware of. NOAA must find some way to ensure that Makah whaling does not cause undue suffering, and the OEIS must state how that will happen. The illegal whaling event adds to the evidence that the Needs Statement conclusions are not supported by evidence from the current lifestyles of the Makah, and their use of whale products over more than a decade. CSI contends that the Makah Needs Statement makes erroneous conclusions based on the assumption that the Makah really want to live the old way. To verify our contention we need to

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	review the full data set behind those conclusions, but they have not been made available to the public for review. This is another example of how NOAA has made adequate public review of the DE IS unnecessarily, perhaps illegally difficult. The DE IS ignores evidence that the Makah people were so unenthused with dealing with an actual whale carcass that the butchering was left to visitors, as related in comments by an Alaska Native whaler in a DEIS ignored video. The DEIS also ignores evidence that Makah whale meat has been improperly distributed to non-Native Americans, and even transported to Canada. In spite of the ritualized token sharing of whale meat to tribal members, many didn't like the taste, and most people seemed to have quietly thrown their token share away. To compare the Makah "need" to that of the Alaska Natives is an insult to a people living in a harsh environment where the shared meat is essential to their social values and diet, and the whalillg has never paused for hundreds of generations. The DEIS and Needs Statement do not demonstrate that the Makah need whale products for subsistence. Nor does the DEIS discuss the machinations with US policy, and the resultant affect on the US's relationship with other nations and treaty organizations, as NOAA attempted (and unfortunately succeeded) to have the IWC downgrade the definition of aboriginal subsistence to meet their goal of including the Makah. The science within the DEIS is biased. Overaltthreats to the Eastern North Pacific (ENP) gray whale population are not presented in accordance with the full spectrum of modem research. While scientists disagree on the numbers, affects and trends, the DEIS focuses mostly on the data supportive of killing whales. However, many scientists have been arguing that the ENP gray whale population may not be as recovered as NOAA wants us to think, often citing chaotic and accelerating trends towards climate change. Scientific evidence of significant pressures from pollution, collapse of habitat resources, high calf mortality, oil and seismic developments, ship traffic, and anthropogenic acoustical impacts have been minimized, while controversial data on the population's "recovery'' numbers have polarized some professionals. If NOAA is not aware that the 2008 gray whale population using San Ignacio lagoon was perhaps the lowest number in decades it is because NOM has not invested in gray whale population research since 1999, and prefers to cite references and exaggerated numbers that are dismissed by most experts. including NOAA scientists. The DEIS obviously stresses positive data so as to justify the Makah Tribe's "need" to take 840 grey whales every five years, primarily from Level A and B harassment. Within that five year period 20 whales could be killed and brought to shore, and 35 whales could be struck and lost. But the DE IS fails to emphasize that, due to the in-shore nature of the recent and intended whaling, and the documented evidence of individual whales that prefer that habitat returning year after year, there is a weighted potential for the impact from the takes to be mostly on one sub-population, not the total ENP gray whale population. To be adequate, the science must quantify the probability of repeat takes and subsequent impact on this subpopulation. This Quantification must also predict the probability that the struck and lost whales would either diet from injury or be reproductively lost to the population. In contrast, the IWC has expressed concerns for the impacts of strikes on small populations. As related in a DEIS footnote (1-23) that: "The annual quota from this feeding aggregation (Greenland bowhead) shall only become operative when the Commission has received advice from The Scientific Committee (IWC) that the strikes are unlikely to endanger the stock." Regarding CSI's concern that the Makah will primarily hunt within a subpopulation, CSI is puzzled that the DEIS doesn't do more to argue for the Alternative to "Hunt outside areas frequented by identified whales". As suggested by many, this should be more clearly labeled as a hunt offshore in the actual migratory corridor''. We assume the Makah don't want to venture as far to sea in power boats, with safety gear and escorts, as their forefathers did in unprotected canoes, but the DE IS support for April and May whaling in near-shore feeding sites as "designed to avoid any intentional harvest of gray whales that have been identified within the PCFA Survey area"

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	contradicts NOAA's concern for targeting "resident" whales and the mothers and calves. This period coincides With these whales arriving in the area. NOM knows of the public's concern for shooting "resident" whales, and harassing mothers and calves. The DEIS's dismissal of the potential for significant impacts on the public as well as on these subsets of the ENP population is simplistic and unrealistic. The DEIS is inadequate and misleading by evading full disclosure of the conflict of interest expressed by the personal relationships to the Tribe of two cited "experts". Renker, cited many times as an authority on the Makah's "need" to whale, is the wife of a Makah whaler. Sepez, cited many times as an authority on Makah culture and subsistence use of foods, has had a long-term relationship to a Makah whaler. Renker's two commissioned surveys do not prove that that Makah whaling is supported by the majority of Makah. The surveys merely found that a majority of respondents supported whaling. Only 163 of the total households responded in 2001 and only 152 responded in 2007. This correlates with an effort by a core Whaling group to quell dissent by using tactics like threatening to "banish" aged members from the Tribe. The whaling faction has so intimidated everyone that few openly speak against the hunt. If someone's honest answer will bring trouble why respond to a survey, particularly if the survey is conducted not by an objective Ph.D. but by the wife of a whaler? The DEIS and Needs Analysis cannot help being inadequate by stressing selective and potentially misleading data from the two Makah household surveys, and without discussing the social and economic pressures on Makah who are either neutral or anti-whaling. Regarding the permitted use of regulated whale meat the DEIS fails to define precisely what "inedible parts" can be distributed, what constitutes "authentic articles", and how off-reservation distribution and use of whale meat will be monitored and regulated. The definitions of acceptable sharing of meat based on "familial, social, cultural, or economically tied" categories require significant rewording to prevent wholesale illegal misuse of the meat. As written lt is full of loopholes. To be blunt, this is the type or wording that has consistently resulted in events leading to lawsuits against NMFS for failure to enforce laws, followed by NMFS's lament that such lawsuits absorb a significant amount of human and financial resources. This self-inflicted wound should not be made worse just to satisfy the Makah entrepreneurs. The discussion of potential public injury is particularly deficient in the DEIS. Not only has the overzealous Coast Guard caused unnecessary public Injury, but the OEIS seems to ignore expert testimony regarding the lethal range of the .50 caliber weapon the Makah would use. Comparative data shows alarming overlaps between the near-shore hunting the Makah have conducted and will conduct, the public use of shoreline areas for camping, the lethal range of the weapons. and the documented evidence that the whalers are not very good with their aim. CSI has commented on this DEIS in good faith, with no ill will against the Makah Tribe or its people. We feel we are correct to argue for the whales, in part because we believe that the Makah will suffer no harm by not killing whales. Many other aspects of their historic culture have adapted to the modern era: They do not keep slaves; they do not live and suffer as aboriginal people; and despite inefficient and blundering government services that leave the Tribe isolated and impoverished. the Makah do have constitutional rights and freedoms. However, the Makah have suffered harm, harm caused by the US government's continuous assertions that whaling was right and guaranteed in spite pf decades of strengthening political and public perceptions that whaling is inherently wrong. From the initial efforts of the Makah to reinvigorate their culture by whaling, coinciding with considerations for the ENP gray whale to be delisted as an Endangered Species, NOM has made every effort to assist the Makah. That effort has not always been legal, resulting in a chain of lawsuits. We have no doubt that, perhaps earlier than 1996, some misguided NOAA or BIA agents were reassuring the Makah that the

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	Tribe would go whaling with little delay. The frustration vented by some Makah last September is well understood in this context; they have been Jed into this mess by their government. The ultimate question CSI requests to see addressed in the final EIS is why the US has acted in a manner that has not only brought Native Americans into conflict with their American culture and alienated them further from the wider society, but has denigrated our nation in the eyes of the international community. Within the IWC context alone, policies driven by the contrived need to achieve Makah whaling have cost the US any claim to reliably supporting, much less leading the anti-whaling movement. At IWC 60 the US vote for Greenland whaling, the misrepresentation of the 2007 Makah whaling to the Infractions Committee, and the Chair's desperate efforts to keep the Makah whaler's sentencing from the IWC media added to a long chain of misguided efforts to make believe that Makah whaling was the same as Alaska Native whaling. It is not. The Alaska Native subsistence need has little in common with the contrived Makah cultural whaling. CSI has not opposed Alaska Native whaling, tacitly accepting that the inhumane aspects of their hunt had to be balanced against issues of community survival. By aggressively rewriting the rules to allow Makah whaling as if it were the same thing, the US has knowingly aided whaling nations seeking any form of whaling they could get away with. Many long-time observers would characterize the convoluted process to enable Makah whaling, including this DE IS. as a combination of two unlikely bedfellows: Perhaps fewer than 40 Americans who wanted to kill whales found eager support from government employees, economists and strategists concerned with larger implications from emerging treaty-right issues. This odd coalition has maneuvered the entire nation into a demeaning situation that has not served the national interest, and has polluted the nation's influence. CSI urges NOAA to attempt to fix the DE IS deficiencies with an objective, factual, reliable and legal final EIS.
Chance_05-20-08.pdf	Because of the ban on killing of Gray Wha1es, the Whales are making a comeback. During this time I have not heard of one Makah Indian dying of starvation. In fact I have any evidence that they ate the last whale they killed. A hundred and fifty years ago the Indians killed whales for subsistence. That is no longer the case for today. There is no law that I know of that stops any Indian tribe from having a song and dance for any reason. The Gray Whales are in danger from the pollution of the ocean they live in. To add hunting of the Gray Whales just puts another factor in the equation to speed up their extinction. Global Warming is going to be a factor in the Gray Whale population of the future. Now is not the time to start killing whales just to have a song and dance. Indians keep saying they are stewards of the land, well they need to prove it.
Cholvin_05-16-08.pdf	We strongly oppose allowing the Makah Tribe to resume hunting Gray Whales. The case for subsistence hunting is weak in that hardship has not been proven for all the years that they have not undertaken hunting whales. They would be seen as understanding and compassionate for the endangered, sentient Gray Whale species if the Tribe would initiate a new ceremony that does not involve killing a whale. These sensitive, intelligent Gray Whales deserve to have the right of freedom to live their lives and to feed, reproduce and roam in their sea. They can't defend their territory from encroachment and pollution, nor sign treaties. We need to protect them.
e_Abendroth_05-16-08.pdf	Hello, These are my feelings on the whale hunting of the Makah Indians.

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	The treaty we signed with this Indian tribe gave them the authority to partake in their whale hunts many years ago. It's part of their heritage. They had their one hunt and did it pretty well though there was some antics before the media which they could have done without doing. Then they were stopped in doing any whale hunting. Three years or more went by without the government coming to some conclusion and they became impatient. I can see that happening. With their impatience they proceeded to take part in an illegal whale hunt. That was not good but I can sympathize with them. It's time the government settled this business and allowed the Makah Indians a certain amount of whales a year to hunt. Enough of this dragging on this business and it's time to come to a conclusion over this matter. Settle it now and let the Makah's hunt their whales.
e_Acevedo_05-29-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Affleck_05-10-08.pdf	This is 2008, not 1808. All these special rights for Indians should be taken away from them. They were all made citizens of the USA in 1927. They have gone to the same schools as everybody else. Do away with the reservations and all there special rights. Let them get a job just like every body else.
e_Aghjayan_05-12-08.pdf	I am writing in opposition to allowing the Makah tribe to hunt whales. Federal Indian Policy is unConstitutional in that it treats one group of citizens different than another. The Indian Citizenship act of 1924 should have extinguished all treaty rights. How can you have treaties with your own citizens? Culture is not government and government is not culture. Slavery was once part of our culture. We do not allow for it today. The same should be true with whaling. I will be encouraging and supporting legal action on the basis of the above Constitutional issue should NOAA approve any whale hunt.
e_Airhart_05-11-08.pdf	STOP this stupid killing. Is this the same bunch that a few years ago killed a whale with the big, big outboard motor, and the rifles, bazookas, and whatever? What happened to the "old time" ways of trying.....to kill the whale? This is just a arrogant attention getter , at the DEAD whale's expense!!!

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	DO NOT AGREE TO THIS STUPID RESUMED KILLING OF WHALES....!
e_Allen_05-26-08.pdf	I am writing in support of the Makah tradition of whaling. Who are we to judge the traditions of this culture? These people have the good sense to take only what they need.
e_Alley_05-10-08.pdf	With all respect and honor for traditional ways of the Makah, respect and honor must be given to our present understanding of the nature and scarcity of whales.These are huge-brained mammals, and are to be accorded humane dignity and respect. Please reject every form, design, or plan for a "hunt".
e_Alumbaugh_08-15-08.pdf	Fact: The Makah's are not used to eating whale and they do not need it for their food source. Please do not allow any whaling. This is the 21st century. We cannot expect to do everything our ancestors did 100 or 200 years ago.. The Makahs had slaves during this time period. Is that next? Suggestion: Why don't they take tourists out to see the whales rather then kill them?
e_Alwood_05-12-08.pdf	I strongly object to the continuense of Makah Indian whaling and hope you'll deny current and future petitions of this barbaric activity, which only lines the pockets of Japanese fishing interests rather than Makah sustinance. I live less than 100 miles from the Makah reservation and have yet to meet a tribe member that eats any of the whale catch. The Makah's would benefit more by chartering tour trips to view these noble and intellegent creatures rather than killing them. Please do all you can to close the loop-hole that allows this process to continue.
e_Anders_05-16-08.pdf	I believe the Makah should be allowed to exercise their treaty right to whale. The MMPA and other agencies should not have precedence over the Makah's right to whale. Their treaty rights should be supported and upheld, without interference.
e_Anderson_05-15-08.pdf	Request for comment period extension
e_Anderson_08-15-08.pdf	Wrong version of comments
e_Angell_05-19-08.pdf	I write as a concerned citizen for Washington State's wildlife and environment. While I respect the right of the Makah to request a traditional whale hunting ceremony, I believe that such a tradition is no longer relevant to present day and the importance of protecting marine mammals off our coast. A request to hunt Gray whale off Washington's coast is license to harass and kill a threatened species, and under the marine mammal protection act of our country, this hunting option doesn't exist. The only reason the Makah's request is being considered is because of the history of tradition. But many cruel and excessive traditions are now outlawed—such as the trade in parts of endangered and threatened species. The exemption for the Makah's request is absurd, and sets a dangerous precedent that tradition some how overrides conservation. Granting hunting rights to a particular group of people effectively nullifies the very laws that are set up to protect marine mammals. What good are laws if they can be overlooked on occasion? In today's environmental reality, marine mammals need all the protection they can get by rule of law. From global warming affecting food availability to destructive fishing practices in international waters, there are many hazards faced by marine mammals such as whales. As much as we can the US should present an example to the world in stewardship of the marine life off our coasts, and work with other international agencies to strengthen protections of our ocean waters and the life within them. I do not agree that historic tradition outweighs the importance of protecting the whales that pass through our waters. Please turn down this request by the Makah.

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e_Arlen_08-07-08.pdf	I am writing to you to voice my deep concern for "once again" is happening in terms of "authorization" of the Makah Whale Hunt. To begin with I'd like to point out a few facts about this "alleged HUNT". The 1997 IWC quota granted for the hunting of gray whales explicitly required that any hunting must be undertaken by a native group that has a subsistence need. What exactly is the subsistence need of the Makah nation. There is NONE. This is the same ploy that is being used year after year after year. Japan, Canada and Norway are behind this. Financing the Makah nation to use their "subsistence treaty" to promote and eventually bring back "whaling" to the US. The Makah whale hunt does not meet (nor has it in the past) the "Definition" of "Aboriginal Subsistence Whaling" and was made explicitly clear by the member nations of the International Whaling Commission when the proposal was brought before them in 1996 and again in 1997. So we're looking at 10 years of inaffectual challenges to the NOAA by CERTAIN members of the MAKAH nation. There are Makah Nation members who also OPPOSE whaling - several Makah elders have spoken out against whaling and received threats. So the question I pose is why give permission to basically go out and slaughter a whale under "FALSE PRETENSES"? also: The continued VIOLATION of Aboriginal Subsistence Whaling guidlines at the IWC by permitting the Makah hunt is likely to cause SIGNIFICANT environmental imapcts worldwide by undermining an international whale CONSERVATION agreement. and we know that there is clear bias in favor of permitting a hunt - which is evident throughout the EA. NMFS must produce a full Environmental Impact Statement that truly takes a hard look at "ALL" the potential consequences of the Makah whaling proposal. I don't believe the information you have provided to me does that. Nor does it give reasonable grounds to substantiate the Makah Subsistence treaty proposal to hunt at this time. IMPORTANT: The Coast Guard in the past has acted out in extreme AGGRESSIVE manner towards activists in the past while PROTECTING the Makah Hunters (traveling in high power speed boats and using HIGH POWERED ASSAULT WEAPONS TO SHOOT AT WHALES). I brought this to the attention of then Vice President Al Gore as I was outraged to learn of the coast guards activities: I learned from the Sea Shepherd Conservation Society that activists boats were rammed and they the activists were INJURED by the USCG vessels as a whale was harpooned. The attack on activist's Erin Abbot's jet ski - running OVER her (she was eventually medi vacd to Olympia Memorial hospital) is just a TERRIBLE REMINDED of what is at stake here. World Whale Police Vessel too was rammed and crew member Julie Woodyer (a director of the VANCOUVER HUMANE SOCIETY) was injured. And though the USCG imposed a $250,000 fine and six years in prison for violations of 500 yd EXCLUSION ZONE around the hunter by activists attempting to prevent the killing of whales (several activists were arrested for violating the zone/ their vessels seized) NOTHING was DONE in terms of arrests to the Makah whalers for pulling out their .50 caliber rifle. It is beyond comprehension the length and determination of the USCG to ENFORCE AN ILLEGAL WHALE HUNT and help the Makah kill whales to the POINT OF INJURING ACTIVISTS on the water The US Dept. of Commerce obtained an aboriginal Gray whale quota from the IWC in 1997 but AVOIDED ruling on the Makah's eligibility to hunt under the "conditions of aboriginal subsistence whaling as determined by the IWC. The US Administrations unilateral assignment of the quota to the Makah WITHOUT the consent of the IWC constitutes a violation of INTERNATIONAL CONSERVATION LAW. As far back as JUNE 9th 2000 The US 9th Circuit Court of Appeals made a legal decision on the position of the Sea Shepherd Conservation Society (which the SSCS has maintained since 1996 that's 12 years ago) that the Makah whale hunt permitted by the US Administration did NOT meet the requirements of the National Environmental Protection Act. Congressman Jack Metcalf and other plaintiffs pursued this case until justice was done. Overall the hunt was permitted based on POLITICS - NOT ON SCIENCE. Once again the facts are: The Makah hunt DOES NOT MEET the CRITERIA ESTABLISHED by the IWC for Aboriginal Whaling: i.e.: subsistence need and continuous, unbroken tradition. The killing of a BABY GRAY WHALE off the coast of Washington in May 1999 was an INFRACTION of the International Convention for the Regulation of Whaling. THIS DANGEROUS PRECEDENT that you wish to allow will only lead to further abuses by self styled indigenous people such as the NORWEGIANS and JAPANESE who maintain the whale hunting is

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	both indigenous and traditional. and just how did the Makah nation purchase those expensive high powered speed boats? Once again this is simply the case of JAPAN, CANADA and NORWAY trying to UNDERMINE THE US's POSITION ON WHALING. I cannot and will never condone any excuse to allow any form of whaling. anytime nor anywhere.
e_Arlotta_06-20-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the DEIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider the fact that in the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death - especially when the death of the animal IS NOT NECESSARY to the SURVIVAL of the people. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over NINE hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Armon_08-15-08.pdf	The overriding issue is sovereignty & that the Makah Treaty rights supersede the Olympic Marine Sanctuary & Marine Mammal Protection Act. Having said that, the Treaties need to be renegotiated. Please do not allow hunting of females with calves or juvenile gray whales, as recent science is showing a decline in overall population, as well as estimated pre whaling population totals, that the previous threatened status was based on. Please identify "resident" gray whales, and also do not allow hunting of those individuals, as there are known "friendlies" that innocently approach humans.
e_Arnold_05-20-08.pdf	Request for comment period extension
e_Arnold_05-21-08.pdf	I just wanted to place on record that although Australians for Animals is on the the distribution list, we have not been formally advised of the DEIS and would not be aware of the Federal Register Notice or DEIS unless other groups had informed AFA.
e_Arnold_07-03-08.pdf	Australians for Animals Int. formally requests a further 30 day extension to the comment period. Given that international groups are unable to attend the three meetings and that there are no transcripts of these meetings, we are handicapped by our inability to pose questions in relation to the DEIS and to take on board questions and answers asked at the meetings. Given that the DEIS has taken three years to prepare and given the extent of the bibliography which I understand is now available on line, it does seem unreasonable to expect that groups who are deeply involved in the whaling issue can adequately respond to the DEIS in the time frame. As well, with IWC being held in the middle of the comment period, it does make for major difficulties in terms of focusing on all the relevant issues. Australians for Animals is concerned that the US refused to report the Makah kill as an infraction. Given the jail sentences handed down by the Judge the failure of the Administration to report the slaughter as an infraction is of concern. Further, the US delegation claimed that the slaughtered whale was part of the " Makah quota". This is not correct as no waiver has been issued. As a result we are engaging Counsel to investigate the actions of the Administration at IWC and the legal ramifications of misleading the IWC. Our in depth reading

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	of the DEIS reveals many major inadequacies and in order to address these omissions, we believe that an extension is justified. An objective examination af the DEIS and its omissions, combined with actions by the US delegation at IWC raise major issues which need to be addressed.
e_Arnold_07-29-08.pdf	Thanks for the responses to my group's questions. However, questions 2-7 were not answered and these are critically important issues. NMFS has an obligation to cite the legal experts on which it relies for opinions expressed in the DEIS. As well, the questions raised are at the heart of the ramifications to any waiver. I would like it place on record that these questions were not answered and the legal issues raised by my group have been ignored. In spite of your insistence that questions relating to the IWC needs to go to Cheri McCarty, the fact is that the US delegation insisted that the Makah kill last year was part of the tribe's " quota". If the US Administration is asserting in one arena that the kill last year was legitimate and at the same time calling for comments for a waiver of the MMPA to allow the Makah to kill whales then these are serious issues which need to be addressed. The public has a right to know who is right and if the Government is making these statements in international arenas and they are not correct, then the DEIS should spend a great deal more time addressing the ramifications of an international waiver or non waiver - both instruments apparently posing little problem to the Administration. As well, Australians for Animals Int. formally requests details of the NMFS annual budget for gray whale research/monitoring since 1999 and details of budget requests by NMFS for research/monitoring of eastern north pacific gray whale since l999.
e_Ashley_05-14-08a.pdf	We have 13 people in our environmental science class and have been learning about your whale debate. 9 of those people agree that it is wrong for this to be going on. They say that it is a cultural thing but they are not killing the way they used to. They used to kill the whales with knives and now they are using guns. If this is so cultural to them then why have they changed their method of killing? We just thought that we would voice our opinion and hope that you will take it into account.
e_Ashley_05-14-08b.pdf	The traditional hunting practices of the Makah tribe of Native Americans in the Northwest are an integral component to Makah culture, and as proposed by the Makah people, an integral factor in the physical and emotional health of the tribe. After an extensive research project, the Environmental Science classes at Fort Worth Christian School feel overwhelmingly that the government cannot justify, either morally or legally, the denial of the Makahs' right to sustain their cultural tradition of whale hunting. As a country that supposedly guarantees the free exercise of religion in addition to the pursuit of happiness, the responsibility for allowing the continuation of this cultural practice falls on the United States governmental body. The ruling in favor of the hunt as established by the Treaty of Neah Bay in 1855 is further legal support for the Makahs' claim. The support for the Makahs, both legally and morally, is undeniably clear. These are a people who seek their constitutionally guaranteed right to cultural pride through the re-instigation of an ancient and low impact practice that will ultimately have benefits for the tribe and for this country.
e_Barclay_05-12-08.pdf	As there are only two places to hear and give public comment, Port Angles and Seattle and neither are close enough to attend , Here goes. The Makah hunters broke Federal Law. The tribe did not do anything to take action against these individuals, and neither did the Government. They got a plea bargain. I bet that as a white Caucasian if I were to did some clams on a beach on tribal land , I would not be offered a plea bargain. The rest of the world does not do any whaling, with the exception of Japan, and they do it under the umbrella of Research. The International community knows this and the International Whaling commission knows this , and they know that this action is not right, and yet Japan continues on. What a crock of crap.

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	The Makahs need to come into the twenty first century. The tribe will not use these whales. Not one of the tribe will forgo a Mc Burger or a Whopper for some tasty whale blubber. Thus we have a slaughter of a whale for no good reason, treaty or not. If the whale was the only thing to eat to stave off starvation, then yes go ahead and hunt one. But no one in that tribe is starving. The actions of five individuals brought disgrace to the rest of the tribe. I myself know and fish alongside a Makah. He buys his license and obeys the laws set forth by the Dept of fish and wildlife.He is welcome anywhere on the river. He himself does not agree with the actions of these individuals, nor the tribal council. The tribe should not be given the permit to whale.
e_Basile_05-16-08.pdf	I am writing to express my opinion that the Makah, under guidance from their elders, be allowed to resume limited hunting of eastern north Pacific gray whales in the coastal portion of the Tribe's usual and accustomed fishing grounds, off the coast of Washington State, for ceremonial and subsistence purposes. Their traditions should be respected. It is not Indigenous ways that caused the problem. It is commercial whaling. Commercial whaling should be banned worldwide.
e_Bauman_05-10-08.pdf	This question of "cultural relativism" should also include the culture of the whales. I respect all cultures up to the point of doing harm to others and there is no justification for the Makah to kill whales other than to revive a cultural tradition which is harmful to others (whales). Killing or otherwise harming others to continue an outdated cultural tradition is wrong and does not belong in the 21st century. Other cultures have abandoned unsavory practices in their own traditions and I think it is time for the Makah to abandon this violent, macho one.
e_Beck_05-12-08.pdf	Please do not allow the Makahs to start whaling again. It's an old tradition which was necessary for food at one point. They do not have that need anymore. They say it's part of their tradition. There are a lot of things that are other American traditions that are not current anymore. They need to move on and not base their lives on killing a beautiful animal. They need to grow up and find other "traditions".
e_Beck_08-15-08a.pdf	I recommend the “no-action” alternative in the Makah DEIS. Here is why: —Parametrix, the firm hired to prepare the DEIS, has been employed by the Makah Tribe. This is a blatant conflict of interest and renders all the “science” and “facts” presented in the DEIS to be untrustworthy. —Whaling will disrupt the Gray whales’ migration and feeding patterns. The whales are already stressed by dead zones and algae blooms, as well as naval activities. The whales’ response to harassment makes them vulnerable to starvation and reduces reproduction. —The number of vessels and aircraft proposed in the whaling event is untenable. Tourist water craft is minuscule by comparison, and does not tax the whales. —Whaling on the Strait of Juan de Fuca would be dangerous and disrupting for those who live near or along the strait. —The resident population of Gray Whales are used to tourists, kayakers, and sightseers. These folks know the protocol of whale watching. The whales have grown to trust tourists and their patterns of feeding are not disrupted. All this would change with whaling. The whales would be passive targets. —Whaling, as proposed by the Makah, is a smokescreen for the tribe’s true intent: commercial whaling of Humpbacked whales. —The figure of 93 percent of Makah want whaling, is not true. Many Makah oppose whaling. Their voices were not represented in the DEIS. —The Makah tribe has spent $675,000 on the pursuit of whaling between 2003 and 2007. This money could be spent on education, jobs, drug rehabilitation , care for the elderly, housing, and tourism ventures. I also endorse the comments of Peninsula Citizens for the Protection of Whales.

COMMENTER	COMMENT
e_Beck_08-15-08b.pdf	[Duplicate of previous]
e_Becker_06-23-08.pdf	NO WHAILING!!! The native American are supposed to be such kind and caring people but they dropped the ball on this.
e_Bird_05-30-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: in the 21st Century, no human being needs whale meat to survive - including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable - for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty. Thank you for taking the time to read this submission.
e_Bishop_05-09-08.pdf	On the subject of Makah whaling my opinion is of course they should be able to do it but they should be required to do it in the ancient manner with no power boats, no rifles, and no modern technology and they should be required to do any ancient whaling ceremony they used to do. None of this whaling with modern weapons. It would also enrich the community if they did it the old way with the old ceremonies. It was a spiritual thing I think.
e_Blanchard_05-29-08.pdf	Stop screwing with the tribe and let them have their treaty rights. They have been more than patient with the so-called environmental bureaucracy. Typical white man selfishness and controlling.
e_Boggs_06-03-08.pdf	I have great respect for the whaling traditions of the Makah tribe in Neah Bay, but I feel at this time it is more important to protect the lives and well-being of the gray whales. First, I think whaling should not be allowed at all. We can't regulate the actions of, for instance, Japan, but we can show the world the U.S. is serious about banning whale hunting. The Makah's hunting methods seem to be rather cruel and cause extended suffering to the animals. I know there are Makah tribal members who have called for an end to whale hunting. Second, however, I think the U.S. needs to make more of an effort to provide the Makah with alternate means of making a living. If the Makah could live a decent life and support their children, maybe they could limit their traditions to the arts, and leave the actual killing of whales in the past. I know you can't do anything about the second problem, but please consider an end to whaling in the U.S. that might provide hope to the Makah.

COMMENTER	COMMENT
e_Bolbol_06-29-08.pdf	As a U.S. citizen I strong oppose allowing any killing of whales; I oppose allowing the Makah tribe to kill any whales. If needed, financial compensation should be given to the Makah tribe to permanently eliminate any whaling provisions in any ancient treaty. The killing or harassment of marine mammal is a clear violation of the Marine Mammal Act and the law must apply to all; no one should be exempt from this federal law. The National Marine Fisheries Service is mandated to protect marine mammals and it must do its job and stop the Makah from ever again killing a whale.
e_Boyd_05-10-08.pdf	Concerning the whale hunt that the Makah tribe is proposing. This is crazy !! I have lived on the peninsula most of my 65 years, and have lived around and gone to school with the tribe members, they have no more right to hunt whales than I do. In fact with my European heritage, I probably have MORE rights to the whales, seeing that my ancestors were here long before the indians. Sounds nuts doesn't it ?? I am making the point that reviving an age old heritage is something few Makah's give a damn about, and the few that do, are driven by getting there name and pictures in the paper more than reviving history. It is a damn shame that a whale has to die in order to give bragging rights, at the tavern, (not wigwam) to a few that have nothing to contribute to there tribe or our community other than a dead whale that no one eats !! Guaranteed, if no newspaper covered the event, it would stop in a few months. If all reason goes away in this endeavor, at LEAST make the hunt proceed as in the 1800's with hand made weapons and dug out canoes - not with 200 horse power out boards and 50 caliber rifles - If they are sincere in there endeavor to relive the hunts of there ancestors- make them do it in the manner of there ancestors - Guaranteed !! If this were to happen, there would be no further discussion of this matter.
e_Branchflower_05-11-08.pdf	I object strenuously to the the sacrifice of whales for tribal ceremonies. Whales are endangered creatures and could soon become extinct if this is allowed to continue. All creatures feel pain and do not deserve to be tortured and slain.
e_Brandon_05-13-08.pdf	I am writing to let you know that I am opposed to whaling, period. I generally support indigenous rights, including fishing and hunting rights, but whales are the exception. Even a species of whale that is bouncing back still deserves protection. The inhumane whale hunt that was conducted a few years ago when the Makah first asserted their right to begin hunting whales again was just too horrific to bear. They didn’t just kill that whale; they tortured it. Perhaps this was not by deliberate design, but that was the result. Such cruelty cannot be permitted to continue.
e_Brown_05-10-08.pdf	Would it be possible to receive a paper copy of the Makah whale Draft EIS by mail? I live in the country and have slower download speed, so it is very inconvenient to read the document on the internet. I am with the Enduring Legacies Project, at the Evergreen State College, in Olympia, WA and have written a case study for this project on Makah whaling.
e_Brown_06-29-08.pdf	While I do not like the killing of whales, I strongly disagree with the mentality that the government thinks they OWN the whales, or that they somehow have the Gog given right to decide who harvests whales and when they do it. The Neah Bay treaty from the 1800's CLEARLY states that the tribe may hunt whales. Our government reps signed this treaty. Stop violating the constitution and legal agreements and let them go whaling. It was a CONTRACT. This is another case of the gov beating up on the little guy. You should go stop the Japs from killing thousands of whales in the name of research if you are not the fraud that this issue makes you look like.
e_Brown_08-13-08.pdf	The gray whale quota for the Makah should be zero. There is no more justification for hunting these whales by the Makah than there is for countries such as Japan, Norway, Iceland etc. to hunt whales for 'scientific research'. By illegally killing a gray whale last summer and letting the body sink to the bottom of the strait to rot, the Makah have shown complete disregard for laws, rules and regulations.
e_Browne_05-10-08a.pdf	I am OPPOSED to Makah whaling and would like to see the Makah's right to whaling permanently REVOKED for the following reasons:

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	~ The infamous Makah 5 have not only shown no remorse for illegally killing a Gray whale, but have bragged about their actions; saying they have the right to kill any whale, anywhere at anytime. They continue to go unpunished by the authorities for this conduct and have been REWARDED, by not having their whaling rights permanently forfeited.They have also made it known, publicly, that the Makah would be willing to enter into a lucrative deal with the Japanese to sell whale meat...a clear violation of their 1855 treaty and of the IWC's moratorium on the sale of cetacean products. ~ U.S. taxpayers subsidize the Gray whale 'hunt'---not the Makah; as such, U.S. citizens should have the final say in the whaling debate. Over 5 million dollars has been spent to date on whaling, with the Makah continuing to petition their 'favorite' Congressional contacts for more funds. Their latest request? A ship which would cost taxpayers ONE MILLION DOLLARS. ~ CONGRESSIONAL BRIBES PROMPT CONTINUED MAKAH SUPPORT. Former California Republican Representative Richard Pombo received $221,000 + from tribes. In return, he pushed through a resolution which calls the waiver process required by the National Marine Fisheries Service "burdensome, costly and tantamount to a denial of the [Makah] tribe's treaty rights." The resolution went on to urge Congress to express "its disapproval of the abrogation of the tribe's treaty rights, and that the government of the United States should uphold the treaty rights of the Makah Tribe." Pombo ranked third among all House members in terms of tribal donations. ~ The Makah have been REFUSED PERMISSION TO WHALE by the International Whaling Commission. They were denied because they do not fit the criteria for either 'cultural' or 'subsistence' whaling. The Makah circumvented the IWC's denial by using the political clout of then head of NOAA, D. James Baker, who brokered a back-room deal with the Russians which allowed the Makah to take a portion of the Russian Gray whale subsistence quota. The IWC, to this day, has NEVER given permission to the Makah to whale...IWC guidelines supercede Makah treaty whaling rights. ~ As a signatory of the International Whaling Commission's moratorium on whaling, the U.S. is breaking its own anti-whaling agreement and international law by allowing the Makah to continue whaling. ~ Gray whales were removed from the Endangered Species List due to the political wrangling of the Makah--NOT VALID SCIENTIFIC STUDIES. Scientists, who believe Gray whale populations are at an historical all-time low, have observed decreasing numbers each year and have serious concerns about their health. Large numbers of gray whales have recently been discovered suffering from starvation. http://www.eurekale rt.org/pub_ releases/ 2007-09/s- gwa090407. Php ~ Several elders within the Makah tribe are AGAINST whaling and in favor of WHALE WATCHING to bring income into Makah coffers. Their voices should be heard. This is their appeal: The whale hunt issue has never been brought to the [Makah] people to inform them, and there is no spiritual training going on. We believe they, the [Makah] Council, will just shoot the whale, and we think the word "subsistence" is the wrong thing to say when our people haven't used or had whale meat/blubber since the early 1900's. For these reasons we believe the hunt is only for the money. They can't say "Traditional, Spiritual and for Subsistence" in the same breath when no training is going on, just talk. Whale watching is an alternative we support. ~ The Makah Treaty of 1855; [specifically Article 4, which allows the tribe to whale], is a 152 year old document; one which pre-dates the AMERICAN CIVIL WAR BY 6 YEARS, and is therefore no longer relevant in a world where cetaceans now face overwhelming threats to their survival due to global warming, overfishing, ship strikes, sonar disturbances, pollution and disease. Slow reproductive rates and an unacceptably prolonged and cruel manner of slaughter dictate that cetaceans should be spared whaling in ANY form. ~ Makah cousins, members of the Maa-nulth First Nations, who reside on the Western shores of Vancouver Island have signed an agreement with the Canadian government in which they will honor a 25 year moratorium of their whaling rights. In return, they were given generous concessions of land and cash. If the Makah are genuinely interested in "honoring" whales, they must be committed to allowing them to

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	live in peace and safety; while helping improve the quality of life for ALL Makah--not just the privileged few who never allow the majority a voice. The entire Makah tribe should be given a vote on what types of concessions they would want in lieu of forfeiting whaling.
e_Buazard_05-29-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Bumrungsap_05-13-08.pdf	Please make a decision not to resume limited hunting of eastern north Pacific gray whales in the coastal portion of the Tribe's usual and accustomed fishing grounds. Various alternatives are still unacceptable because whale hunt is unnecessary and cruel. Please make the right decision by not allowing the whale hunt.
e_Bumrungsap_06-14-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.

COMMENTER	COMMENT
e_Burke_05-12-08.pdf	I believe the last time they killed a whale, legally, most of it's flesh was left to rot on the beach. My friends who live out that way, said they couldn't pay people to eat the blubber. I'm all for Indian rights as long as we remain back in time during the 17 and 1800's when the treaties were signed. But the world has changed since then. Those treaties might be applicable if whales and salmon were at the same population levels they were or even at the levels of 20 years ago. No outdated treaty should have precedence when those fisheries are now close to levels that go below the species threshold of genetic sustainability. For some of our waters, that genetic sustainability has already disappeared with the fish. What amazes me is that wasting a whale seems to be systemic. The Makah had a by catch of 5000 Chinook. That didn't seem to bother them that much either. I would argue that when those treaties were signed, fish and whale were bountiful. Now, because of hatcheries, no fish is even remotely the same as 300 hundred years ago. And the whale and the fisheries that do have a good genetic pool left to work from are at levels that will not sustain any population growth. Populations may be dropping faster now because of genetic inferiority, not climate change. Climate change has always been around and yet they survived. Genetics is important. Just look at what happened when the Bush administration tried to have hatchery fish counted as part of the wild fish population saying they were the same. Turns out it isn't true. They are not the same. So lets go with that decision. Then that means the fish and whale that are mentioned in those treaties are not the same fish genetically as when they were signed. The treaties should be null and void. Everything should be null and void when we are at risk for losing all of our original fisheries and are this close to extinction. The only fix is to shut down all fishing (whales or their food sources), from Nome to San Diego. Tribal, commercial and sport. When I say that, it pains me to think I may never fly fish again in my favorite river. But at least I'm not just thinking of myself and leaving rotting flesh on the beach. It would be for the greater good.
e_Burlingham_06-15-08.pdf	I'm fully in support of the Makah to maintain their treaty rights to whaling. I believe the environmental impact would be much less significant than the harm to the Makah themselves, as a people and as a nation. We (the US) agreed to the Makah's right to whale when negotiating with the tribe many years ago. We need to stand by our word. I know the US government didn't always (ever?) negotiate tribal treaties in good faith, but if we see and think more clearly now and have the integrity that our ancestors lacked, we need to make good on their words and agreements. Though I'm a Seattle resident, I grew up in a small town in New York state on a dairy farm. Many of my schoolmates or neighbors relied on hunted food for their meals. In my family, we relied on food grown in our large garden to supplement many of our meals. It wasn't a rich area. I'm comfortable with the need of some to keep food on the table and maintain a cultural heritage by taking the lives of animals. On the first day of deer hunting season, my town's school hallways were cleared out because so many kids went hunting with their families that day. That, too, is the sign of a cultural practice that receives very little notice or attention despite a similar focus on killing animals. I trust the Makah tribe to hunt in a respectful and harmonious way, notwithstanding the actions of some of their members in recent months. Every community has those who act outside community expectation and the law. The tribe as a whole has condemned the actions of a few. I believe the tribe's method of hunting would be law-abiding--tribal, US federal, and international law--and in keeping with cultural practice and maintaining environmental balance. The tribe has waited years for the results of this environmental impact statement and as a group has not hunted during that time. They have followed procedure, waiting for permission to continue a practice that is already their right. It's time for us, the US, to honor our commitment to our neighbors and "allow" what isn't truly ours to give, but what we have chosen to make ours to take away--the right to maintain and transmit to one's children the cultural practices and values of one's people.

COMMENTER	COMMENT
	Thank you for making the opportunity to comment on this process. I look forward to the day when the Makah are given the go-ahead to choose to hunt or not to hunt as they see fit. It should be the tribe's decision, not ours as US citizens.
e_Bush_06-20-08.pdf	I oppose the whaling hunt by the the Makah tribe. In considering the cold, and careless shooting of the Gray last year, as well as the botched and ill-planned hunt in 1999, I can't see any continuity of the ancestral spiritual traditions of an ancient people. This is a different world from 300 years ago and we can't go back to that age of balance and abundance. Its time for all of Humankind to create a CULTURE OF RESPECT and reverence towards the creatures we live amongst. Without it, we won't survive.
e_Bushnell_06-27-08.pdf	I urge that the Makah Tribe not be allowed to kill whales. Having such an outdated loophole in whale protection on the books calls for it to be revoked. The Makah certainly do not need to kill whales for food in these modern times. Nor should they be allowed to indulge in a destructive and ecologically unjustified practice for "old times sake." The Makah Tribe should definitely receive respect and fairness as a cultural entity, but they should not be allowed to continue the very cruel and harmful practice of killing whales. I am surprised that as native people they do not end this bad practice themselves.
e_Buslot_05-29-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter.. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Butts_05-10-08.pdf	I am not in favor of permitting the whale hunt. Whale population figures are only estimates based on meager data. Whales are also very sensitive to environmental changes; many of which could have a significant impact on the whale population in a very short period of time. Until we know that the species is plentiful and their environment stable, I do not believe it prudent to allow any activity that would diminish or stress the population.
e_Calvert_05-10-08	Request for comment period extension
e_Case_06-03-08a	If the Makah insist on maintaining their traditional "rights" to whaling, then let it be done in the traditional way with the traditional equipment. Tradition cannot be maintained using modern equipment such as power boats and power harpoons and guns. That would be using an anachronism to create a travesty of tradition. The most recent example of this resulted in 9 hours of suffering for the whale with complete loss of the animal. If people insist on tradition, then let them abide by it completely.

COMMENTER	COMMENT
e_Case_06-03-08b	If some of the whales in the oceans "belong" to people who want to destroy them, then it stands to reason that some of those whales also "belong" to people who do not want them killed. Aren't the whale killers destroying the property of the whale preservers, and isn't that illegal?
e_Chemes_06-02-08	I implore you not to allow any limited hunting of eastern north Pacific gray whales. These whales deserve protection and a peaceful life and there is no reason to hunt them when there are other resources available.
e_Christensen_05-12-08	I believe the Makah tribe should be allowed to hunt grey whales as the treaty stipulates, with the folowing parameters: 1, No motorized vessels allowed..only handmade canoes of the type and size used in 1855. canoes must be paddled all the way from village...no motorized transport to whales allowed. 2. Use only handmade spears in the hunt..no metal spear points allowed. No explosives. 3. No firearms allowed in the hunt. 4. No electronic communication devices allowed. In summary, all hunts would only use methods and equipment in use in 1855.
e_Christensen_05-14-08	As a US citizen and resident of WA state, I urge you to uphold the Marine Mammal Protection Act and to proceed with the "no-action" option in regards to the Makah's application to hunt gray whales. I understand what a delicate issue this is, and in general, believe that treaties with our Native American tribes should be upheld. In this particular instance, I feel that the needs of the whales, whose numbers have already been greatly diminished by human activity, should supersede the desire of the tribe to hunt. Truly, there is no subsistence need to hunt whales. Plenty of nourishing food is available here in Washington state. As for cultural needs, I believe that cultures must find ways to bring their people together, but that those activities also must evolve with the changes in our society's values and our environment's needs. Dog fighting, polygamous marriage, slavery, female genital mutilation, "honor" killings, and many other offensive but culturally binding activities have all been popular at one time and now are no longer acceptable to our people. I believe that the hunting of whales also falls into this category. In order for whales to survive as a species, those cultures, such as the Norwegians, Japanese and Makah, who have important history as whale hunters need to redefine themselves. While I don't want to reduce this dilemma to a simplistic answer, perhaps there is something to be learned from the gradual transition of safari hunting to photo-safaris as people begin to understand the devastation that hunting wreaks on game animals and their habitats in Africa.
e_Christiansen_05-09-08	After looking up the definition of an Environmental Impact Statement I would have to be commenting on the social implications of the Makah being allowed to hunt grey whales. Firstly, let me point out that this treaty was signed in 1855 before the end of slavery and well before much global awareness. What if southern plantation owners tried to assert a right to an economic and 'cultural' return to 1855. The very thought is repugnant. At one time cowboys shot buffalo from trains, women were denied the vote, blacks were segragated; just because a practice is part of our 'heritage' does not mean it has value by todays standards. We know that grey whales are not only intelligent but have been known to fight for their survival. With a modern understanding of these marine mammals I am repulsed that the Makah would claim a right to kill them, for any reason. What social implications and legal rights will this impart on other tribes who assert similar claims to do things based on 'heritage' or sovereignty? How much social strife will be caused in a State where the environment and all of its life are held dear? The federal

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	government needs to send the message now...that even sovereign native peoples must abide by US law, move forward into the 21st century, and sometimes only teach their children about things they once practiced.
e_Churchill_05-14-08	Things have changed considerably since the Treaty of 1855. Leave the whales alone. There are many people whose ancestors had certain habits. I, for instance, do not feel the need to paint my face blue and run around pillaging and killing in order to feel a closeness with my heritage. If permission to kill the whales is granted, it should be done in boats without motors and with only harpoons for the kill (no guns) as it was done in 1855.
e_CinderQH_05-12-08	Please do not allow the Makah or any other tribe or group to kill whales. Some traditions are to be respected (and some are not) and while this may have been a respected way to support a tribe in the past and to celebrate rituals, all societies must grow and change with the movement of time. The whales belong to all of us, and survive in familial groups. Even taking just a few individuals affects genetic diversity and the continuity of survival knowledge (yes, this is passed on from generation to generation in whales, bears, and other higher mammals). My first degree was in resource management and studies in ecology, zoology, and biology and my appeal is based on science as well as a collective sense of loss when these animals are taken. We all must make sacrifices today to retain a healthy world to live in....and some things that are incalculable today may be essential tomorrow.
e_Clark_05-29-08	No tribal custom can be justified if it causes the suffering and death of any sentient creature. The Makah do not *need* the whale, they only *want* it. Enough said.
e_Coffey_05-11-08	I read a lot about this issue and must voice my opinion at this time. If the tribes want ancestral hunting rights they should have them, but they should be required to hunt the way there ancestors did. They should be required to paddle out with paddles made like their ancestral paddles, in dugout canoes made like their ancestral canoes and use wooden spears like their ancestors did. Then they can tow the animal back to the beach with their paddles and canoes and use the materials only for themselves, they should not be allowed to sell any part of the animal or make any kind of profit from the hunt or the animal products. After all, they want the right for religious reasons, correct? If these people have to do the things their ancestors did, the way their ancestors did, they may not be so inclined. To me this just looks like another scheme for profit. The native peoples hunted these animals for sustenance, not for pleasure. The religious part was in thanks for the bounty not for the hunt. If there had been an easier way for these people to survive they would have taken it. If they want ancestral hunting rights for the correct reasons they should have them, but only using the methods used before white mans contributions.
e_Collins_05-28-08	There are millions of people all over the world who care deeply about animal welfare and who are regularly alerted to issues such as this, and will be watching closely to see what decision you make. In the 21st century, there is no justification for this primeval barbarity being inflicted on living creatures, and it is the responsibility of all civilised people to put a stop to it. You cannot allow whales to be butchered and bleed to death in agony over several hours, so for God's sake do the decent thing and outlaw this.
e_Conlan_06-22-08	I can understand the importance of whale hunting to the Makah people. It was a high honor to be selected for the whale hunts, by the Makah; and part of their tradition. IF they want to continue the tradition, then the hunt should be by traditional methods; row boats and spears - NOT using today's technology.

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e_Cooper_05-10-08	The Makahs have treaty rights to take whales. I would hope the general public, the federal and state governments will leave them alone to exercise provisions of their treaty as they see fit. They are wonderful people and have been mistreated by all in the past. Now lets leave them alone.
e_Cooper_05-11-08	Read about this in the P.I. paper and would like to say that I don't think they should be alloqwed to hunt whales, or any one else for that matter. Times have changed, and we should really look at absolving these treaties, many other treaties that the U.S. Govement have signed have been updated thru time.
e_Cope_05-09-08	Thank you for taking public comment on this issue. I do not agree with upholding the Makah tribes treaty rights to hunt grey whales off Washington coast.There needs to be significant penalties imposed on the tribe following the non sanctioned hunt last fall. I do not believe that no jail time is an ok exchange for a guilty plea. Especially when the whale they hunted suffered for ten hours. I understand that the guidelines provided to the tribe are in place to prevent the suffering of the whales during the hunt. But if you watched the hunt, like I did in 1999 you cannot say that the grey did not suffer. If the tribe feels so strongly that they need to preserve their ancestry, then they need to hunt like their ancestors. Paddle out, use a harpoon and then paddle back in towing the whale back to shore using their own strength and determination. I don't believe their ancestors used power boats to tow their kill back to shore. And if someone is injured or killed during the process it was their decision to be there and take part. Lastly I hope there is a significant look at how this will impact the whale population and environment. When our environment is facing challenges already, and those environmental issues will eventually affect the health and preservation of this species. Shouldn't we do all we can to maintain and preserve the current population of grey's.
e_Cowles_05-10-08	The Indian tribe says it is in it's heritage to be whalers. let them be whalers like their ancestors let the row a canoe, that has been built by hand, and use harpoons, thrown by hands, just like their great ancestors. IF they insist on using modern technologies, high powered boats and 50 caliber rifles to do this manly killing of innocent and limited species, then they need to abandon their centuries old claims of treaties that were signed long ago before the modern weapons were available. Hunting for ego has long been a problem for the animals that were here long before mankind and their new and improved ways of killing.
e_Crandall_05-15-08	Pay the $20 fine. Who needs a permit. Why bother.
e_Creager_05-12-08	Honor the 1855 treaty with the Makah's reserved right to take whales as they need for their purposes before any other whaling within the US jurisdiction is allowed… for many reasons, one being that this would be the easiest to uphold before the Supreme Court if the issue was before it for review.
e_Crone_05-10-08	I see no reason to hunt whales in this day and age. My input is-NO HUNT.
e_Cubala_05-30-08	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As

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	you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Curet_05-10-08	I would suggest that if the Makahs are extended the right to hunt whales they should be limited to hunt with facsimiles of the same equipment of the forefathers - not modern equipment.
e_Daisy_08-15-08.pdf	I am totally against whaling...the chase is a horrific experience for the animals, and many will be chased , injured and not caught. In this day and age, it is time to let go of the past "traditions", and teach a new generation respect for the whales.(for people who talk like nature is so dear to them, it appears the Whales are not so dear to them.) They plainly do not need the Whales for food. The government.gives money to every tribe, (I believe the Queets get 65 separate grants,) much of it doled out by the "chiefs" and is misspent. Between the handouts, and any employment some may have, they have as much or more money for " meat and fish" than the average person I know. Besides that, they get the bulk of " everybody s" fish to resale. They also have their own free dental, medical, and mental health clinics, plus they can use any of the "white mans" too. These tribesmen need to grow up , and quit the wasting of Whales lives.Most of us have had to give up traditions we had, and have become a intermingled part of our nation. Remember when one of the tribes claimed the spirit of one of their grandfathers was in a particular whale? Well maybe I think my grandfather, and fathers spirit are in some of those whales. They need to consider my feelings too. Its time to stop this chasing/ killing of our Whales, who, think the boats and humans are friends.
e_DannyMan_08-15-08.pdf	You do not need the Grey Whale to survive. I respect your traditions but accept that the day of hunting Whales should be long over. You want to bring shame to your tribe then you go ahead. Bad spirit will come your way,mark my words.
e_Daveys_07-29-08.pdf	We are totally against any more killing of the gray whales by the Makah tribe. The last whale was killed and then slowly sang to the bottom of the ocean, not even using the whale meat. It was a disgrace! We need to save these magnificent creatures instead of harpooning them and making them suffer, for no apparent reason. It's been proved time and time again, how much whales communicate with one another and how they raise families. To kill one of this beautiful animals for the sake of the hunt is horrible. The Makah have plenty of other traditions that they can continue without depleting the Gray Whale population!
e_Davidson_05-11-08.pdf	I am opposed to Grey Whale hunting by anyone off the Washington Coast.
e_Davis_05-10-08.pdf	The treaty rights of the Makah tribe to hunt whales in their usual and accustomed grounds is law. Public opinion can’t change a treaty. While affirming Makah treaty rights, in the interests of the environment and the survival of the whale population, I would prefer that the Makah tribe and its members forego their legal right to actually hunt and kill whales.
e_Davis_05-12-08.pdf	I am a lifelong resident of Seattle. I want to go on record as strongly OPPOSING ANY whale hunts/killing whatsoever, NONE ! Why? Because a native american cultural/historical past of whale hunting does not give them any more given right to kill than validifying sacrificing young maidens to volcano gods (which also done in the past) The purpose of knowledge, science and education is to use it. The past is over and whale hunting should absolutely not be taking place. Native american culture can be, and should be, maintained but within what they know now too: whales are very cognizant , peaceful life forms that must be protected.

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	I was completely disgusted at the (fairly) recent whale murders by apparently self-righteous native american killers. Disgusted!! Absolutely NO !!!! to killing whales.....no valid reason ... not acceptable.... NO !!!!
e_Decjme_08-14-08.pdf	Any and all whaling should be denied.
e_Dell-Bryan_05-18-08.pdf	It was with absolute shock and horror that I read of the cruelty towards an endangered gray whale that Makah people seem to find acceptable. This beautiful whale took an agonizing 10 hours to die! Worse still, its body has yet to be recovered. Those who waste our ocean's resources are not only perpetrating a crime against some of the most magnificent animals on earth, they are creating a generation inured to cruelty. It is difficult for civilized countries to imagine such barbarity towards endangered species of whales. Perhaps you are unaware of how they cry with pain. These are primitive and savage acts that reflect badly on the Makah tribe and United States' citizens. Your country can impact the fate of the world's endangered whales. It would be unconscionable to support a tribe of people who displayed so little compassion to those who are weak or have no voice. It is time that people were educated to realize that animals feel pain and fear. Only the very basest of human beings are incapable of recognizing this. I hope that there are educated and compassionate people in your country who will work towards making life more tolerable for whales and dolphins. Many of these animals face extinction due to hunting. It is time to permanently stop the very cruel, barbaric and horrifying whaling industry. It is time to criminally prosecute anyone who persists in whaling. This would give your country considerably more respect in the eyes of the civilized world.
e_Diane_05-21-08a.pdf	I WANT TO EXPRESS MY OUTRAGE that the 5 Makah criminals WILL NOT SERVE JAIL TIME; WILL NOT BE PROSECUTED BY THEIR OWN TRIBE or anyone else, and will be FINED--20 BUCKS A PIECE!!!!!!! for murder--THEY MUST NOT BE REWARDED by being allowed to continue whaling!! $20.00...the extent of justice; of punishment, for the murder of an innocent being which suffered for more than 10 HOURS!! before slipping beneath the waves. OBSCENE, DISGUSTING AND A MONSTROUS TRAVESTY, please don't allow NOAA, the justice system and the Makah to get away with it!!!
e_Diane_05-21-08c.pdf	I am petitioning NOAA; asking that the agency permanently STRIP Makah whaling rights for the following reasons: A) The Makah Treaty of 1855; [specifically Article 4, which allows the tribe to whale], is a 152 year old document; one which pre-dates the AMERICAN CIVIL WAR BY 6 YEARS, and is therefore no longer relevant; anymore than the past tradition of slavery, WHICH THE MAKAH TRIBE FORFEITED WHEN SIGNING THIS TREATY. That's right folks, the Makah owned slaves!! B) The Makah claim of 'subsistence' whaling [under the International Whaling Commission's criteria] is obviously false. You can not "subsist" on whales that your tribe has not hunted for over 70 years. C) The Makah right to whaling on a 'cultural' basis is no longer true or applicable. In the hunt of 1999 the tribe availed itself of speed boats; cell phones; Coast Guard cutters; "spotters" from helicopters; high powered rifles and machine guns to bring down their prey. The traditional long boats and spears used by their ancestors played a minor and incidental role in the kill. From a "traditional" standpoint, the methods employed were solidly 21st century...and a complete travesty of Makah ancient whaling practices. [It should also be noted that when the 1999 "hunt" was complete, the Makah people (other than a few elders who tasted one or two strips of flesh) left 99.9% of this whale's body to ROT on the beach].

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	D) Whale populations are being depleted at an alarming rate. Pollution, global warming, dwindling food sources, ship strikes, disease, sonar disturbances and rogue whaling worldwide, have all taken a devastating toll on a species capable of producing only one calf, per adult female, per year. No ONE group should be exempt from the global responsibility we ALL share for ensuring the continued survival of our whales. Scientists have recently admitted to miscalculating the 'success' of the Gray whales' return from the brink of extinction. They have observed several 'skinny' Gray whales and conclude that their food sources may be rapidly declining due to global warming. E) The Makah's cousins [and closest relatives, because the Makah Tribe has no connection to any other U.S. tribe], members of the Maa-nulth First Nations, who reside on the Western shores of Vancouver Island have signed an agreement with the Canadian government in which they will honor a 25 year moratorium of their whaling rights. In return, they were given generous concessions of land and cash. If the Makah are genuinely interested in "honoring" whales, they must be committed to allowing them to live in peace and safety; while helping improve the quality of life for all Makah by increasing financial and educational opportunities for their people. At a time when the world is faced with multiple species extinction; pollution; global warming and rapidly dwindling natural resources, eliminating ALL whaling is the only ethical, moral and ecologically responsible decision to uphold.
e_Diane_05-21-08d.pdf	THE MAKAH RECENTLY RELEASED A STATEMENT SAYING THEY ARE PREPARING FOR ANOTHER 'HUNT' WITHIN THE NEXT 24 MONTHS! Since NOAA nor any other government agency has yet to give them the proper waiver necessary to continue whaling, it seems evident that the Makah know something the rest of us do not!! THIS IS THE TRIBE WHO-ACTING ALONE-HAD GRAY WHALES REMOVED FROM THE ENDANGERED SPECIES LIST!!! THE MAKAH'S ONLY REASON FOR HUNTING GRAY WHALES IS TO SELL THE WHALE MEAT TO JAPAN FOR BIG $$$!! IT HAS NOTHING TO DO WITH CULTURE OR TRADITION--ONLY GREED! IT ALSO BREAKS THEIR OWN TREATY AGREEMENT AND INTERNATIONAL LAW! A MIGHTY PUBLIC OUTCRY IS NEEDED TO COUNTERACT THIS DISGUSTING, OUTRAGEOUS FARCE OF A TRIAL AND TO CIRCUMVENT THE CORRUPT POLITICAL POWER OF THIS TRIBE. PLEASE KEEP THE PRESSURE ON UNTIL MAKAH WHALING IS HISTORY! I DEMAND THAT IN LIGHT OF THIS EXTREMELY BRAZEN AND EVIL ACT, THE MAKAH IMMEDIATELY LOSE ANY RIGHT TO CONSIDERATION OF A MMPA WAIVER; THUS CLOSING THE LEGAL OPPORTUNITY FOR FUTURE WHALING !
e_Dinesen_08-15-08.pdf	Whale hunting may be the Makah's cultural tradition but if they respected their ancestors they would realize that they only hunted for what they needed to survive. To kill whales for the sport of it or to sell to Japan is a discrace to their ancestors and their tribal heritage. What happened to the last whale they slaughtered? I heard that very few tribal members could or would eat it and that much of it rotted. This may or may not be true. So what is the real reason for killing them? Who is going to eat whale if you can go to McDonald's? If they really want to keep their cultural tradition They won't kill what they do not need to survive.
e_Dishmon_05-11-08.pdf	Hi it is my idea that if they want us to honor a treaty , then they should hunt like in the 1800s no power boats, no guns. Since time has changed so should the treaty , I say there should be no hunt. What are they gonna do with the whale? in the 1800s they used EVERY part of the whale to survive and feed there people , there not starving today. Its there right as Indian's, it a right of passage to manhood. Well what have they been doing the last 100 years or so ? Are they all children? There are 24,000 whales in the whole world, the population is stable. WHY are they gonna destabilize it now? why make the same mistakes of the past .
e_Doerksen_06-21-08.pdf	I oppose the Makah hunting whales, in this day and age there is no need for it for food. To continue this to uphold tradition is unacceptable. The whale population has just re bounded and we do not know any long term result from this. To continue to hunt whales un necessarily is barbaric. Furthermore the Makah have shown little regard for the law. Their attempt at hunting a whale - unauthorized - shows that they have little consideration for the whale to be killed painlessly and quickly.

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	In the past hunting whales was part of their way of life, granted- but part of that life was also living in tents instead of houses, not having an education instead of a university degree, and numerous other differences. If tradition is that important to them , they should also give up the modern daily life as it is not in keeping with tradition. If hunting the whales was proved to be necessary for their livelihood and day to day nourishment,then I would not object but they want to hunt for tradition only. Therefore I am opposed to the Makah tribe being given permission to hunt whales. And should they take it upon themselves to "again" oppose the law and hunt unauthorized, then they should be punished to the fullest extent the law allows and the tribe should lose all and any rights or opportunities to hunt whales.
e_DOI_07-08-08.pdf	The Department of the Interior has reviewed the Draft Environmental Impact Statement for the Makah Tribe's Request to Hunt Eastern North Pacific Gray Whales off the Coast of Washington State. The Department does not have any comments to offer.
e_Domenech_08-14-08.pdf	I am writing to ask you to consider Alternative 1, the No-action Alternative to the proposed Makah gray whale hunt. There are many reasons the Makah should not be allowed to violate the MMPA and hunt gray whales. First of all, gray whales, like many other whales, face many threats. Lack of food, ship strikes, pollution, and global warming, to name a few. With all the threats they face in today's world, it simply does not make sense to add another unnecessary threat. At the EIS hearing in Seattle, the NOAA representative admitted that the threats faced by global warming and its impact on the gray whales food supply had not been addressed. Secondly, though the gray whale population appears to be stable, researchers who work with the gray whales in Mexico have reported low calf counts, fewer whales returning to breed and whales arriving at the breeding grounds very thin. None of these are good signs for the gray whale population and its uncertain future. Instead of authorizing this hunt, the U.S. government should consider working with the Makah on alternatives to hunting gray whales. The Canadian govt. worked with some First Nations tribes by offering the tribes land and mining rights if they would agree to not hunt gray whales. If the U.S. government were to consider offering fishing rights, land or some other compensation, they may be able to convince the Makah not to hunt at all. It would undoubtedly save the government money, as the cost of preparing this EIS, as well as the cost of law enforcement if the hunt does actually take place, must be quite high. The humane aspect of the hunt must also be considered. Gray whales are gentle and accustomed to humans and boats. Many of these whales have been around whale watch boats most of their lives and have no fear of humans or boats. In this day and age, there is no reason for the Makah to kill whales. Since most of the last gray whale the Makah killed was not used in any way, subsistence in not a reason. Cultural traditions can be honored without actual killing, as many of the other tribes in the area have shown. Please consider the No-action Alternative as the right alternative.
e_Drake_05-21-08.pdf	Request for comment period extension
e_Duits_06-30-08.pdf	I understand that public opinion is now being taken into consideration with regard to the decision to allow the Makah to resume the whale hunt. I understand the Makah are trying to regain some of the old ways, but I think this hunt should not be allowed. In my opinion, the fact that the last hunt was done illegally and in such an inhumane manner should also factor into this decision. Why would permission for something this unnecessary now be granted when rules and guidelines were so boldly disrespected before? Please give serious consideration to the opinion and request from those of us who oppose giving permission for this practice!
e_Eastin_06-01-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales.

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	I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Ed_05-20-08.pdf	Please support the Makah Indians in their request for whaling. It is important that we as Americans stand up and support treaties that we have made - it is called integrity. The Makah are the real environmentalists. The opposition ignores Science and their position is based on emotion and a political aganda that is not consistent with Freedom and our countries obligations to Indian Treaties.
e_Egan_05-12-08.pdf	In my world, "everybody knows" that Makahs have a treaty and the treaty says they should be able to hunt whales. The waiver should be granted for the full take request and the hunt should be resumed. In the 1855 Treaty of Neah Bay, the Makah Tribe secured an express right to hunt whales throughout their usual and accustomed areas. This Treaty has not been abrogated by any subsequent statute including the Marine Mammal Protection Act (MMPA). However, the Ninth Circuit Court of Appeals said that the Tribe must get a waiver from the National Oceanic and Atmospheric Administration (NOAA) for the MMPA before the Tribe may exercise its Treaty whaling rights. Anderson v. Evans, 371 The waiver of the take moratorium under Section 101(a)(3) of the MMPA, 16 U.S.C. § 1371(a)(3), to allow aceremonial and subsistence (C&S) harvest from the Eastern North Pacific stock of gray whales (Eschrichtius robustus) within the Makah Tribe's adjudicated usual and accustomed grounds SHOULD NOW BE GRANTED!!! PLEASE STOP WASTING TIME! It has been THREE YEARS before the draft EIS came out. What was the hold up? Regardless, it is a shame that the Makahs have been subject to such bureaucratic nonsense. Please allow for a total take of 20 gray whales in any five-year period subject to a maximum of five gray whales in any calendar year. Grant the waiver.
e_Egger_05-11-08.pdf	We are opposed to the hunt of a gray whale There is no practical need for this whatsoever. To say it is carrying on some kind of cultural ritual is just an excuse for a bunch of macho juveniles to kill a lovely animal who is part of our ecosystem. For anyone to sanction this is to join the cult of savagery that enjoys causing death in the name of sport.
e_Erdmenger_05-10-08.pdf	Please not that I am totally against any killing of whales, so do not allow the Makah Indian Nation to kill any of them...NONE!
e_Erickson_05-12-08.pdf	I support the Makah's Tribe 1855 Treaty right to hunt Grey Whales. I tried to work my way throught the enviromental impact statement but am not a lawyer. The native people have been lied and cheated by the federal government for hundreds of years and stripped of their treaty rights one after another. As long as a minimal number are hunted in a traditional fashion they should be left alone to

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	preserve their culture. I also believe that the federal government has a duty to protect the established treaty rights by keeping protestors and news media 10 miles away from their activities. It would be nice to think that at least one treaty was not broken with the native people.
e_Evans_05-10-08.pdf	~ U.S. taxpayers subsidize the Gray whale 'hunt'---not the Makah; as such, U.S. citizens should have the final say in the whaling debate. Over 5 million dollars has been spent to date on whaling, with the Makah continuing to petition their 'favorite' Congressional contacts for more funds. Their latest request? A ship which would cost taxpayers ONE MILLION DOLLARS. ~ CONGRESSIONAL BRIBES PROMPT CONTINUED MAKAH SUPPORT. Former California Republican Representative Richard Pombo received $221,000 + from tribes. In return, he pushed through a resolution which calls the waiver process required by the National Marine Fisheries Service "burdensome, costly and tantamount to a denial of the [Makah] tribe's treaty rights." The resolution went on to urge Congress to express "its disapproval of the abrogation of the tribe's treaty rights, and that the government of the United States should uphold the treaty rights of the Makah Tribe." Pombo ranked third among all House members in terms of tribal donations. ~ The Makah have been REFUSED PERMISSION TO WHALE by the International Whaling Commission. They were denied because they do not fit the criteria for either 'cultural' or 'subsistence' whaling. The Makah circumvented the IWC's denial by using the political clout of then head of NOAA, D. James Baker, who brokered a back-room deal with the Russians which allowed the Makah to take a portion of the Russian Gray whale subsistence quota. The IWC, to this day, has NEVER given permission to the Makah to whale...IWC guidelines supercede Makah treaty whaling rights. ~ As a signatory of the International Whaling Commission's moratorium on whaling, the U.S. is breaking its own anti-whaling agreement and international law by allowing the Makah to continue whaling. ~ Gray whales were removed from the Endangered Species List due to the political wrangling of the Makah--NOT VALID SCIENTIFIC STUDIES. Scientists, who believe Gray whale populations are at an historical all-time low, have observed decreasing numbers each year and have serious concerns about their health. Large numbers of gray whales have recently been discovered suffering from starvation. http://www.eurekale rt.org/pub_ releases/ 2007-09/s- gwa090407. php ~ Several elders within the Makah tribe are AGAINST whaling and in favor of WHALE WATCHING to bring income into Makah coffers. Their voices should be heard. This is their appeal: The whale hunt issue has never been brought to the [Makah] people to inform them, and there is no spiritual training going on. We believe they, the [Makah] Council, will just shoot the whale, and we think the word "subsistence" is the wrong thing to say when our people haven't used or had whale meat/blubber since the early 1900's. For these reasons we believe the hunt is only for the money. They can't say "Traditional, Spiritual and for Subsistence" in the same breath when no training is going on, just talk. Whale watching is an alternative we support: ~ The Makah Treaty of 1855; [specifically Article 4, which allows the tribe to whale], is a 152 year old document; one which pre-dates the AMERICAN CIVIL WAR BY 6 YEARS, and is therefore no longer relevant in a world where cetaceans now face overwhelming threats to their survival due to global warming, overfishing, ship strikes, sonar disturbances, pollution and disease. Slow reproductive rates and an unacceptably prolonged and cruel manner of slaughter dictate that cetaceans should be spared whaling in ANY form. ~ Makah cousins, members of the Maa-nulth First Nations, who reside on the Western shores of Vancouver Island have signed an agreement with the Canadian government in which they will honor a 25 year moratorium of their whaling rights. In return, they were given generous concessions of land and cash. If the Makah are genuinely interested in "honoring" whales, they must be committed to allowing them to live in peace and safety; while helping improve the quality of life for ALL Makah--not just the privileged few who never

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	allow the majority a voice. The entire Makah tribe should be given a vote on what types of concessions they would want in lieu of forfeiting whaling.
e_Evans_05-15-08.pdf	A WHALE'S LIFE & AGONIZING SUFFERING = $20 PER THUG They promised tough prosecution, but in the end the Makah Nation couldn't put together a jury to try five whalers who were charged with illegally killing a gray whale off Neah Bay last fall. Tribal Judge Stanley Myers on Wednesday instead granted the men one-year deferred prosecution and promised to dismiss the charges if they committed no offenses during that time. The whalers also were each ordered to pay a $20 fine. The deferral came after the judge summoned more than 200 people from the remote village of Neah Bay on the Olympic Peninsula to serve as potential jurors. But the judge gave up on empaneling a jury because just about everyone was either related or said they had strong feelings about the case, according to one of the whalers, Wayne Johnson. ... Animal-rights activists were dismayed at the tribal judge's ruling Wednesday. "There should have been a better show of discipline here," said Naomi Rose, lead scientist with the Humane Society of the United States in Washington
e_Everett_07-07-08.pdf	I am writing this letter to express my views about the Makah Indian Tribe's request to hunt gray whales off the coast of Washington State. I attended the public hearing held in Seattle on June 2, 2008 and have reviewed a copy of the Draft Environmental Impact Statement for Proposed Authorization of the Makah Whale Hunt. I came away from the public meeting feeling torn. On one hand, I respect the Makah's history and tradition of whaling. On the other hand, I am deeply concerned about the plight of whales and want to do everything I can to protect them. I grew up in Washington State, but did not see my first whale until this summer. It was an amazing and breathtaking experience. I know that the Makah revere whales, but this is at odds with the desire to kill them. There is no truly humane way to hunt a whale (DEIS, Chapter 3). While I respect the Makah's request for a traditional whale hunting ceremony, I strongly feel that it does not fit in with the modern day's concern for protecting marine mammals. Simply put, the only reason that the Makah want to hunt whale is to take back some of their cultural heritage. There are a lot of traditions in my family's past that are no longer legal or relevant in modern day society. The Makah do not need to hunt whale for food like they would if they lived in the Arctic. The Makah Tribe is looking for a way to get a sense of strength and pride back, but killing a whale is not going to be the magic solution that cures the modern day problems the tribe experiences. How about leading traditional whale watching tours that promote the history and culture of the Makah? Or having a whale hunting ceremony that is symbolic rather than real? Or finding other creative ways to get in touch with their culture that does not involve the killing of a whale? Maybe the money that would be spent on the whale hunt could be spent on human services? I urge you to go with Alternative 1, the no-action alternative. P.S. I NOAA has presented a very well-rounded Draft Environmental Impact Statement for Proposed Authorization of the Makah Whale Hunt.
e_FacilityMaint_08-4-08.pdf	When my mother was in elementary she used to get punished for speaking our Makah language. The teacher would beat the back of her hand when she spoke our language, if she didn't cry then they would turn her hand over and beat the other side until she spoke English. This happened in the 1940's and 50's, not very long ago. Many people (including the government) have been attempting to take away our culture. It was illegal to speak our language, sing our songs, do our dances, to have Indian parties, or even gatherings for many decades. As it is now, our language is "NEARLY EXTINCT". We have no one who speaks our language fluently, all of our elders who knew it has passed away. Some of our language is recorded but much of it has been lost forever! How much more will we lose?

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	Even though the Ninth Circuit Court ruled the way that they did, there are some important facts which should be mentioned. Also, there are important facts of our treaty that aren't mentioned. Unless I overlooked it, I haven't seen Article. VI. of the US Constitution mentioned is the DEIS. Art. VI. US Constitution states "and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound.....". The US Constitution should not be optional and neither is our treaty! Alternative 6 is my choice, and this is why: 1. The judges in the Ninth Circuit Court were wrong, they never followed the US Constitution and our Makah Treaty. a. They never supported Article. VI. of the US Constitution. Even though congress is the supreme law of the land, Art. VI should have applied. There is no conservation issue for the gray whales. The gray whale population has reached the Optimal Sustainable Population (OSP). The Environmental Assessment should have sufficed. Not even the Endangered Species Act (ESA) applies in this argument. Why? Because they are not on the Endangered Species List, they are not even on the Threatened Species List! Article. VI. should be at least mentioned in the DEIS. How can they ignore Article VI of the US Constitution? b. The MMPA, Section 14 states that this will in no way alter or change any agreements or treaties with the Native Americans and the US. This is mentioned in there for a reason. Our treaty was signed in 1855, the MMPA was enacted in 1972. More importantly, a treaty is a government to government agreement just like an agreement with any other country. They are not optional. c. The agreement between our two governments (Makah & US) were very specific. In our gov't to gov't treaty agreement it stated very clearly that we gave up 275,000 acres to reserve the right to hunt whales. This to is not mentioned in the DEIS. The judges of the 9th Circuit Court never upheld our treaty. What would happen if we (the Makah's) tried to change the treaty? Our treaty is not up for public comment! 2. Native Americans established our version of the National Environmental Protection Act, NEPA, thousands of years ago. We called it culture. For salmon fishing, our culture was to take the first fish prepare a meal and bring it to the ocean or river for an offering of a good return the following season. The second fish was to be given to an elder who is not in your family. The third is to be given to an elder in your family. The fourth is to be eaten and rest will be given away or cured for winter supplies. My grandmother taught me to be a conservationist with everything I gather, whether it is herbs or anything else. If it were a conservation issue I am positive that we would abide by ESA, NEPA, MMPA, or nature. 3. I am a Makah Whaler and the religious part of the training is one of the most important part of being a whaler. I can't go into any details but we prayed many times a day. We thanked the creator for everything that we had, we even prayed for the anti-whalers. The EIS is a government document but the religious aspect needs to be considered, because whaling has everything to to with the approval of the creator to take home one of the world's most wonderful creatures. Our culture is based upon living by natures laws and the creator. Our society has been here longer than the mid-evil days, the Romans, and even King Tut himself. How many other societies can say this? Makah's have been here since the days of the Pagan's, the ones who built Stone Henge. If you want to know what life was like during the days of the Egyptians just ask a Native American, we still have the same culture and almost the same way of life. Neah Bay, Wa. Established 2992 BC. The Makah's stopped whaling more than 10 years before it was illegal to hunt whales. We are not the ones who brought them close to extinction. Some say that we just want to slaughter the whales. They forget about the term "slaughter houses". This is where steaks and

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	hamburgers come from. Some religions don't allow consumption of pork, some revere the cow as a sacred animal. Some countries have penalties for abusing cows, even punishable by death, yet they still don't impose their belief upon us. The creator gave us our language, he gave us this land to live on, our culture is the way he showed us how to take care of it.
e_Feral_08-13-08.pdf	Harvard geneticist Richard Lewontin has said: "That is the one point which I think all evolutionists are agreed upon, that it is virtually impossible to do a better job than an organism is doing in its own environment."[1] We strongly agree. Friends of Animals (FoA), a nonprofit animal-advocacy organization, opposes hunting. Thus, as the National Marine Fisheries Service (NMFS) addresses the proposed authorization of the Makah Whale Hunt, FoA supports only Alternative 1 of the Draft Environmental Impact Statement. Alternative 1 is "the No-action Alternative, wherein NMFS would not authorize a Makah gray whale hunt."[2] Friends of Animals urges the NMFS to choose the No-action Alternative to the draft environmental impact statement (DEIS) concerning the Makah Indian tribe's February 2005 request to resume whale hunting, and this can be done on the basis of several factors: • Populations of eastern North Pacific gray whales (Eschrichtius robustus), which migrate from Arctic waters to the Gulf of California in Mexico, have grown substantially, and they have been removed from the Endangered Species List. Because the whales have been delisted, the reasoning goes, the species' health would not be harmed by the hunt. Yet a report in the Proceedings of the National Academy of Sciences asserts that "large numbers of gray whales have recently been discovered suffering from starvation."[3] The article goes on to say that "starving whales may be suffering reduced food supply from changing climate conditions in their Arctic feeding grounds." This possibility parallels 2006 reports last year of major climate shifts in the Arctic ecosystems in which gray whales feed.[4] Given how little scientists yet know about the climate shift phenomenon, the impact of killing these whales is unpredictable. • The Makah request to resume whale killing did not take such climate shift factors into account; it pre-dated them. • The Makah request to resume whale hunting would ostensibly be for "ceremonial and subsistence purposes" only. The Makah tradition of killing whales was suspended in the 1920s, when hunting drove gray whales to near-extinction. The Makah Nation itself agreed to halt the killing. • Over the intervening decades (before the Makah were again permitted to kill a whale in 1999), the tribe has subsisted without killing whales. New traditions, therefore, have taken the place of former ones. • If the Makah tribe wishes to maintain a cultural connection with gray whales, it could do so through rituals, ceremonies, crafts, and drama, rather than by killing. Promotion of carefully planned ecotourism in the form of whale watching could also provide the Makah with a viable source of income and an opportunity for the tribe members to maintain their cultural connection with whales. It would also spare the lives of the whales. • Whale kills are a source of international controversy. Permitting the Makah to hunt eastern North Pacific gray whales would only encourage other aboriginal peoples and countries to hunt whales, legally or not. The Makah request must be seen in the context of the international effort to protect whales internationally. For the above-described reasons, and based on the above factors, Friends of Animals respectfully requests that the National Marine Fisheries Service choose Alternative 1. [1] Quoted by Richard Dawkins in The God Delusion (Boston: Houghton Mifflin, 2006), at 191. [2] Makah Whale Hunt EIS (May 2008). [3] Proceedings of the National Academy of Sciences (10 Sep. 2007).

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	[4] Release titled “Gray whales a fraction of historic levels, genetic research says “(10 Sep. 2007), issued be Steve Palumbi, Harold A. Miller Professor at Stanford; contact addresssupplied: spalumbi@stanford.edu.
e_Finley_05-11-08.pdf	I am opposed to permitting whale hunting for any purpose including "cultural preservation." The species of this entire planet are under assault by human activity, with unprecedented impact. No one can safely predict, in the current tumultuous period of global changes, what constitutes "healthy" populations. The polar bears were considered "healthy". Furthermore, there is growing evidence that whales are among the earth's most intelligent and sensitive species. I lived among the Yup'ik people for six years. They found effective ways to continue their traditions, preserving what was important to their identity, without returning to practices that endangered populations or awoke global political strife. It can be done. The United States has led the way in helping whales. Approval will only undermine the pressure against Japanese and Norwegian whaling.
e_Fisher_06-02-08.pdf	I am a resident of Mill Creek, WA, and a student at the UW. My opinion is that the Makah should be allowed to have their traditional whaling rights. I feel that enough has been taken from all American Indians over the past several centuries, and this is the least we could do for them. If there are concerns about preserving the whaling species, then perhaps a certain limit can be set each year for how many can be hunted. However, I don't feel we have the right to take this tradition away from the Makah.
e_Flohr_05-10-08.pdf	This is very simple, and there should be no argument here. What is it the U. S. Government, and others don't understand about a treaty? The treaty allows whale hunting. So let the Makah Nation hunt their whales. The way the government of the U. S. is treating our native peoples is an at home example of why this country is so disliked around the world. Worse yet, we can't, or won't honor the terms of a valid treaty.
e_Forman_06-24-08.pdf	Thank you for allowing me, a resident of Washington state, to voice my opinion regarding whale hunting by the Makah tribe. I tried to make sense of your very well done website, but suppose my argument against the hunt is based on emotion and logic more than science. I do appreciate the cultural tradition of the Makahs, but have to question their need to brutally harpoon and kill a gray whale to continue their heritage. Though whaling was an important part of the tribe's past, as the sacrificed marine mammal provided much needed nutrition and resources, no one would argue that the hunt is needed in modern day to fullfil those ancient needs. Instead, it is purely ceremonial today. The story and custom of this ancient ritual could be passed on to the younger members of the tribe in many other ways that would not involve taking the life of a gray whale. Festivals, story-telling, dance, and ceremonial rituals help nati ve Americans keep their past alive in many aspects. The tradition of whaling could be included. I strongly URGE YOU TO DENY the Makah's request for gray whale hunting. As human inhabitants of this planet, we must all evolve in our thinking as we learn and grow. The Makahs can and should be part of this human evolution, while remembering their past traditions in ceremony ritual only. Again, thank you for allowing me to express my views.
e_Frangogiannis_05-29-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifl es under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As

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	you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's pro posal to legally kill whales under their treaty.
e_Fredrickson_05-15-08.pdf	I am writing to voice my opinion on the Makah tribe's hope to resume hunting whales. If the tribe would harvest the whale ... eat the meat, process the blubber, etc. ... then the hunt might make some sense. But to just kill it, and let it sink to the bottom of the sea, is uncivilized.
e_Friedman_05-29-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the ani[end]
e_Gackowska_05-29-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The 'reinforcement of tribal identity' does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor 'treaty rights' to massacre whales. There is no rationale for 'ceremonial and subsistence' whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Gandara_06-21-08.pdf	Regardless of whether or not people agree with the act of "hunting whales" is not the issue. The Makah tribe has a treaty to hunt and that is reason enough. Over time far too many treaties and promises have been broken and bended. It is time to honor an agreement regardless of the unexpected outcome. In all honestly, Native Americans have not been the main reason behind the dwindling whale numbers. "The might is not always right!"
e_Garbato_05-30-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive — including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as

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e_Gardner_05-27-08.pdf	I would like to outline several factors as to why the Makah should not be permitted to take whales. 1.) Ecotourism: Grey Whales are a key element to ecotourism industries in Mexico, USA, and Canada. Whale watching is more profitable than whaling, making millions of dollars each year in direct revenue. It should also be taken into consideration that peoples working in these fields form attachments to certain animals. Animosity toward the Makah tribe can only increase if one of the animals who has a name, is considered a friend, etc is killed. As the whales migrate up the coast, there is now way to tell which groups have formed an attachment to which animals, and no way to tell the whales apart. Ecotourism and whaling cannot exist side by side. 2.) Population Estimates: New studies show that the Grey Whale population has not recovered to historical levels as previously thought. Recent studies of grey whale DNA indicates that between 78,500 and 117,700 grey whales existed before commercial whaling decimated the population. Current population estimates puts grey whales at 22,000, which based on the recent DNA study, puts them at one-third to one fifth of their historical levels, which is far from a recovered population. This estimate differs from the IWC estimates but should be considered far more accurate, as it uses genetic testing, current technology, and scientific knowledge. 3.) Food supply: Scientists studying the Grey Whale population have observed changes in the whales' appearance and behaviour, including emaciation, later migration, not migrating as far North, and a decrease in calf production. These are thought to be due to a reduction in food supply in the Bering Sea caused by global warming. Environmental stressors will only increase with the impact of global warming, and the Grey Whale population will suffer as a result. 4.) Public Opinion: The world is largely against whaling. Killing sentient beings has no place in a conservation-oriented society. 5.) Non-Traditional Methods: On the 1999 hunt, the Makah did not use traditional methods to kill the whale they took. If they truly wanted to hunt whales in a traditional manner, they would use all traditional methods. One can only conclude, as they are not using traditional methods to hunt, that there must be another reason. “The International Whaling Commission permits four cartridges in whaling: the and the .460 Weatherby Magnum, .50 BMG, and the .577 Tyrannosaur, which the Makah fired in the 1999 hunt.” 6.) Ceremonial and Subsistence Use: The Makah were permitted to take whales for ceremonial and subsistence use. Why, then, were the Makah considering selling whale meat for profit? As outlined above, whale watching is far more profitable than whaling. Selling the meat should be considered unacceptable, as it conflicts with the original purpose of killing whales for ceremonial and subsistence purposes. “The key to Makah economic prosperity had always been the whale trade, and the Tribal Council began to realize that a return to this trade may just prove to be the economic savior that the tribe had been waiting for. Japanese market prices pegged the value of one gray whale at anywhere from $500,000 to 1 million dollars, and since the Makah were the only Americans with a legal treaty right to hunt gray whales, they would have no competition for these dollars. According to a April 1995 memo written by Mike Tillman, Deputy Commissioner of the U.S. Delegation on Whaling Issues, both Japan and Norway had contacted the Makah about buying any potential whale meat, and the Makah were contemplating building a processing plant.” This directly conflicts with the IWC's definition of subsistence use:

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	"(1)The personal consumption of whale products for food, fuel, shelter, clothing, tools, or transportation by participants in the whale harvest. (2) The barter, trade, or sharing of whale products in their harvested form with relatives of the participants in the harvest, with others in the local community or with persons in locations other than the local community with whom local residents share familial, social, cultural, or economic ties. A generalized currency is involved in this barter and tra[d]e, but the predominant portion of the products from each whale are ordinarily directly consumed or utilized in their harvested form within the local community; (3) The making and selling of handicraft articles from whale products, when the whale is harvested for the purposes defined in (1) and (2) above." 7.) Contaminants: Whale are particularly suceptible to contamination from toxins in the marine environment. High levels of PCBs, DDT, dioxin, pesticides, and heavy metals such as mercury make whale meat unsafe for human consumption. Humans should be prevented from consuming this meat at all costs. "PCBs can cause neurotoxicity (nerve damage), reproductive and developmental disorders, immune system suppression, liver damage, skin irritation, and endocrine disruption. DDT exposure is associated with certain cancer risks and neurological and reproductive disorders. Dioxins, among the most toxic substances known, can cause cancer, metabolic dysfunction, and immune system disorders. Methylmercury consumption can cause neurological and developmental problems. The contaminants are often highly concentrated in blubber because they are lipophilic, meaning they bond easily and even preferentially to fat." In the past, whales were hunted for food by the Makah, Grey Whales for oil. There is no need to hunt whales for food in the 21st century, and there is also no need in particular for Grey Whales to be hunted for oil (as the Makah hunted them for in the past), as there are other sources of oil available that do not conflict with tourism industries and public opinion. Thank you for your consideration of my input into this matter.
e_GaryAnnieK_05-12-08.pdf	Give them what they ask for or give them the land back with interest.
e_Gilje_05-09-08.pdf	I would like to comment on the above topic. According to the research done recently by Stanford University and University of Washington: Gray Whales A Fraction Of Historic Levels, Genetic Research Shows ScienceDaily (Sep. 11, 2007) — Gray whales in the Pacific Ocean, long thought to have fully recovered from whaling, were once three to five times as plentiful as they are now, according to this article. The number of Grey Whales is already declining possibly due to environmental/changing climate effects. Opening up the hunting on them will only decrease the population even more. The study also suggests that lowered numbers of gray whales no longer play their normal role in ocean ecology. A reduced population of gray whales has likely exerted large changes in Pacific ocean ecosystems. Unique among whales, the gray bulldozes the oceans, digging troughs through the sea floor for food. In the process, they resuspend ocean sediments bringing food to the surface. Other species may feel the loss of whales as well, for example the feeding plumes of gray whales are foraging grounds for Arctic seabirds.
e_Gill_05-11-08.pdf	I have very strong beliefs about whaling, and I can't help it. This earth belongs to us all, to live in and dwell in harmony. How could a person ever even conceive of killing something as amazing and gorgeous as a whale? It is unacceptable and evil. It has been proven over and over in the animal kingdom that animals are extremely intelligent, with strong feelings. Whales are no exception. This killing stuff is so dark ages. Can't we live in love and appreciation of the beauties of the earth? Killing an innocent animal is no different than killing

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	another human being. It is all the same evil instinct, an instinct that should be so foreign to a humane person. There should be no killing at all, not of whales, seals, wolves, bison, deer, ducks, turkeys, etc. etc. etc. As far as the Makah's go, I am one eighth Nez Perce. I absolutely love my Indian heritage. But, I feel like we all are, in the United States here, under one law. Again, we're not living in the dark ages. All those living in the States should be under exactly the same laws as everyone else. There is no other way. And ALL laws should be based on morality and humanity. Man does not own or control the animals of this earth. Whales don't belong to man. Who the heck do we think we are, anyway? It is not man's place to decide on the issues of life. It is man's place to protect life. NO KILLING. NOT ONE WHALE KILLED! NOT NOW, NOT EVER!!! NO KILLING OF OUR BELOVED AND MAGNIFICENT WHALES!!!!!!!!!!!!!!!!!!!!!!!!
e_Ginsburg_06-05-08.pdf	We are strongly against permitting this whale hunt. It is unnecessary and barbaric.
e_Giovane_05-11-08.pdf	I would like to give my support to allowing the Makah Tribe to continue hunting whales for subsistence and ceremonial purposes as guaranteed in the treaty between the Tribe and the US Government. Personally, I believe that whales, and all cetaceans, are unique and worthy of protection. There should be a world-wide ban on all commercial harvesting of them. However, in the case of the Makah's right to continue the whale hunt, I am strongly in favor of allowing this practice to continue based on the following. As an archeology student, I had the opportunity to work at the Ozette site in 1975 and 1976. Just prior to my working there, House 1 had been excavated. In that house, many artifacts attributed to whaling were uncovered. One such artifact, the whale saddle (which, from what I understand, was meant never to be seen by the uninitiated), was the first bit of physical evidence showing me how important whaling was to the Makah. This was more than just hunting to "put meat on the table", so to speak. Whaling was a sacred and vital part of the entire community. At Ozette, gray whales pass by on their seasonal migrations to and from the Baja Peninsula---I remember seeing them myself and could imagine, in pre-contact times, what it must have been like to go out on a hunt. We saw the evidence that all parts of the whale were utilized by the Makah, with whalebone being used for clubs and for incorporation into the drainage systems between the houses. I learned that to successfully complete a hunt, all the members of the crew, their wives and family had to undergo many rituals beforehand to insure success. To guarantee that the harpooned whale would be easily returned to the village (and not swim out to sea), the whale was considered as an honored guest which would sacrifice itself for the good of the community—again much ritual was involved in this important aspect. With the voluntary ban on whaling, members of the Tribe kept these traditions alive in the hopes that someday, the hunts could resume. As a nonnative, my understanding of all of this is very limited, but I can see how spiritually significant whaling is to the Makah people. I also had the privilege of being a teacher at Neah Bay for over twenty years. The students that I taught were (and still are) like family to me. In the past, the school had a negative impact on the kids---I heard stories of students being punished for speaking Makah in school. I'm happy to know that today, many of the teachers are Makah, and that Makah language and culture are promoted school-wide. Growing up in Neah Bay presents many challenges for the kids. Our educational system is very future-oriented. We tell the kids, learn this stuff and some day it will help you go to college or you will use it in your job. However, to go off to college, kids must leave their family and community, and risk being forced to make a choice between two different cultures. As for work, unemployment is extremely high on the west end of the Olympic Peninsula. The time-honored occupations of fishing and working in the woods are still some of the only ways to make a living. Many kids feel that there is nothing to do, and so it's easy to fall into the trap of drugs and alcohol. However, the strong cultural ties—like the canoe club and Tribal Journeys—provide a way

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	to travel another course. I was teaching the year “the whale” was taken after whaling was allowed to resume. It was an amazing experience! Our principal, Bill Pearl, released the students to go down to the beach in the village to await its coming in. He didn’t want any of them to miss this historic event—and they would have gone anyhow. We went ourselves after school was over, to see the beach covered in people, in the rain, singing the whale ashore. This was a momentous day, not only for the Makah, but for all indigenous people in the country—a country that has historically broken its treaties with native peoples. Here, the treaty was honored and the Makah could once again experience this integral part of their culture—of “who they are”. We also witnessed the threats and abuse the Makah people had to take from the Sea Sheppard and others. Most nonnatives just don’t have a clue as to how important cultural traditions are to native people. In truth, the U.S. has become the “melting pot” it wanted to be, and so many of us have lost our own language, culture, and traditions. Hunting whale to the Makah is so much more than just hunting or fishing. It is the thread to generations past, it is what gives the Makah their unique identity. And because of this, I would like to strongly give my support to its continuation.
e_Goldbach_05-28-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Goodrich_08-08-08.pdf	First off, in the recent display of "Hunting" by the Makah Whaling Team we have learned that not only do they not know how to Whale but that they will impose significant danger to all those on land and in the water while they are exercising their "Hunting" practices. Secondly, we feel that due to Starvation, other Preditors, and Global Warming, the Whale Population has declined. There is not an adequate Scientific Count, Effect, and Solution in the Proposed DEIS. Thirdly, We are extremely concerned that if the Makah are allowed to "Hunt", it will result in the return of Whaling Worldwide. There have been violations already by the Japanese and other Nations. We would like to Propose that until Research and Global Warming effects are studied with the Declining Whale Populations and the Return of WorldWide Whaling is taken under consideration, this Proposed DEIS not be allowed. Instead, we would like to see the Grey Whale be reinlisted on the Endangered Species list.
e_Gramza_06-13-08.pdf	I am writing to express my opposition to allowing the Makah to continue their hunting of whales. I have vast respect for the cultural traditions of native peoples. But I would like to argue that inflicting so much pain and suffering on these intelligent, sensitive, and threatened animals cannot be justified. Cultural tradition should never be an excuse to abuse and torture an animal to death. Most reasonable people agree that certain "traditions" such as slavery, denying women the right to vote, etc. were rightfully abolished and should never be revisited. We should have enough respect for the Makah to realize that they can revitalize their cultural tradtions without killing whales. This hunt has global implications for whale populations. The scientific community is in agreement that whale

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	populations have been severely diminished around the world by hunting. The Makah hunt provides an open door for commerical whalers in Japan, Norway, Iceland and Russia, who seek to use this "cultural" justification as just another loophole to kill whales for their own finacial gain. Thank you for considering my comments.
e_Green_06-07-08.pdf	There is an inherent conflict of interest in the mandate of NOAA and NMFS, namely the protection and stewardship of natural "resources" (including sentient creatures), while also promoting the commercial nature of exploiting those resources. It's very telling that these agencies (including your own) fall under the U.S. Department of Commerce. One might wonder why the decision to allow the hunting and killing of gray whales would fall to the commerce department... only in America. I mention this not to belittle your position, but rather to encourage you to leave these important decisions to those who should rightfully have some authority over these matters. Magistrate Arnold has ruled the Makah's killing of gray whales illegal and disallowed any defense based on religious, cultural, or traditional bases. The hunt is illegal, period. The quibbling over how many whales you plan to allow them to kill per year is proclaiming that you will knowingly let the Makah violate federal law. Let NOAA and NMFS stick with their "commerce" mandate and leave the fate of these sentient sea creatures to impartial arbiters. If the Makah are truly hunting for "subsistence" and "cultural" reasons, and not commercial, then NOAA and NMFS have no jurisdiction and no authority to overrule a federal magistrate.
e_Gregoric_05-15-08.pdf	I believe the United States needs to honor their commitments. Native peoples have long been the butt of too many jokes played on them by capitalists. The treaty of 1855 should be upheld in much the way our Supreme Court chooses to interpret our Constitution. To the letter strictly 19th century: No motor launches. No exploding harpoons. No rifles. No chainsaws. You want to feel like a Buck you pay the dues!
e_Griffith_06-03-08.pdf	Whale hunting is part of the Makah religion, federal interference in whale hunting is as unAmerican in this case as it would be in the case of the free practice of religion by any other group of Americans. In the context of the Makah culture this is not only unfair, and unreasonable, but amounts to religiously motivated tyranny. The killing of 20 whales over a five year span will not harm the overall population levels. There is no practical reason why the Makah should not be able to resume hunting. Federal interference in Makah hunting rights, and by extension their culture and religion is the wrong thing. Stop doing the wrong thing, and start doing the right thing. Honor the original treaty. Get off the Makah's backs.
e_Guyette_05-12-08.pdf	This opinion concerns the 2008 MakahDEIS. The Makah Tribe has an 1885 Treaty Right to hunt grey whales. Since the population of whales is no longer endangered, I believe strongly that these treaty rights should be upheld and the Makah people able to practice their tradition. There are important cultural reasons associated with this tradition also. Thank you for the chance to comment.
e_Handa_06-08-08.pdf	In January 1995 I visited Guerrero Negro bay in Baja California specifically to see grey whales up close. While they are large animals I don't see any difference between whales any other large mammal like cattle, elk or moose. The bottom line is the Makah have a treaty right to harvest these whales. They are whalers. Through the treaty with the U.S. government their ancestors wanted to ensure their descendents would be able to continue their way of life. The Makah voluntarily stopped hunting the whales long ago due to over harvest by other peoples. Now that the whales have recovered in number the Makah deserve and have a legal right to resume whaling through a limited harvest of a few whales a year. The United States must honor the treaty rights of the Makah.
e_Harper_08-14-08.pdf	I am writing as a private citizen interested in preserving the population of whales in the Northwest. We have a small group of whales who are at home in these waters, and they should not be harassed in any way. Chasing them, hunting them, shooting at them should all be considered harassment. The Makah are no longer a tribe making a subsistence living from whaling and gathering. They are a modern people, living in the modern world, and do not need to kill whales. While I appreciate their desire to keep some of their ancient customs alive, this is not an appropriate way to do that. The whale that was illegally killed at Neah Bay was chased with modern boats, shot at

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	with high-powered weapons, harpooned and left to suffer and die over a period of many hours. This was inexcusable, by any people, at any time. Please do not give in to "political correctness" and make a decision that endangers our precious fellow earth dwellers so that a group of people can make a point -- we all get the point already, and more suffering in the world is only going to make the Makahs disliked.
e_Heath_05-27-08.pdf	Please do not allow this whale hunt to occur. I think that it is very cruel and unneccessary. Many of the gray whales are very tame off the Washington coast and it just is not a fair playing field as the whales are not afraid of humans. I don't see why the Makah people feel that this is the only way to satisfy their traditions. There are many more interesting and productive ways to do it such as learning their language or cooking traditional food or working on their beautiful arts and crafts . There is too much killing and bad things going on in the world so please don't let this happen to these beautiful and trusting animals. We should take care of them and not destroy them intentionally.
e_Hebert_05-10-08.pdf	There is no need, at this point in time, for the Makah tribe to continue to whale. The destruction of life simply for the purpose of embracing one's culture is obscene. This is not a concept Americans, both indigenous and naturalized, should be embracing. It must be asked if cultural heritage has the right to trump a categorical imperative? Or do outmoded traditions, found to be inconsistent with modern knowledge and morality, deserve to be abandoned and outlawed? Culture is not a static concept. Societies are fluid, forming and reforming their constructs as times and conditions change. This is simple cultural evolution. There have been many traditions throughout history and in all societies that have been lauded as moral and culturally just only to be considered, by current standards, to be morally repugnant and deserving of reformation through civil rights and/or animal rights laws. Makah whaling is no different than many outmoded traditions that deserve to be given a place in history rather than an active role in current society. To do otherwise threatens protective sanctions that have been established for ecological/environmental benefits worldwide. While the Makah tribe deserves to retain their cultural identity, they must also be willing to evolve that culture to embrace the changing world in which they live. Reenactment of the Makah's cultural traditions through non-violent methods is entirely obtainable and should be mandated. To do anything other than outlaw the Makah killing of whales is to set an alarming precedent of moral and political hypocrisy of which our country should be ashamed.
e_Herner_05-12-08.pdf	I want to send you my comments. I ask you to not allow these people to be allowed to hunt the whales. This should not be aloowed and you must stop this insanity. Isn't there eough of killing of whales out there? Do not allow this. Look forward on hearing from you.
e_Herner_05-16-08.pdf	I ask you to stop the Whal's Life and Agonizing death of whales. You must stop this by the so called natives who think they have a right to kill whales. STOP THIS INSANITY
e_Herner_05-28-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling

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e_Herron_06-04-08.pdf	I have read the DEIS on Makah Whale hunting requests. I have the following concerns: Page 2 of the Overview of the Makah Tribes Waiver Request bullet 5 states: Provide detailed photographic monitoring etc..... Question: Who will provide this photographic monitoring and what non-tribal source will ensure the accuracy of such reporting? Same page bullet 9 states: Restrict the use of whale products to local consumption. Question: What processes or audits are in place to ensure that these products are not exported and if members of the Makah tribe are found to have engaged in export, what penalties are proposed, and what external corresponding processes exist. Same page last bullet states: .....requiring Tribal enforcement of Tribal regulations. Observation: The Makah Tribe was unable to prosecute or seat a jury against their members that hunted illegally last year, that hunt resulted in the mutilation of a whale. In my view their wavier should be suspended for any violation given that their own Council is unable and or un-willing to prosecute obvious transgressions against the law. The rationalization that was reported in the press was that all of the actors were related to some one in the tribe so therefore there was a conflict of interest with respect to seating a jury. With Respect to the Document Titled Application For a waiver etc submitted by the Makah Tribe I have the following questions and or comments. Page-iv- The definition of the word "Strike". Specifically " A harpoon blow counts as a strike if the harpoon is embedded in the whale" Comment: For what length of time. If a whale is struck and after two or three hours the harpoon becomes dislodged is it then not a strike? What is to prevent the "hunters"(sic) from removing the harpoon in favor of a different animal or to avoid having the strike count? Page 3 paragraph two: "during the 1999 hunt these methods resulted in a time to death of approximately eight minutes". Comment: I would call your attention to last year's illegal; hunt when the whale suffered for hours and died, the method of capture was, to my knowledge as described in this paragraph. Clearly this is an erroneous and disingenuous statement. Page 4 paragraph two states: "tribal monitoring....etc. Comment: Who monitors the Tribe, where is the independent oversight of this process and what is the documented audit plan. Page 4 last paragraph "Tribal Enforcement...etc Comment: I re-iterate the point above the Tribe was unable to enforce or punish their own commensurate with the serious nature of the offenses associated with the illegal hunt last year. Furthermore, the Seattle Times has frequently documented the Makah Tribes inability to enforce basic law. They indicated in an Article this year that 50% of the houses on the reservation are contaminated with Meth-Amphetamine residue. In that same article the Tribe was bemoaning the absence of Law Enforcement Resources from the BIA. So whom is going to enforce these new regulations, clearly there is not process capability and or resources for adequate oversight of the incremental burden of tribal whaling.

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	In addition to this throughout the application the Makah indicate that there will be training and certification for the whalers. If basic needs, ie health safety etc are not being met by the current economic situation, where are the resources going to come from for this certification and training process. Furthermore where is the curriculum and associated processes? Page 5,section A regarding: cultural renaissance and provide significant nutritional resources. Comment: Cultural renaissance. The primary premise throughout this application is that the Tribe will receive social benefit and relief by participating in these efforts. What measurements are in place and or anticipated to measure this? It seems to me that if the Government were to grant this waiver to the Marine Mammals Act, then there should be evidence of the benefit. Examples are numerous, unemployment rate, domestic violence, reduction of vandalism to no-tribal vehicles visiting Point of the Arches, High School graduation etc. But there are no measurements. I can accept since I am a white man, it is difficult if not impossible to understand the cultural significance, however, demonstrable success would not only further the continuation of whaling but generate tangible goodwill in the non-tribal community. Their own statistics indicate that only 39% of the Tribe participated in the ceremonial rights of the last kill, indicating that this renaissance theory is questionable at best. Comment: Significant nutritional benefit. The Tribes own document indicates that 30% of the tribe cooked the meat of the whale killed in 2005. How are the Makah Tribe going to consume five whales worth of meat a year. In my view the rest will be wasted for the non-measured esoteric "cultural renaissance". Clearly five animals a year is an excessive harvest irrespective of the overall whale population. With respect to the NOAA EIS, Chapter 2 "Alternatives" section 2-8 lines 2-3. Comment: Grenades? How can this even be considered from a human safety standpoint, not to mention incremental impact adjacent aquatic and avian life. Given the emotional nature of this issue, and the fact that previous hunts have been attended by individuals protesting and or attempting to disrupt the hunt arming one side with explosives seems to me to be inane. Summary: I oppose this Waiver. However if it must go on, then the points I have raised above need to be thought through and implemented. The Makah request lacks depth, relative to specific process oversight, funding for incremental programs and third party validation of compliance with the Waiver. The reality is that the Makah cannot afford, manage or enforce their own Tribal concerns today, and our unable to even mete out punishment to recognized violators of the law, ie rogue whalers. What changes our going to occur all of a sudden to provide them the resources and process capability to fulfill their responsibilities under this application. The fact is nothing will, it will be business as usual in the pursuit of "cultural renaissance" at the expense of fifty whales.
e_Higdon_05-29-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers.

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	Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Hnilo_07-07-08.pdf	We vehemently oppose allowing the Makah to hunt whales. It is inhumane, immoral, cruel and illegal. Do the Tribes now get to pick and choose which laws they want to adhere to? It's bad enough that they are allowed to practice gill netting and selling dangerous fireworks. What's next? Allowing this slaughter to proceed in the name of preserving cultural heritage is disingenuous at best. The survival of the tribe's culture is not dependent on killing whales. Many human ancestors committed what would now be considered atrocities as part of "heritage," including blood sacrifice, cannabilism, slavery, etc. Is this allowed to continue? Of course not - it's inhumane, immoral, cruel and illegal. Further, if this really had to do with preserving a primitive part of their heritage, then one would think that the use of modern boats and weaponry would not be included in the proposal. In light of the changes in the ocean's temperature and chemical composition due to global warming, we don't know what the effect on whale populations might be. Allowing hunting of them is irresponsible.
e_Hobson_05-14-08.pdf	I whole heartedly support the 1855 Treaty of Neah Bay regarding Makah tribe whaling.
e_Hockenbury_05-10-08.pdf	I wish to hereby weigh-in on the proposal to allow the Makah Indian Nation to hunt Pacific gray whales off the Washington coast, in the affirmative. This is a proposal that has been too long in coming, and it is time that this Indian Nation be allowed to pursue it's 1855 treaty rights to whaling. It is my opinion that the tribe could take at least 5 whales per year without harm to the whale population, other wildlife species and the general environment. As reported by Brian Gorman, a fisheries service spokesman in Seattle, the total population of gray whales, "...seems to be stable... it is considered a healthy population." Considering the positive economic, ceremonial, subsistence and cultural impacts to the tribe, I recommend that approval for resumed hunting of the gray whale by the Makah Indian Nation be approved as soon as possible in respect of the 1855 Treaty with the Makahs.
e_Hoenig_06-23-08.pdf	Several comments and statements embedded in e-mail
e_Hogg_05-12-08.pdf	Marine mammals are not special from land mammals. We eat land mammals, so no problem eating a marine mammal. I hope you get the right to hunt the food you want to.
e_Hogue_05-12-08.pdf	I think they should be allowed to hunt the whales as long as they use the technologies employed by their ancestors. They should be able to keep their traditional right as long as they use their traditional methods. It doesn't seem that would be too much to ask. After all the right was granted based on assumptions regarding their capabilities at the time, wasn't it? No internal combustion engines, no fancy exploding harpoons, no spotting from aircraft or modern vessels. No radios, radar or sonar. Perhaps they should be allowed modern life jackets, but short of that everything they use in every aspect of the hunt should be "traditional".
e_House_06-01-08.pdf	I'm conflicted over this b/c American Indians have been so unfairly treated since day one, however, whales have been treated the same way. No more killing whales. Not for any reason whatsoever. Stop destroying the environment.
e_Houston_08-14-08.pdf	I am strongly opposed to the proposal of restoring the hunting of gray whales to the Makeh Tribe for the reason of "tradition". Times change, traditions change, and people change with them or become obsolete. There is great concern for the preservation of a rare and fragile species which should out weight any considerations of a folk "tradition."

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e_Hoyer_05-12-08.pdf	I am not in favor of allowing whale hunts. This is the 21st century a treaty composed and finalized in the late 1800's could not have foreseen the advancements of civilization in the following 100 years. The original intent of the treaty must have been to assist in the nourishment, native tools or other implements that comprised the Indians normal living conditions. Today Indians are subsidized with cash and tax-free incentives to assist with their "needs". Killing of the whales is not a "necessatity", they wish to kill the whale in order to uphold a provision in an "out dated" treaty (which should be revised in accord with advancements in civilization). If they need food, go to the grocery. This reflects the same treaty scenarios regarding fishing, the original treaties were initiated when Indians used spears and the bow/arrow to catch fish and not modern monofilament nets. If the Indians wish to exercise the rights granted by treaties over a 100 years old then they should use the same technologies that where used during the time the treaties where initiated. Do the original treaties also require the government to provide blankets, cooking utensils, crop seeds and such? If so why aren't the tribes calling for these "rights"? Why do they always take aim at some unique provision? When all they need to live is in the local grocery or departmental store. If anything the Indians need more motivation to integrate into society, which is what my grandparents did when they came to this country in the 1904. Maybe a proposal to give up some of the Federal funding, which is provided to help subsidize "daily living" in lieu of modern hunting privilidges.
e_Huelsbeck_06-03-08.pdf	I believe the requested waiver of the MMPA should be granted. None of the proposed alternatives will harm the population of gray whales. It is my understanding that the population is now so high that it may be necessary to implement management efforts for the benefit of the whales. If the Makah resume practicing their right to hunt whales, it is unlikely to have a negative impact on whales elsewhere in the world. If anyone proposing to hunt whales, conducts the kind of review represented by the document under review, we can be certain that populations will not be threatened. The US Government can not impose regulatory authority outside of the United States, but the world can use the Makah gray whale case as a standard. If the request is not granted, it will harm the US Government's relationship with the Makah Tribe and probably with most, if not all other Native American Tribes in the United States, and with First Nation Peoples around the world. Most non-Native Americans do not realize how important treaties and treaty rights are to Native Americans. I personally support the least restrictive alternative. There is nothing in the Makah Treaty that imposes the kinds of restrictions proposed in the Makah Tribe's request. Having said that, I am not about to second guess the wisdom of tribal leaders in structuring their request. The Makah Tribe's request for a waiver of the MMPA should be approved.
e_Ionta_06-21-08.pdf	Please don't allow the makah to hunt whales. I respect the traditions of the makah, but not to the point where they hunt whales.
e_Isbell_06-07-08.pdf	Please accept our comments regarding the Makah Indian Tribe's appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the defenseless animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, provided the offenders violated no laws the following year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. In the 21st Century, no human being needs whale meat to survive - including the Makah Tribe, who until recently, mercifully left the gray whale unmolested for over 70 years. The "reinforcement of tribal identity" does not justify blatant slaughter. Whales are typically harpooned or blasted with high-

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	powered rifles under the guise of "cultural" whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please do not honor "treaty rights" to massacre whales. We urge you to deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Jackson_05-26-08.pdf	I have read the DEIS and my conclusion has come about because of these problems: A recent "hunting bungle" occurred when a group decided to kill a whale without permission. The whale, wounded, was left to die a miserable death. What assurances are in place to make certain that the whales killed are not either pregnant or nursing? If the tribe itself is not going to oversee or share in the cost of a whale kill, then the danger to allow families to kill will likely result in more bungles. "Warriors" heading out to kill have limited skills for harpooning and would wind up with motor boats and modern methods of eliminating whales, all disruptive and cruel. Would open up whaling to other indigenous groups and countries anxious to harvest whales for commercial purposes. Most of the $140 million tourist dollars come from festivals in Port Angeles and Sequim. Nobody tours in Neah Bay except to visit the local museum. There's not much to see there. Whale watching events should be totally banned anywhere. Such events are strictly for the dollar and are not at all concerned with the disruption they cause to marine wildlife. No clear cut economic benefit to tribe. As with other indigenous peoples, rituals can be carried out in "mock" events on the reservation. The only people interested in watching whales being slaughtered would be those bearing witness to a wanton, cruel act. The average tourist wouldn't get near such an event. $2.1 million dollars to secure the area by US Coast Guard and other law enforcements agencies is way too much money to spend with taxpayer money. There are many more pressing uses for those dollars than killing whales. The Makahs have to find another way to subsist other than whale kills. If whale hunts are allowed, nothing but bad can come of it! I VOTE ABSOLUTELY NO WHALE HUNTING!
e_Jackson_07-03-08.pdf	We are long time residents of Clallam County living at Freshwater Bay about 55 miles E. of Neah Bay. We have become acquainted with the Makah Nation and are deeply moved by their culture, traditions and strong character. We have studied the meaning of whaling to the Makah and it is a very sacred tradition which is part of the spiritual history of the tribe. One has but to marvel at the artifacts uncovered at Ozette to appreciate the richness of the whaling tradition. The Makah have petitioned for recognition of their treaty rights; NOT to engage in commercial exploitation of these great mammals. This petition should be granted; the 9th circuit court is wrong in this instance. We urge you to support the Makah. Thank you.
e_Jacobs_05-12-08.pdf	Thanks for the opportunity to comment on the Makah's right to resume whaling. The Makah Tribe signed a treaty with the United States in the 1800's which, like all treaties ratified by the Congress, is the supreme law of the land. There is no doubt that it is valid, and the language is very clear. They are a legitimate sovereign Indian Nation. They were coerced to give up rights to occupy hundreds of thousands of acres of ancestral lands . They reserved the right to whale. In the 1920's, after white whaling interests decimated the gray whale population, the Makahs halted whaling to help preserve the species. They did no whaling for 70 years so that the resource could recover.

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	In 1974 the gray whales had recovered enough so that they were removed from the Endangered Species list. The population was then estimated at around 20,000. By 1992 the population was at 24,000. In 1999, the tribe was “allocated” the “right” to take up to five whales per year. Although they were under no treaty requirement to comply, or even to ask for approval, they elected to cooperate with Federal authorities. As a sovereign Indian Nation, they were guaranteed the right to whale. Still they elected to cooperate and to quietly wait for an OK to do what was guaranteed in the Treaty. After waiting for years, a single whale was taken, out of a population of 24,000. It was shared with all interested tribal members, as was the case for hundreds of years. The skeleton was cleaned and then mounted in the Tribal Heritage Center, as a permanent display of their historical tie to the whale. What could possibly be wrong about that? The United States Government has no jurisdiction to require this sovereign Nation to comply with such regulations. Neither the Marine Mammal Protection Act nor Fisheries Service regulations can be legally enforced. For confirmation, please refer to United States vs State of Washington and the decision rendered by Judge George Boldt. Follow the Treaty language, backed up by Federal Court cases, and stop attempting to prevent this Tribe from exercising their guaranteed treaty rights.
e_Jamison_05-15-08.pdf	Japan whales, USA can afford to honor the treaty they made with the Makahs. US government over the history of treaties has broken too many already, NO MORE. Our founding fathers never broke their word to the Native Americans. We need to honor this treaty, it is about freedom of religion because you can't seperate their culture from their religion.
e_Jansen_06-02-08.pdf	I ask you to resume limited hunting of eastern north Pacific gray whales in the coastal portion of the Tribe's usual and accustomed fishing grounds, off the coast of Washington State, for ceremonial and subsistence purposes. The DEIS, prepared under the National Environmental Policy Act (NEPA), considers various alternatives to the tribe's proposed action.
e_Jay_05-19-08.pdf	Under no circumstances should the Makah ever be allowed to kill another whale. They have proved to be liars, dishonorable, opprobrious and disgusting. My comments are: NO INDIGENOUS WHALING FOR ANY GROUP! This is a new era, a new paradigm where the land, the waters and the beings who live on and in them have been killed to the brink of extinction and some right on over it. ENOUGH! Someone has to have the balls to say NO MORE! There is no reason to save a stupid, mean and cruel culture. Cultures must grow with the times. That gray whale slaughtered by Wayne Johnson languished in agony for 6 hours chocking on it's own blood. This MUST not ever happen again. I have asked before and I am asking again that all whaling be stopped by this country at once. There is no reason to continue brutalizing whales. Culture is the least of it. All living must live and change, including indigenous tribes. Especially indigenous tribes. I am opposed to the opprobrious and unconscionable behavior of both the tribes and the US government that permits the killing of whales. NO WHALING! We've just spent 8 years under an idiot with no morals or brain. It's time someone stood up and made a positive difference. It's time. Do it. Be the one with the balls. Save the whales.
e_Jeb_05-10-08.pdf	I would like to make my statement of support for the Makah and their right to a Grey Whale Hunt. I am an eco-minded person, but I also agree with a sovereign nation being able to make good on a promise the United States has made to them. It is our duty to uphold the document and treaty we agreed to in 1855.
e_Jenkins_05-12-08.pdf	As much as I love to see the whales out on the ocean and they should be protected, I don't think a few taken by the Makah tribe will make that much difference. They do in fact have treaty rights to do so but have been very aware of public opinion and restrained from continuing their cultural hunts. And as long as its not for any commercial profits, I think they should be allowed to take their whales

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	according to tribal customs. I also think it was very unfortunate that a few tribe members took things into their own hands recently. They should suffer the worse fate the tribe can give them and lose their rights to ever hunt again.
e_Jenkins_08-14-08.pdf	I am in support of the Makah Nation's treaty rights to hunt the whales. We have lived on the Olympic Peninsula for 36 years. In no way, do we feel we can tell the Makah's how to live their lives. Treaty after treaty has been broken by our government. The destruction of the sea life and forests has not been at the hands of the Makahs or the S'Kallam tribes. No one but the Makahs should decide what is or is not part of their culture. I am tired of the effort to rule over the Makahs but the anitwhalers. Please side with the rights of the Makahs. This is a chance for justice for the tribe and an effort to realize their history of preserving the earth and the seas.
e_Johnson_08-14-08.pdf	No more killing of whales by the Makahs or anyone else.
e_Johnston_05-23-08.pdf	I'm all for the Makah Tribe having pride in its existence, but there are other ways to accomplish this than by pointlessly killing gray whales. Some people don't seem to get it that their heritage, their old cultural patterns are not viable in the world of today. Ceremonial practices to celebrate the history of the Makah could certainly be developed without actually killing animals FOR NO REASON! And what is this about "how many could be struck but not killed"? That is really ugly. The whales are protected by law; keep them protected and do not allow hunting just for the fun of killing something.
e_Jones_05-12-08.pdf	You are being lied to by the Indian Industry. 1. As of the Indian Citizenship Act of 1924, there are no more "Indians" within the original meaning of the U.S. Constitution 2. The U.S. Constitution makes for no provision for the national government to 'make or continue to observe' treaties with "Indians" as there are no more Indians only U.S. citizens with Indian ancestry. In short, there is no Constitutional legitimacy for acceptance of an 1855 treaty as any justification for permitting U.S. Citizens with Indian ancestry to hunt whales! This whole thing is pure rubbish!
e_Jordan_05-29-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Jordan_05-31-08.pdf	Please add my voice to all those who wish to thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. Please consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all

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	charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty. Thank you for your time and consideration.
e_Judge_05-28-08.pdf	I am strongly opposed to the unnecessary killing of whales. Please don't allow the killing of such strong creatures.
e_Karen_08-14-08.pdf	Attached is my response to the subject document. Subject line named the attachment as “DEIS Makah.doc” [It is now saved it in the T-Drive folder named “_Attachments for Whale Comments.” The name Karen Haarstick was added to the letter name for easier identification.]
e_Kastel_06-12-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Kelly_05-10-08.pdf	There aren't enough whales left in the world. It is time to end this "hunt".
e_Kennedy_08-04-08.pdf	Pertaining to the public comment or vote on the proposal of the Makah Tribe to kill gray whales in the north Pacific, I am very appalled that this is even on the table. The Gray Whale of the Northwest is low in numbers, and with all of the old and new environmental threats (i.e. offshore drilling, and warming of the oceans), I believe to allow this kill would be very irresponsible! My opinion is a resounding NO! Please consider that traditions are not a good reason for killing gray whales at this time, as we do not know what effects the warming of the Earth will have upon species even in the next 10 years. The best scientists we have do say that if the human population doesn't change its carbon habits drastically and immediately, over 50% of all plant and animal life will be gone from this planet in 30 years time. We also know the ecosystem will be destroyed.
e_Kenoyer_06-21-08.pdf	After all of the many bad things my white-man forefathers have done to the American Indian, one of the VERY LEAST things we can do is respect and adhere to the treaties we signed with them. The Makahs should be allowed to hunt whale as often as they want to, whenever they want to, right up to the point where the whale numbers are endangered. It's part of their heritage. They were hunting

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	whale long before my forefathers got here and stole so many of their lands and rights away from them. We should remove the bureacracy and make it easy for them to hunt whale.
e_Kerchner_05-09-08.pdf	Before the white man came to this land the indians were hunting whales for subsistance purposes. they did not over hunt, they took only what they could use/eat. Then the white man came and slaughtered the whales just like he slaughtered the buffalo. He used part of the whale only (oil), the rest he threw away. The whale population was decimated, not by the indians, but by the whites. Now the whites act contrite and want to prevent anyone from hunting whales because of the white man's imprudence. The law should prevent any whites from hunting whales, because whites are callous people, as history shows. But the indians had revered the whale and took only what they needed, and they should be allowed to hunt the whale as long as this is so.
e_Kinch_08-12-08.pdf	No one could doubt indigenous americans have the right to interact with remaining indigenous plants and creatures without interference from other races/cultures...What is to be hoped for is a transformation in the way all humans interact with cetaceans...Hopeful is the fact that a 'calling in of the whales' by tribal elders earlier this year saw, "Moms and babies in the surf,spy hopping and playing in the waves off LaPush.." The Penninsula Dailey News ran an article, "Gray Whale Malnutrition Linked To Ocean Warming.." on it's front page over a year ago.. Newstrack_Science reported: 'Skinny Gray Whales Swim Pacific Coast' citing altered food supplies.. An anecdotal story in the San Francisco Chronicle described the actions of a humpback whale arduously rescued from a tangle of crab traps..."When she was free, ... she swam in what seemed like joyous circles.. she then came back to each and every diver, one at a time, and nudged them....some said it was the most incredibly beautiful experience of their lives."......While eating whale meat/blubber was essential in the time of native forefathers, it is no longer likely safe to eat..(See articles on 'stinky whales', PCB's, and toxin levels in marine mammel tissue..) Perhaps the Tribal Council could ask their ancestors whether it is time to reconnect with their ocean brothers in a new and sacred manner ..... it would seem they could use our help and understanding.
e_Klein_06-17-08.pdf	I'm concerned over the possibility of allowing more whales to be hunted by the Makah tribe. To be honest, I struggled as to whether to write this because I do respect the fact that these are indigenous people who were doing these rituals long before I or probably the majority of people writing you were here and I understand this is part of their cultural and spiritual belief system. I very much respect their beliefs and feel I even understand why they feel it is so important to conduct these whale hunts. Yet, I still feel strongly that whales need to be protected. Since the tribe's livelihood or need for sustenance is not directly tied to having these whale hunts, I can't sit by quietly while whales are hunted and killed in what appears to be tortuous ways. Please consider stopping this practice.
e_Kobak_06-27-08.pdf	I am married to a Native American man. Both of us feel very strongly that in this day of declining fisheries and habitat, a hunt of 5 whales per year is an outrage. If the tribe could use all of the whale as in years past, then yes, we would agree with the hunts. But very few members partake of that whale. It is sold commercially for a large sum of money. It may be cultural to hunt that whale but it is against all traditional values of the past to sell that whale for profit. Greed has hit the Makah and is reflected by these for-profit hunts. Please, in this age of dwindling marine life and habitat, do not allow these hunts. 1 whale only, with no allowable sale of any part, may be acceptable. Even that is to much in this day and age. Everyone has to adjust to a changing world, not just the Makah. Please do not let this go forward.
e_Koehl_05-29-08.pdf	First, I would like to thank you for allowing me the opportunity to make my concerns hard in regards to the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I have recently learned that

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	the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I most respectfully ask you to PLEASE consider this fact: In the 21st Century, no human being needs to consume whale meat to survive; including the Makah Tribe, who until recently, have left the gray whale to live in peace for over 70 years. The "reinforcement of tribal identity" certainly does not justify murderous slaughter. Whales are most often harpooned or blasted with high-powered rifles under the guise of "cultural" whaling. Holidays are "observed" with whaling contests and races. No celebration can ethically justify animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine agonizing hours of suffering. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you are aware, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. Please, it is unacceptable for the Neah Bay whale and others who will suffer an agonizing and prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please, I urge you to deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Koppelman_06-08-08.pdf	I do not support allowing the hunting of whales by any citizen of the United States, including members of the Makah tribe. Article IV of the 1855 Treaty with the Makah states “The right of taking fish and of whaling or sealing at usual and accustomed grounds and stations is further secured to said Indians in common with all citizens of the United States… (emphasis added).” Currently, the citizens of the United States do not have a right to hunt whales. If there is no right of the citizens of the United States to hunt whales, there is no right in common that exists for the Makah to have. Stated in another way, if there is no right in the first place, there is no right for the Makah to hold in common. Supporters of Makah whale hunting seem to have conveniently ignored the language of the treaty that preserves the right in common. But words in treaties and legal documents can not be ignored for convenience; every word has to be read and accorded its full weight. While the federal agencies have stated that the September 2007 illegal hunt by five members of the tribe have no bearing on the current DEIS, I believe that the five men’s actions can not be ignored. Four of the five men involved in the illegal hunt were involved in the sanctioned 1999 whale hunt. Thus, these men were the tribe’s chosen representatives to conduct the sanctioned hunt. Yet in September 2007, there is no evidence that what the five men did was ever a serious whale hunt. It was grown men with high-powered weapons out to take uncoordinated shots at whales. Moreover, whaling involves more that the gun crew; it involves others to tow the slaughtered whale to shore to “harvest” the meat. There is no evidence that there was any support crew or boats involved. Without those, how can these five men argue that this was a serious hunt to harvest food for sustenance? Rather, that hunt, conducted primarily by men chosen by the tribe as its premier hunters, was a cruel and thoughtless thrill ride that involved shooting at defenseless animals. While supporters of whale hunting argue that the gray whale populations are healthy, some scientists argue that gray whale populations are actually declining. Researchers at Sanford University and the University of Washington are concerned that gray whales that they have observed in recent years are starving. With the general unhealthiness of the world’s oceans, this is not surprising. Further, scientists now estimate that gray whales once numbered 96,000 in the North Pacific Ocean. Although there has not been an official count of the population since 2001, the gray whale population may be as low as 15,000, or as high as 22,000. A population of 20,000 is hardly a resurgent population of an animal that once numbered close to 100,000. Until the National Marine Fisheries Services does conduct a scientific count of the gray whale population, unfounded estimates should not be used to sanction killing an animal that has been on the endangered species list. Indeed, it may be that a count will indicate that the gray whale should be back on the endangered species list.

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	Finally, hunting is not about swiftly and efficiently killing every animal. As the illegal hunt shows, hunting involves the wounding and prolonged death of many animals, more than just the one that is successfully killed and brought to shore. Since experienced tribal hunters in September could not manage to swiftly kill a whale even though they struck it four times with a harpoon and shot it at least 16 times with a high caliber rifle, we can expect that many whales will be wounded and die painful, prolonged deaths at the hands of Makah whalers. If the Makah do not hunt whales, they do not have to lose their whaling culture. Rather, they can take positive actions to protect whales, and promote the wonder and value of live whales, rather than killing them. The Makah could take the forefront in promoting the restoration of large and healthy whale populations, and promote compassionate treatment of marine animals by all peoples. Drawing on their traditional knowledge and culture of whaling, tempered with the modern sensibilities of valuing animals' lives and American's anti-whaling values, the Makah could advance their whale culture into the 21st century.
e_Kraus_08-15-08.pdf	Killing whales cannot be justified for cultural ceremonies. Traditions need to be updated and changed to the current times. To allow whale hunting to resume will just open the door for whale hunting nations to increase their whale hunting activities and assume that whales are plentiful. There may indeed be a reason for subsistence hunting in some parts of the world but certainly not for the Makah in Washington.
e_KristiH_05-30-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Kristy_05-12-08.pdf	The stupid Makah should NOT be allowed to ILLEGALLY kill highly intelligent whales! Do not allow the damned Makah to ILLEGALLY kill amazing whales! That would be barbaric! The numerousness of a species should NOT be "THE" indiction, on whether or not to ILLEGALLY kill an animal! Period. And they have not ILLEGALLY killed spectacular whales in a really, really long time! There is no "need" for them to do so now! Their "culture" does NOT ILLEGALLY include special whales now!
e_Kuba_06-27-08.pdf	I strongly oppose the murder of Whales by the Makah Tribe or any tribe or individual. The Makah most evolve and learn to leave in harmony and peace with all of earth's creatures. Not doing so is barbaric and an act of savagery. Tradition most not reconsile any one to atrocities! NO WHALE MURDERS! NO ANIMAL TERRORISTS! Defend Animals Coalition Alfredo Kuba, President 650-965-8705 defendanimals@gmail.com "All beings are ends; no creatures are means. All beings have not equal rights, neither have all men; but all have rights. The Life Process is the End-not man, nor any other animal temporarily privileged to weave a world's philosophy. Non-human beings were not made for human beings any more than human beings were made for non-human beings. A universe is, indeed, to be

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	pitied whose dominating inhabitants are so unconscious and so ethically embryonic that they make life a commodity, mercy a disease, and systematic massacre a pastime and profession." Professor J. Howard Moore CLICK THESE LINKS FOR THE ENVIRONMENT, ANIMALS AND HEALTH. http://www.nytimes.com/2008/01/27/weekinreview/27bittman.html?_r=1&em&ex=1201842000&en=7490d3223d2f16cb&ei=5087%0A&oref=slogin www.GoVeg.com www.meat.org www.pcrm.org http://www.petfoodshop.com/
e_Kundu_06-03-08.pdf	This correspondence represents the collective opinion of the eight-member board of advisors for Project SeaWolf Coastal Protection, a federally-registered non-profit environmental advocacy group based in Marysville, Washington. Specifically, the opinions cited represent the views of Michael Kundu, Robert McLaughlin, Robert Wood, Patricia Woodfin, Wanzellia Clark, Anna Tyo, Brandy Knight, and Arun Kundu-Thomson. We are in collective opposition to NMFS/NOAA issuing the Makah Tribe permission to resume a limited hunting of eastern north Pacific gray whales in the coastal portion of the Tribe's usual and accustomed fishing grounds, off the coast of Washington State, for ceremonial and subsistence purposes. Our opposition, includes a deep concern that accurate population assessments, and changes, in eastern north Pacific gray whale stocks has not recently been reviewed; opinions recently expressed by researchers indicate that the estimated population may be lower than previously suggested, and that starvation may be impeding the recovery of the Pacific Gray whale population [reference at http://environment.newscientist.com/channel/earth/dn12623?DCMP=NLC-nletter&nsref=dn12623]; moreover, changes in coastal climatic conditions and oceanic quality have not been factored into the determination of a 'viable' harvest number established for this proposed hunt. On a more pragmatic basis, we are also deeply concerned that the Makah Tribe have shown an inability to maintain control over the individual actions of tribal members, While we understand thatch this unauthorized hunt is a separate matter to this EIS, we maintain that the subsequent response taken by the Makah Tribe to address the action of the hunt has a very significant impact on the potential outcome of any decision made by NMFS/NOAA on this EIS. Members of the Makah Tribe who undertook this unauthorized hunt, and who continue to express their intention to hunt gray whales despite any restrictive action of either tribal or federal governments, have not been adequately controlled by the Makah Tribal government. We are very concerned that, when unlawful or illegal hunts do occur outside of both tribal and federal protocols, the tribe has shown an official 'unwillingness' to hold their members accountable for the legal violations of marine conservation rules, federal/tribal agreements, and the federal Marine Mammal Protection Act - based on recent violations by the renegade whaling crew headed by Wayne Johnson, there can be no assurances that the tribe will hold accountable, nor legally enforce against, any member of the tribe who violates the co-operative laws governing wildlife conservation or marine mammal protection in the waters off Neah Bay and the Olympic National Park Marine Sanctuary. In the absence of any 'good faith' willingness for the tribe to sanction or adequately penalize any of their own membership who have violated both tribal and federal laws, any agreement between NMFS/NOAA and the Makah Nation cannot be considered binding nor viable. Given the nature of our concerns, it is our hope that the NMFS/NOAA will select the 'No Action' course of response in this EIS: selection of this response will result in the Makah Tribe being held to the same level of accountability (in reference to marine mammal conservation laws) that other US citizens are subject to. Since the conservation of cetaceans and other marine mammals must be conducted on a level playing field by all residents and constituents of any given region, we believe that this action would be the appropriate one to pursue. Thank you for the opportunity to present our perspectives.
e_Kusy_05-10-08.pdf	While I do not have the time or inclination to read the entire DEIS, I am aware of the issues surrounding Makah whaling and treaty rights. I was on the Makah reservation the day after the whale was "illegally" taken in September 07. I have seen their land and their waters, their people and their community. I fully support any plan that allows the Makah to undertake whaling insofar as it helps to strengthen and preserve their way of life. I could go on and on about why I feel this way, but you will likely get a lot of feedback so I'll

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	keep it short. Animals and living things have rights, yes, but cultures also have rights, and one of those rights should be not to be judged by an external culture, especially one so destructive as the larger North American industrial consumer culture.
e_Kusy_06-03-08.pdf	I am writing simply to let you know that I support the rights of the Makah to whale in their traditional waters around Neah Bay as outlined in their treaty rights. In my opinion, as the constitution says that treaties are the supreme law of the land, this matter should be closed as soon as possible and not up for further discussion. That the Makah have been sensitive to the environmental impact of whaling since the 1920's is a kind gesture on their part, but not one that they were legally obligated to make. They have been patient in waiting for this issue to resolve itself. Furthermore, there has been too much cultural imperialism in this matter. Let the Makah decide what is right for their tribe while mainstream Americans can decide what is right for our "tribe."
e_Lambert_06-02-08.pdf	The world's whale populations continue to decline from various causes. It is no longer appropriate for the Makah nation to hunt whales merely as a continuation of tribal practices. Whales of all species are very long lived, and every one is now necessary to ensure adequate reproduction and sustainability of the species. The argument that the tribe needs this ritual whale hunting to maintain its tribal identity is not justified; there are much better ways for the tribe to do this that do not jeopardize the future of our whale populations. I strongly urge that whale hunting by the Makahs be prohibited.
e_Langley_05-28-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's appeal to hunt Pacific gray whales in coastal waters off of Washington State. I am writing to ask that you deny their request to kill these whales. No human being needs whale meat to survive, the Makah Nation has long existed without the hunting of whales, and "culture" never justifies the horribly cruel slaughter of animals. When the Makah whalers illegally shot and harpooned a gray whale in 2007, the animal took nine hours to expire. The Makah Nation predictably dismissed all charges. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Laws must change to reflect social norms and increased understanding of other animals. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Larsen_05-13-08.pdf	I honestly don't really think that whale hunting is really needed, it's not like we're living in Japan or China - not like they should be doing it either but they're eating it...Gosh, I just think that people need to leave the animals well enough alone.
e_Larsen_06-03-08.pdf	My comment: it's very simple, hunting to survive is honorable. Killing for sport or pleasure or even for cultural identity is wrong. To find a way to move your culture in to the future is simple too. But it is you who must make that choice, and soon; now that the issue is raised. May you chose well, for your children's sake. May you lead us all down the honorable path.
e_Larson_08-14-08.pdf	Attached please find official comments regarding the 2008 Makah DEIS from the Whale Watch Operators Association Northwest. Please let me know if you have any trouble opening the attached Word document. Thank you for the opportunity to provide our thoughts on this matter. [Attached Letter named "2008 Makah DEIS WWOANW.doc"]
e_Lelievre_05-10-08.pdf	Any possible more I can do, I will, but not at the sacrifice of living, warm blooded whales. The Makah tribe has existed a long time without killing whales, what they've already done was done illegally. Might this not open a series, where, based on precedent acts, will induce many other "tribes" illegal or not, to even kill the whales and harvest for profit. Plus, and mainly, it is immoral. Please consider this as a vote against the Makah Tribe and all they represent.
e_Leshner_07-10-08.pdf	I attended the June meeting in Seattle. I am not a member of any particular group--just an interested citizen. Initially, I was supportive of the Makah's taking of a whale but I realized that that was because I just didn't know the facts of the proposal. I thought they might be

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	proposing to take one whale but not annually just to maintain that part of their culture and to exercise their treaty right. When I read that the proposal was for 20 whales during a 5-year period, my support vanished. I know that you are studying the impact of this proposal on the number of whale population as well as other affected species and how it affects the environment of the ocean. Then there is the Whaling Commission and the global need to protect whale populations. It is complicated, I know. I do not think that the Makah's proposal is a good one. Thank you for your consideration.
e_Lewis_05-10-08.pdf	It is my opinion that killing whales for any reason should not occur. I would like to remind everyone that the one whale that was killed in 1999 was not taken care of appropriately, was not respected by the majority of the Makah tribe, and most of it was left on the beach to rot under a tarp. Does anyone else remember, in 1999, as it was butchered and served, how many of the tribe spit it out and complained about it's flavor and texture? I would hope that both nations, the Makah and The United States of America have come a long ways together since 1855. We now have women's rights, slavery is outlawed, there are child labor laws, and it's time to quit hunting and killing the tame, gentle whales.
e_Lindley_05-18-08.pdf	It is a travesty that a beautiful animal went through hours of hell by the Makah whalers. It is time that whaling is stopped completely and that this nightmare is not repeated again. Justice was not done by the prosecution and 5 Makah criminals got away with a slap on their hands for slaughtering a feeling beautiful being. At times I am ashamed to be a HUMAN being when I hear of atrocities that we inflict on other living beings. No more Makah whaling.
e_Linger_05-10-08.pdf	You have got to be kidding me. How can you allow a Tribe to hunt whales when they are protected under the Marine Mammal Protection Act? Isn't America supposed to be a civilised society? Or, are we like Japan where we can do whatever we please and skirt around the laws in spite of the reasons that they were put in place? This sort of skirting of the laws really makes me ambarrassed to be an American. No whaling should be allowed in American waters.
e_Livingston_08-03-08.pdf	This treaty must be renegotiated. The "ceremony" of butchering beautiful creatures already in danger of extinction was tragic 150 years ago. Today it is indefensible. Depending on whale hunts for subsistence is not a 2008 reality....it's an excuse that hunters of many innocent creatures use to justify their sick form of entertainment.
e_Lorin_05-29-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Lowe_06-03-08.pdf	I have spent time in San Ignacio Lagoon with Grey Whales. The mothers lay under our small boat while their baby came up to us and allowed us to stroke her. To allow the slaughter of ANY whales in this day and age is criminal, no matter what the rational. So-called

COMMENTER	COMMENT
	"tradition" is never an excuse to continue this cruel and unnecessary activity. Let us stop this nonsense now, and get on with the business of protecting all sea creatures, before its too late.
e_Lowery_05-10-08.pdf	I fully support the Makah Tribe's cultural and treaty right to take whales. Such action can not possibly have a significant impact on the gray whale population. As a society, we surely can find more important and useful things to do with our resources than to continue the wrangling over such a trivial matter.
e_LPC_06-14-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Lyons_07-18-08.pdf	We live in a world that is slowly adopting Indian perspective toward the earth and wildlife. Please adhere to your sacred regard to animals. You do not need to kill whales to survive in this world. The whales are so lovely and already so many destroyed. Please give them a chance to live, raise their young and enjoy their ocean home. You have many great cultural beliefs that are healthy and considerate--killing whales is not one of them.
e_Macdougall_05-20-08.pdf	Let the Makah make their own decisions regarding whaling. They are given this right by treaty, and this right should not be interfered with. 1) It's a treaty right 2) Whales, while wonderful, are also part of the cycle of life: they get eaten by other animals, and also by us (and besides, it's a treaty right anyway) 3) It's a treaty right. I'm not sure why we are even being asked our opinion, as it is the right of the Makah to hunt whale, but as it seems this DEIS has a legal impact, for some non-treaty reason, my opinion is that the Makah, as a sovereign nation, be allowed to choose their own path regarding whaling.
e_Mar_05-11-08.pdf	I am writing to request an extension on Makah comment period so we may have time to review it .We would like a 90-120 day extension to allow us to review this thoroughly. As it has taken 3 years to complete, we find it very difficult to read with any less time since we also hold other jobs & businesses. Thanking you in advance of this consideration!
e_Margie_05-10-08.pdf	I think the whales should be allowed to live. It feel that the tribal member will kill for sport. than for ceremonial and subsistence purposes

COMMENTER	COMMENT
e_Markus_05-22-08.pdf	I attended a meeting in Los Angeles at the Autry museum several years ago, when JJ was still at Seaworld. The Makah presented their pitiful justification for resuming whaling, and their preparations for it. They got their permit, JJ was released, and later that summer, the Makah killed a whale that "just came up to them". Have you considered who that whale may have been? I have.
e_Marques_06-03-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Marshall_08-15-08.pdf	Thanks to you for extending the deadline to comment on the request of the Makah tribe to add to their collection of whale bones at the Museum in Neah Bay. Sorry, but in a world that is over-populated with many people wanting to take away from that which enriches us all, I have to express my strong opposition to allowing this “tradition” to continue. If allowed, this hunt sets a dangerous precedent to re-define the meaning of “subsistence” hunting. It weakens our protests against the Japanese hunts for “scientific” purposes. It accelerates the loss of a treasure that cannot be replaced. We are running out of time to stand up for those creatures that cannot speak for themselves. (Although in the case of the whales, they speak, we simply do no yet have the knowledge to understand.) Please put my voice in amongst those who find this hunt unnecessary and cruel. The children in school in Port Townsend near me were brought whale meat to sample from that last hunt. Many of their parents found that objectionable and I agree with them. That animal should still be swimming free with the rest of his kin. They are whales, not cows!
e_Mathwizb_05-12-08.pdf	I think we should stay out of the Makah whaling issue, because of a few reasons: 1) We've already agreed to let them hunt. We already told them, 'yeah, it's okay to hunt', and now we're telling them they can't? that's just wrong. 2) The whale population is stable, and these hunters are killing twenty whales over five years. That is a ridculously small number to be concerned about. These Indians had been doing this for so many years before we colonized this area, and it did not kill off the whales. It keeping the natural order of balance essentially. It's not like they're killing hundreds like the Japanese are. That's what we need to be concerned about. Hunts that kill hundreds of whales. We need to get our priorities straight! thank you for taking the time to hear comments, and i hope you will take them all into consideration and make the choice that is best for our enviroment.
e_Maurer_06-23-08.pdf	I endorse the no-action response to the Makah Indian tribe’s request to hunt gray whales.
e_McAlister_05-28-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe,

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	who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_McCaffrey_05-11-08.pdf	Please DO NOT approve a continuation of whale hunting. What we now know of the complex social structure of whales and their language and intelligence should nullify a treaty that was signed in the 1800's. Plus, the Makah no longer need whales to survive. Does it make sense to approve a Makah treaty to murder whales while the rest of the population goes on whale watching excursions to marvel at the magnificence of them?
e_McCann_06-07-08.pdf	Please accept our comments regarding the Makah Indian Tribe's appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the defenseless animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, provided the offenders violated no laws the following year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. In the 21st Century, no human being needs whale meat to survive - including the Makah Tribe, who until recently, mercifully left the gray whale unmolested for over 70 years. The "reinforcement of tribal identity" does not justify blatant slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of "cultural" whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please do not honor "treaty rights" to massacre whales. We urge you to deny the Makah Nation's proposal to legally kill whales under their treaty.
e_McClanahan_05-11-08.pdf	There is no reason to not allow the Makah Tribe to participate in their treaty right of whale hunting. Their treaty right trumps congressional law. And, the grey whale is no longer endangered and are being hunted by the Japanese and Russians right now. The Makah have stated that they only want a few whales a year. Do not penalize the whole tribe for the stupid and bone-headed actions of a few of their tribe who lost patience and went maverick. They are paying the price. Give the Makah a 10% mortality rate and allow them to harvest up to 5 whales with a minimum of 1 per year when the whale's migrations bring them close to the Makah Reservation controlled areas.
e_McDowell_05-11-08.pdf	Please enlighten me regarding your intention to kill grey whales. In this time and place in history do you really need any part of this animal to eat or wear? What could you possibly need that you do not get abundantly right now? You can say it is your right, but the pride of the original American is that WE have always respected the earth and Our ancestors hunted for survival only. These whales and much of our marine life is in serious threat of extinction. This intended SPORT killing is a shameful thing. Twisted pride has entered into it and my Sioux heritage gives me license to say SHAME ON YOU. I was not there to speak out for the Bison, but there are many of us ready to take a strong stand for the protection of whale now! Please convince me I am wrong on this. There is much at stake here.

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e_McEnerney_08-11-08.pdf	Knowing that my voice is miniscule in the process of either granting or not a waiver for the Makah to kill resident whales in a marine mammal sanctuary, my intention is to speak for those who cannot. Also, I wish to express the killing of the 1st whale and the rogue whaling sent me to a place of grief beyond description. Surely it is not in my heart to deny anyone's rights as long as those rights don't infringe upon my rights to live happily in the beautiful Pacific Northwest. When the Makah Treaty was set forth, people needed to kill the whales for subsistance. Were the treaty writer's visionaries?Probably not. Did they know whales were actually sentient beings, capable of feelings? Probably not. Did they know that man would destroy the earth in his quest to have whatever he wanted? Probably not. Did they know man would come to a place where, eventually, he learned he needed to respect an d protect his environment or it would be gone forever? Probably not. But that time is here now. The Makah tribe's contention they need whales to subsist doesn't make sense - they have subsisted quite nicely without whale whale meat for decades. To kill a beautiful creature for a ceremony is not conducive to one's consideration of one's environment either. Who knows what the future will be? Will offshore drilling begin and furthur destroy the whales habitat? We can only circumspect what the future holds but we are NOW visionaries and it is time protect what little we haven't already destroyed. It is in your hands now, to make the decision that this country doesn't grant a waiver to take away protection to that which is protected in a marine sanctuary, no matter what! "What is man without the beasts? If all the beasts were gone, man would die from great loneliness of spirit. For whatever happens to the beasts, soon happens to man. All things are connected." Chief Seattle
e_McFarlane_05-09-08.pdf	I just wanted to voice my opinion on the Makah Tribes' request for whaling permits. If the Makah wants to whale because of Tribal tradition, because their forefathers did, I believe they should whale as their forefathers did - sans high powered rifles or technologically superior archery equipment - they should use the spears and bows/arrows of their forefathers as well. Then, tradition would be followed. I don't believe they can have it both ways - 2008 technology in a "traditional hunt". If they want to carry on Tribal traditions, as they do their dance, celebrations and customs, the whale hunt should be based on the original traditions as well. I also believe they should be limited to one whale per season. It's my understanding that when they got their whale in 2003(?), a lot of it went to waste because no one wanted, or could use, the blubber and other parts of the whale. One whale should be sufficient to teach the younger members of the Makah Tribe the traditions of their elders.
e_McGuane_05-09-08.pdf	Why are special interest still allowed to violate laws that everyone else has to live by here? If anyone else asked for this right, it wouldn't even be considered! When is someone in the courts going to stand up to the outdated treaties, and finally cancel them. So much for 'all men are created equal'. Please do not let these issues even become a topic of conversation
e_McKay_06-08-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive — including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as

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e_McManus_05-10-08.pdf	I fully support the Makah Indian tribes request for continued limited treaty-right hunting of eastern North Pacific gray whales (Eschrichtius robustus) and I believe the proposal submitted by the Makah Indian Tribe is the alternative action that should be selected by NOAA Fisheries Northwest Region for the following reasons: 1. The right of whaling at usual and accustomed grounds is a Makah tradition secured by the 1855 Treaty of Neah Bay. 2. Makah whaling dates back at least 1,500 years, well before the eastern North Pacific gray whale population was severely reduced by commercial whaling. 3. With international and national legal protections, the eastern North Pacific gray whale distinct population segment has now recovered.
e_McManus_06-30-08.pdf	I understand that public opinion is now being taken into consideration with regard to the decision to allow the Makah to resume the whale hunt. I understand the Makah are trying to regain some of the old ways, but the old days are gone and maybe it's time for spiritualness without the suffering and killing of such an important member of our planet that was pushed to the brink of extinction not long ago. In my opinion, the fact that the last hunt was done illegally and in such a flagrantly inhumane manner should also factor in on this important decision. Why would permission for something this unnecessary now be granted when rules and guidelines were so boldly disrespected before? Please give very serious consideration to the opinion and request from those of us who GREATLY oppose giving permission. In addition to the importance of this decision to our local area, we have a tremendous responsibility to the rest of the world in setting such a precidence that will have far reaching effects, surely resulting in negative impact to the newly recovering whale population. Consideration of this fact should not be overlooked.
e_McMullin_05-10-08.pdf	Is the purpose of hunting whales to supply food? It seems that there are many other sources of nutrition, including protein, which do not require the killing of whales. But we're told that the whale hunt is really about cultural tradition and religion, and that the hunting of whales fulfills some spiritual need. I'm sure that the Aztec priest felt spiritually fulfilled when they tore the hearts out of living captives to offer to their gods. I doubt that the persons sacrificed universally thought of the procedure as spiritually edifying. For the whale hunters there may be a deep spiritual significance. But for the non-volunteering whale it is probably a matter of terror and inhumanely painful death. Is it really necessary that probably intelligent and certainly innocent creatures be subected to that? Must they suffer and die for the sake of the religious traditions of other beings? Necessary killing of animals for food is one thing. Killing them, cruelly, for fun or for cultural/religious tradition is quite another. In fact I consider it unambiguously evil.
e_McNulty_05-29-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the

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e_Menzies_05-11-08.pdf	As a conservationist and non-native member of the public, I am in guarded support of the Makah peoples' rights and ability to kill and eat a gray whale or two every year within the limits set by the 1995 agreement. After reading the DEIS I am persuaded that there is sufficient monitoring and oversight to keep the hunt from sustaining or stimulating international demand for whale products (my biggest concern). But I do worry that whalers and their communities in places like Japan will be able to redefine themselves as "aboriginal" to take advantage of any loophole in the international moratorium on whaling, and I am also concerned that native people could become proxies for corporate/commercial whaling interests, allowing the abuse of tribal rights for commercial purposes. I know the report covers the latter issue, but I wonder if there isn't some way of monitoring exactly what sort of international precedent is set by the hunt--i.e. if a provision should be added that requires the monitoring of international court cases which reference the hunt as a precedent for allowing other whale hunts. I also object to the Makah's at this point unsupported claims that eating whale meat would improve the health of tribe members who allegedly "need" whale meat due to genetically-ingrained dietary needs. Though the tensions between culture and genetics in native politics are often almost inextricably complex, in this instance a clear distinction between the two should be maintained. Additionally, I'm not convinced that there is any economically-defined need to eat whales either, since at this point in time tribal housing, subsistence, foodways, lifestyles, desires for many of the same goods (cars, boats, TVs, etc.) and services (energy, education, health care, etc.) are irremediably "westernized" and linked to the same production and distribution networks as any other community in the US--impoverished or not. Though the whales may feed hungry people, and I understand some natives' desire for autonomy, I don't think that whale hunting is an appropriate way to address entrenched tribal poverty or hunger. I'm most persuaded by the Makah's desire to shore up the tribe's cultural identity, establish a small degree of historical parity, and celebrate its unique history--as long as the hunt and its effects on the whale population are very closely monitored. For better or for worse, the tribe's effort to create or maintain a cultural identity distinct from the surrounding cultures of the state and nation is one thing the hunt will most definitely augment. The hunt is such a polarizing issue in the state, country, and world at large that non-native antipathy towards the tribe should have the internally-galvanizing effects on tribal identity the tribe seeks...though I'm unsure whether this benefit will offset the heightened hostility and outright racism directed towards the tribe and native North Americans in general. In any case, the tribe itself should obviously be free to decide on this particular issue. Finally, one thing I did not see in the report that I wonder about are the impacts--either positive or negative--that culling this particular species of whale may have on other whale species. I would guess that maintaining a smaller number of Gray Whales may help other whale populations recover, but I wonder too if there are endangered species who depend in some way on these whales' migrations or feeding habits etc.
e_Metcalf_05-11-08.pdf	I find myself torn in this issue. I personally find the idea of killing whales repugnant and unnecessary. I also can see the cultural notion of the fishery and know that Alaskan tribes take whales. My repugnance wins, however. I do not support the activity and would make personal efforts, such as contributions to causes and speaking out, to condemn the practice. I feel that the negative public opinion has a strong detrimental effect on the tribe's welfare.

COMMENTER	COMMENT
e_Meyn_06-21-08.pdf	I am in favor of such a hunt or hunts, since the Gray Whales are in no-way endangered, are a renewable source of animal protein and have been traditionally hunted for centuries. Wastage laws should be observed. I am not an Indian, nor am I a vegetarian. As a matter of fact I wouldn't mind tasting a piece of whale meat myself.
e_Michelson_08-15-08.pdf	The Makah state that they want to resume Whaling for tradition, cultural, health, and to bring pride back to there young people. It comes down to the fact that it is the Makah's have the treaty rights to harvest whales. But it is also the only treaty right that they wish to follow. After this treaty right is settled. A revue is do of all treaty rights should be done. They were breaking a lot of there treaty rights then and now, that is another subject. The fact remains that do to there treaty of 1855 they have that right, and they do not need permission, permits, or to comply with any new regulations set-up by the States,or Federal Government. It is stated in a book written by the Olympic Peninsula Intertribal Cultural Advisory Committee: Native people of the Olympic Peninsula.(WHO WE ARE). Quote: The Marine Mammal Protection Act "does not in any way dimish or abrogate existing protected Indian Treaty fishing or hunting rights." (Marine Mammal Protection Act 1995:17) It is up to the Tribe to develop regulations regarding tribal marine mammal take. With that said The Makah's right to hunt whales should not be challenged. If and when they decide to resume hunting which they state is for food, traditional, culture, and to bring pride back to the young people of the tribe. If the Makah People truly wish to reintroduce whaling traditions to their young people, then doesn't it stand that the use on non-traditional equipment defeats the purpose? Will all the traditions and rituals, before, during, and after the whale hunt be taught and followed? Wouldn't that be wonderful for the youth of Neah Bay to learn and understand the strength, dedication, and heritage of there ancestors.(*see reference material) The way that it is stated on the hunt that if the whale is struck with a harpoon anywhere then it can be shot, that is not traditional. All the traditional ways should be done first, then after a set amount of time then the whale should be shot. High powered rifles and powerboats are not tradition. When hunting is resumed the Makah Tribe should be required to provide there own security, not use the Coast Guard as there own police force at tax payers cost. If the Coast Guard is used then it should the Tribe should pay the cost of the service and it should go into the Operations Fund for the Coast Guard, just as oil spill incidents have to reimburse the Coast Guard. The cost should not come out of Non-Native funds. With the new state House Bill 2514 which requires all vessels to approach no closer than 100 yards of whales. This should keep the protesters far enough away so as not to interfere with the hunt. If they do break that distance then they should be fined the maximum amount of the fined. If they continue to break that law then there vessels should be seized and put up for auction. I attended the Meeting in Port Angeles on May 28th 2008, it was a very informative meeting. I talked to several of the Makah Elders at that meeting about whaling, sealing etc. one of the questions that I asked concerned drift whales, and why didn't they use them, it was stated that they never used drift whales and didn't want to use them because they didn't know the cause of death and how long it had been dead. In the research that I have done it stated that drift whales that washed up on the beach were thought of as a gift, and that they also pray for a whale to wash up on the beach. They didn't know back then how the whale had died, or how long it had been dead but they used it anyway. It that is true then any drift whale should be concerned and as much as possible used and considered a bonus. Another thing that should be considered about drift whales, and other dead whale is when the tribe starts hunting again, if a whale is struck and gets away and later washes up on a beach along the migration route, and it is proven that it had been harpooned by the tribe then they should be held responsible for the removal of the dead whale from the beach anywhere along the coast from California to Alaska including Canada. In closing I spent approximately 5 days a week for 3 years from Sept 1999 - Sept 2002. on the reservation an

COMMENTER	COMMENT
	got to know a great many Makah tribal members. The whaling subject did come up in many conversations, most of the members that I talked to about the eating of whale meat said that they didn't like it. The tribe states that the majority of the tribe wants the hunt and the meat, that survey was taken by the tribe. A survey should be taken by a netural party that is not assossated with the tribe to find the true feelings. The survey would help determine how mant whales need tobe taken each year for the tribes needs. Referance Book: Traditions & Change on the North Coast, The MAKAH, NUU-CHAH-NULTH, SOUTHERN KWAKIUTI AND NUXALK By Ruth Kirt. See Whaling: Pgs 133-138, 143, 165-171.
e_Miller_05-12-08.pdf	The Makah tribe should be allowed to hunt whale on their terms based on cultural and spiritual life styles, and the agreement in the treaty for the Makah's retain and maintain their life style by hunting whales. The article states the whales are in a stable pattern at this time. The culture of the tribe is based on a faith and love of all food sources from shell fish, land game and whales. They live the culture; it is not a lost or forgotten life style. I have seen their dances and ceremonies, listened to their teachings and prayers about the whales. They have deep respect for the whales. They have retained the right to hunt whales, they never gave it away, nor did the treaty give them the right, 'they retained the right' to hunt them and they agreed to stop due to the numbers getting low from over harvesting by the outside world, not over harvesting by the Makah's. The fact they agreed to stop hunting the whales is a sign of respect for the whales, and to societies concerns for the numbers of whales. The whales will provide food of course to the tribe but it will also provide a cultural food for the foundation or soul of the tribe as well. The idea that one race has control of another's culture is a travesty and a frightening aspect of the white society over all indigenous people. Should a race be in control of the Makah's culture? I resoundingly say 'hell no!' The idea is to look at the history of the tribes, and how long they have hunted whales. The number of years would be thousands of years longer than the development many of the European countries, and the coming of Jesus and all of Christianity, let alone the United States. I am all for the United States, but I am opposed to the condescending nature and attitude of the United States toward the first people living within this great country. The United States needs to begin supporting and respecting indigenous cultures to include the food they eat. Not taking them to court time and time again. One only has to look at the Judge Boldt decision and later rulings over shell fish harvesting. All those hearings over food the tribes have held sacred.
e_Miranda_05-13-08.pdf	Please honor their treaty rights and their ability to honor their subsistence and cultural past.
e_Moretti_05-30-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.

COMMENTER	COMMENT
e_Moretti_06-28-08.pdf	I strongly oppose the killing of whales by the Makah Tribe. Tradition is not an excuse to reconcile atrocities. The Makah Tribe should evolve and persue humane ways of living in harmony with nature, without harming any other living species. The Makah did not kill whales for many years and to return to this barbaric and savagely attitude is not acceptable. Our species must strive to respect and protect all other life, not destroy it and not to grant barbaric priviledges to blood thirsty savages. The earth and its creatures do not belong to any one or groups of people. Hunting is terrorism! NO MAKAH WHALE MURDERS
e_Morishima_08-14-08.pdf	I am writing in response to the request for comments on the draft environmental impact statement regarding Makah whaling which was released in May of this year. MORI-ko has provided professional services relating to management of natural resources for over thirty years. The DEIS presents information factually, clearly, and concisely while minimizing the potential for distractions and confusion. Undoubtedly, given that whaling is an emotion-charged issue for some, there is a strong potential for issues to become clouded by red herrings that will be ingrained in numerous and varied individual opinions from the public. Scientifically, it is clear that there is no evidence to suggest that the impact of the Makah's proposed hunt could even remotely pose a threat to the continued existence of the species. Federal courts have repeatedly held that the exercise of treaty-protected rights can be restricted by non-tribal authority only when there is clear evidence of the need for conservation, as carefully and narrowly defined to exclude "wise use" considerations. It is inconceivable that the Makah would jeopardize a resource that has been central to its culture, diet, spirituality, and economy for countless generations. Since the Makah Tribe itself proposed the guidelines and restrictions on the right to hunt whales under Alternative 2, the Makah's request should be granted. The Makah hunted whales for thousands of years. By the 1920's, non-Indian whaling had severely depleted several species of whales. The Makah voluntarily ceased whaling despite the enormous social cost to their community and kept that moratorium in place for seven decades. In 1970, the USFWS listed the gray whale as one of the baleen whale species in danger of extinction. In 1994, ESA protections of the gray whale were removed as it was evident that the population had recovered to reach or exceed historic (pre-European contact) levels. The Makah painstakingly endured lengthy domestic and international processes to regain the ability to resume whaling in the late 1990s and the tribe managed to take a single whale in 1999. Yet some anti-whaling interests persist in mounting violent protests and filing challenge after challenge in the courts and administrative proceedings. Scientifically, the Makah's modest proposal to resume whaling under Alternative 2 poses no threat to the resource. Socially, the ability to hunt whales would serve as a unifying and revitalizing force for the Makah community. Politically, approval of the proposed action would affirm the commitment of the United States to honor its obligations and responsibilities under its treaty with the Makah.
e_Motichka_05-12-08.pdf	As there are only two places to hear and give public comment, Port Angles and Seattle and neither are close enough to attend , Here goes. The Makah hunters broke Federal Law. The tribe did not do anything to take action against these individuals, and neither did the Government. They got a plea bargain. I bet that as a white Caucasian if I were to did some clams on a beach on tribal land , I would not be offered a plea bargain. The rest of the world does not do any whaling, with the exception of Japan, and they do it under the umbrella of Research. The International community knows this and the International Whaling commission knows this , and they know that this action is not right, and yet Japan continues on. What a crock of crap.

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	The Makahs need to come into the twenty first century. The tribe will not use these whales. Not one of the tribe will forgo a Mc Burger or a Whopper for some tasty whale blubber. Thus we have a slaughter of a whale for no good reason, treaty or not. If the whale was the only thing to eat to stave off starvation, then yes go ahead and hunt one. But no one in that tribe is starving. The actions of five individuals brought disgrace to the rest of the tribe. I myself know and fish alongside a Makah. He buys his license and obeys the laws set forth by the Dept of fish and wildlife.He is welcome anywhere on the river. He himself does not agree with the actions of these individuals, nor the tribal council. The tribe should not be given the permit to whale.
e_Neely-Walker_08-14-08.pdf	I believe the United States government should uphold and honor the treaty rights of the Makah Indian Nation. Allow the Makah to hunt gray whales in their accustomed places.
e_Nelson_08-15-08.pdf	I recommend the “no-action” alternative in the Makah DEIS. Here is why: —Parametrix, the firm hired to prepare the DEIS, has been employed by the Makah Tribe. This is a blatant conflict of interest and renders all the “science” and “facts” presented in the DEIS to be untrustworthy. —Whaling will disrupt the Gray whales’ migration and feeding patterns. The whales are already stressed by dead zones and algae blooms, as well as naval activities. The whales’ response to harassment makes them vulnerable to starvation and reduces reproduction. —The number of vessels and aircraft proposed in the whaling event is untenable. Tourist water craft is minuscule by comparison, and does not tax the whales. —Whaling on the Strait of Juan de Fuca would be dangerous and disrupting for those who live near or along the strait. —The resident population of Gray Whales are used to tourists, kayakers, and sightseers. These folks know the protocol of whale watching. The whales have grown to trust tourists and their patterns of feeding are not disrupted. All this would change with whaling. The whales would be passive targets. —Whaling, as proposed by the Makah, is a smokescreen for the tribe’s true intent: commercial whaling of Humpbacked whales. —The figure of 93 percent of Makah want whaling, is not true. Many Makah oppose whaling. Their voices were not represented in the DEIS. —The Makah tribe has spent $675,000 on the pursuit of whaling between 2003 and 2007. This money could be spent on education, jobs, drug rehabilitation , care for the elderly, housing, and tourism ventures. I also endorse the comments of Peninsula Citizens for the Protection of Whales.
e_Nicol_05-29-08.pdf	The Indians do not need to hunt any grey whales. they have lost almost all of their other traditions, it is preposterous to think that they could be permitted to kill such a magnificent animal that is so important to the sea. They have no need to do it. Yeah their ancestors hunted whales, but they don't have rely on grey whales, and other natural resources to survive anymore. They have everything they could want. Please don't let them kill the whales, it isn't fair to let them go around shooting whales with automatic rifles. If they want tradition, then why don't they hunt with traditional weapons? As you know our ecosystem is so fragile, why let them take another important animal from our waters, each one matters. There is enough killing already.
e_Niles_05-19-08a.pdf	Mark, I require a hard copy of the referenced draft EIS. I am hoping you are able to mail one to me at P.O. Box 2594, Olympia WA 98507. Please advise. Thank you.
e_Niles_05-19-08b.pdf	Yes; thanks. Good luck. DN -----Original Message----- From: Steve Stone [mailto:Steve.Stone@noaa.gov] Sent: Monday, May 19, 2008 12:07 PM To: Dennis Niles Subject: Re: Draft EIS on Makah Whale-Hunting Dennis - We have an extremely limited number of hard copies and these are very expensive to produce. The document is available on CD and I can mail one to you today - will that suffice? Otherwise it is available online and at several libraries (see http://www.nwr.noaa.gov/Marine-Mammals/Whales-Dolphins-Porpoise/Gray-Whales/Makah-DEIS.cfm) Steve Stone

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e_Nothnagle_07-21-08.pdf	Attached please find a letter sent by Congressman McDermott to NMFS regarding a request for extension of the comment period for the Makah DEIS. Friends of the Gray Whale are requesting an extension until October 8, 2008.
e_NWIFC_08-16-08.pdf	[Duplicate – see NWIFC_08-15-08.pdf]
e_O'Brien_05-10-08.pdf	I would like to express my DISAPROVABLE of a whale hunt for the Makah tribe. It is a selfish, self-serving endeavor on their part to take the life of a precious whale for "Ceremonial and subsistence" purposes. The tribe is now assimilated into modern culture and should not use the EXCUSE of ceremony to slaughter a whale. Secondly, I seriously doubt if any member of the tribe has not had enough subsistence. They all look well fed to me.
e_O'Conell_08-15-08.pdf	I think if Native Americans want to restore their cultural roots they should go after a symbolic whale. They do not require the whale for food. What they want is money! Protect these whales who don't deserve to die needlessly and in great suffering!
e_O'Connell_05-15-08.pdf	Thanks a million- I appreciate your time and speedy response with getting the CD out to me, I'll shoot you an email when I get it. I do request an extension, I understand that it is quite a large document and it will still essentially be two or three weeks in the post round trip and I will need time outside of my normal day to day commitments in order to go through it and reply.
e_O'Donnell_05-12-08.pdf	I am writing to express my opposition to any authorization to allow the hunting and killing of gray whales by the Makah Indian Tribe. The gray whale is protected by the MMPA and the MMPA should continue to be reinforced by the United States government. The US has participated along with many other countries in discontinuing the practice of whaling; and many, many people in the US and around the world object to continued whaling by countries such as Norway and Japan. As a nation, we cannot make exceptions for our own citizens. Scientific discovery in the area of oceanographic research is providing new information about the underwater ecosystems and its inhabitants every day. Our knowledge has broadened immeasurably with regard to the intelligence and habits of the large marine mammals and much remains to be learned. One thing for sure is that in the twenty-first century it is totally unnecessary to hunt and kill whales for most peoples even where traditions exist. This especially holds true for the Makah who although have historically hunted whales have not done so for generations. There would seem to be options available to the Makah to celebrate their heritage that would not involve killing whales. Symbolic no-kill hunts could be a viable option. I ask that NOAA take the no-action alternative and not approve the Makah Tribe's request for a waiver of the MMPA moratorium with regards to hunting and killing whales or any other protected species.
e_Olsen_06-16-08.pdf	I am deeply concerned that the permission for whale hunting may be approved for the Makah tribe. I feel that some traditions need to be modified or no longer practiced in this day and age. We now know how intelligent these creatures are, we now understand the complexities of their life and family units, the whale numbers are getting low and it just doesnt make sense to allow whale hunting at this time.
e_O'Neil_06-07-08.pdf	Please accept our comments regarding the Makah Indian Tribe's appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the defenseless animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, provided the offenders violated no laws the following year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. In the 21st Century, no human being needs whale meat to survive - including the Makah Tribe, who until recently, mercifully left the gray whale unmolested for over 70 years. The "reinforcement of tribal identity" does not justify blatant slaughter. Whales are typically harpooned or blasted with high-

COMMENTER	COMMENT
	powered rifles under the guise of "cultural" whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please do not honor "treaty rights" to massacre whales. We urge you to deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Orca Network_08-15-08.pdf	Please take into consideration our comments on the proposed Makah Gray Whale Hunt DEIS: Orca Network is an education and advocacy non-profit organization, our projects include a Whale Sighting Network (for orcas, grays, humpbacks & other cetaceans in the Salish Sea and along the Pacific Coast), and the Central Puget Sound Marine Mammal Stranding Network. We are very involved in following the status of Gray whales in the Pacific NW; our stranding network responded to a dead stranded gray whale in December 1998, which had died of starvation - this was the first of hundreds of gray whales to die during the next few years, bringing the gray whale population down. We have since responded to 1 - 2 dead gray whales each year in the Central Puget Sound region. We also closely track the travels of our "local" Saratoga Gray whales - 10 - 12 gray whales identified by Cascadia Research as coming into the waters of Puget Sound each spring to spend three months feeding in Saratoga Passage and Possession Sound. The same whales return each year to feed in their usual and accustomed feeding areas - this population often fares better than the larger "Resident" or migrating whale population, because they are a small group that rely on these specific feeding areas for three months (this year it was four months for several of them) during the year. Many of these whales have been documented by Cascadia Research since 1990, returning all or most years to feed in Puget Sound, and the residents of Island County anxiously await the arrival of these grays each year, as they feed very close to shore providing excellent shore-based whale watching opportunities. Although Orca Network respects the Makah Tribe and their culture, and we support efforts to revive and renew their cultural activities, we do not support their Gray whale hunt. We propose they take actions such as their neighbors, the Quielieutes, who instead of reviving their history of whaling, look into eco-tourism and whale watching as a way to celebrate their tribe's history and connection to the gray whales. The Makah do not rely on whale meat, and this is not a true subsistence hunt. We hope the Makah will move more toward conducting whale research, monitoring the whales' movements and population over the years, rather than conduct a hunt to kill whales that could likely be a part of the very small community of Saratoga Grays, or the larger but local Resident population of grays that feed off the Washington Coast. When our whale stranded in 1998, we assembled the skeleton for educational purposes. Members of the Makah Tribe came to some of our work sessions for advice and practice on assembling the skeleton of the whale they killed in their first hunt, which now hangs in their cultural center. We would like to see the Makah focus on showing people the natural history and beauty of the gray whales - including their history of hunting the whales and their spiritual connection to them, but realizing that not all cultural traditions should continue through the years. Keeping slaves and other cultural practices by many races in our country have been abandoned as we become more enlightened, and given the changes in human attitudes toward whales over the past fifty years, it is time for the Makah Tribe to take a close look at their plans and alternative options, and do the right thing for the whales and for their people. There is much scientific disagreement about what the population of our gray whales actually is at this time, or what direction it is heading - and with added unknowns such as effects of global warming, decline of many species, and the recent dip in the Gray whale population because of lack of food, we do not believe whale hunting on any scale should be allowed. Gray whales are difficult to identify, even by researchers who know them individually very well - killing one of the local Saratoga Resident grays would take away 10% of the population of that group. The proposed action could take nearly 30% of the larger Resident Pacific Aggregate population in a period of 5 years. On the human-side of this issue are the public safety issues - with increasing numbers of recreational boaters on our waters, a whale hunt could easily harm people in the vicinity. The unauthorized hunt that took place in Sept. 2007 was an example of how things can go really wrong. The hunters obviously didn't have control of their weapon, were shooting it in the Strait of Juan de Fuca with other boaters on the water, in an area where gray

COMMENTER	COMMENT
	whales had been observed for months by local residents, often doing shore-based whale watching. The authorization of this hunt also weakens the US' efforts at try to keep other countries from whaling. If we allow this as a subsistence hunt, when it clearly is not a case of this tribe needing the whale meat to survive - we are only making a case for other countries to hunt whales. And when we allow the Makah to conduct an unauthorized whale hunt without consequence, our country is making the case for other countries to continue to flaunt the IWC whaling ban. Therefore, Orca Network submits the following: **Alternatives 2 - 6 are entirely unacceptable. The only alternative that would not cause substantial harm to Washington's Resident Gray whale and the Saratoga Gray whale populations is Alternative 1 - No Action.**
e_Orr_05-10-08a.pdf	Please voice my opinion in support of Makah Whaling rights. This small group of people should be allowed to hold on to their heritage which has been passed down through the generations. How can a Nation built on personal and Religious freedoms, impose restrictions to those very cornerstones on a small group of people who have lived here centuries before the annexation of their way of life by immigrants from abroad? Heritage and pride are central to the identity of the Makah's. Teaching and involving their young in these things helps to instill pride, which in turn, builds better communities. As long as gray whale populations are healthy, there is no justifiable reason to block the Makah's ancestral and religious ceremonial hunts.
e_Orr_05-10-08b.pdf	Please voice my opinion in support of Makah Whaling rights. This small group of people should be allowed to hold on to their heritage which has been passed down through the generations. How can a Nation built on personal and Religious freedoms, impose restrictions to those very cornerstones on a small group of people who have lived here centuries before the annexation of their way of life by immigrants from abroad? Heritage and pride are central to the identity of the Makah's. Teaching and involving their young in these things helps to instill pride, which in turn, builds better communities. As long as gray whale populations are healthy, there is no justifiable reason to block the Makah's ancestral and religious ceremonial hunts.
e_Owens_05-16-08.pdf	Here is our local paper's front page headline's article. http://www.peninsuladailynews.com/article/20080516/NEWS/805160303 I guess one person's "minimal impact" is another person's worst nightmare,
e_Owens_05-23-08.pdf	Another reason we are fighting so hard, and you folks know this is their goal, along with commercial whaling, you know it! Here is an article about the resurgence of the humpbacks. Margaret asked Wayne Johnson (IWC meeting). Why is there a humpback on your jacket? He said, "why eat hamburger if we can eat steak" ? See attach. http://ap.google.com/article/ALeqM5jWFkQCL_vHK6YpzN4u_OGxhZdm6AD90R7UIO0
e_Owens_05-29-08.pdf	Hi Donna, Here is our local paper's article on the meeting last night. Margaret believes you when you said that you want this to be a honest document with nothing swept under the carpet. She has only been saying the nicest things about meeting you last night.
e_Owens_08-13-08.pdf	[Duplicate; see PCPW_081408.pdf]
e_Paddison_05-10-08.pdf	I am against ANY whaling by the tribe. They showed it was a mockery and butchered the last whate illegally. They couldn't even bring it in and allowed it to sink. What a waste. They showed their true colors and shouldn't be given a second chance. What kind of tribal tradition is using hand grenades on a stick?
e_Parker_06-30-08.pdf	ALONG TIME AGO, BEFORE THEM PRESENT DAY ORGANIZATIONS OF TODAY CAME INTO BEING, A TREATY IS PUT INTO PLACE FOR THE PROTECTION OF A PEOPLES HUNTING AND FISHING RIGHTS, A TREATY WE TRUSTED WOULD DO JUST THAT FOR THE PROTECTION OF

COMMENTER	COMMENT
	OUR RIGHTS THAT OUR FOREFATHERS SAW AND SOMEDAY WOULD HELP US GET THRU WHAT IS HAPPENING NOW WITH THE MAKAH, FOR THE PROTECTION AGAINEST THESE ORGANIZATIONS THAT WERE`NT IN PLACE WHEN THE TREATY FOR OUR PEOPLE WAS SIGNED BY THE UNITED STATES GOVERNMENT. BROKEN PROMISES STILL AND PROBABLY WILL ALWAYS EXIST FOR THE NATIVE PEOPLE OF THIS LAND THAT WAS ONCE OUR`S, UNTIL WE NO LONGER EXIST AND THAN YOU`LL BE HAPPY WHEN THAT OCCURS, AND THAN THE JUDGEMENT. BUT I FOR ONE, AM APPALLED WITH WHAT IS HAPPENING TO A PEOPLE THAT THIS SHOULDNT BE HAPPENING TO FOR THE SIMPLE FACT THAT ITS A TREATY THAT IS BEING VIOLATED, AND YOUR LETTING IT HAPPEN AND PAINTING A PICTURE FOR THE PUBLIC THAT WILL NEVER UNDERSTAND RIGHTS OF A PEOPLE THEY WISH NOT TO KNOW. I`M PULLING FOR A LAW SUIT FOR WHATS TRANSPIRING AGAINEST WHAT IS ALREADY IN PLACE AND SHOULD BE RESPECTED BY ALL.
e_Parker_08-15-08.pdf	Hello and thank you for taking public comments on this very serious request from the Makah Indian Tribe. I am not an expert on the matter but I have been active in the conservation and restoration of Pacific Northwest water environments, connecting environments and the health of the marine life population for many years. I understand the basic facts that the Makah Tribe want to resume hunting Gray Whales for both financial and cultural reasons. I can not speak to the cultural reasons as I am not Makah nor Native American. As a resident of these lands and waters however, I appreciate the opportunity to have my opinion heard on the hunt in terms of the financial concerns of the Tribe. While the US Government historically has been incredibly unfair, harsh and even cruel in the treatment of our Native Americans this does not justify the killing and/or slaughter with high-powered, large-caliber rifles of our endangered Gray Whales. I understand Japanese Whalers can profit 500K or more from one Gray Whale; however, this does not justify sanctioned killing of whales. Many countries vehemently oppose and are active in their opposition to the Japanese Whale hunting. It is an immoral act to to hunt and kill endangered animals, particularly for profit. The Makah Tribe continue to have a very serious financial crisis coupled with high unemployment, crime and substance abuse. My response does not address the long battles the Makah tribe have faced and continue to and it not that I do not care or am not concerned. But the issue today is about the killing of an endangered animal and the negative environmental impact it has on us all. I do not see how the entire populace, humans and marine life, as well as our very fragile ecosystem in the Pacific Northwest benefit in any way from a sanctioned hunt minus a short term financial boon to the Tribe. The long term negative repercussions to our fragile ecosystem of all whale hunting is felt by us all. I do not support the issuance of limited killing of Gray Whales.
e_ParkerA_06-17-08.pdf	Please note my opposition to any harvest of whales by the Makah Tribe in 2008 or any year. I am involved in commercial vessel construction including whale watching vessels, we consider whales a co –clients.
e_ParkerW_06-17-08.pdf	There is no longer a need to hunt Whales,You can't go back.
e_Payne_05-13-08.pdf	I am writing to voice my objection to allowing the Makah Indians hunt any more whales this year. They need to deal with the reality that we can not live in the past, but must address the future. My ancestors used to hunt and fish for special occasions, for subsistence and for trade. Because we are white, it is no longer possible. I would voice less objection, however, if they allowed only Indians that were 100% native instead of sometimes 1/9th, hunted whales as their ancestors did in wooden carved boats with oars and used harpoons, instead of guns. Now they use state-of-the-art boats and weapons that just does not make sense. Lastly, they should wake up and realize that we are one nation, instead of thinking they can have the best of two worlds. Our planet is at a critical juncture where we have to unite and follow a course that is best for all species, not just humans, and our planet, earth.
e_PCPW_05-15-08.pdf	From Chuck Owens, President, Peninsula Citizens for the Protection of Whales

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	First we are asking to re-schedule the meeting in Port Angeles Wa. to a later and more convenient date. The May 28th meeting to help us "navigate" the DEIS is only relivant in context of a lengthened coment period. Next we are requesting that the time period for the DEIS comment period be extended 90 days to allow we who have jobs and other important things in our lives time to read, decifer and research the 900 pg EDIS document. NMFS has had 3 years to make this document, show some respect and please give us a fair amount of time to do what we need to do.
e_Pearen_05-28-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Pefaur_05-11-08.pdf	I believe that the Makah acted within their rights to hunt for the whale, despite the federal government's assertion that the right to regulate that action was within their authority. I don't pretend to understand why anyone would want to hunt a whale, but I do believe that the right to do so must be protected if it was promised to the tribe.
e_Peirson_08-15-08.pdf	Why should our Native Americans have the right to abuse, and treat inhumainly a Whale who was created to be a friend to Man Kind. To Chase this Mammal until it is Exhausted, and then to Murder it is totally un-American in nature, and The Native American Indians should not have that right. They do not own the animals. GOD does!
e_Pen_05-13-08.pdf	We as a global community oppose whaling, of any kind. These magnificent creatures have endured centuries of slaughter and mutilation from people, and we will no longer tolerate this brutality. These mammals are gorgeous, and should be protected not brutalized, for the enjoyment of humans. We no longer feel that "tradition" is an excuse for the murder. Previous cultural traditions have included wife burning, and we have stood against this barbarism too. I urge you to publicly declare your opposition to whaling and respectfully request you take immediate action to encourage any community to cease its whaling activities.
e_Penn_08-14-08.pdf	I am sorry for the destruction that the indigenous cultures have suffered, but I strongly urge you to stop the Makah from hunting gray whales any further. We have no idea how climate change and pollution may effect the populations of gray whales in coming years and decades. As a citizen of the US, I want the Makah whale hunts to be blocked now and in the future.
e_Pierce_06-02-08.pdf	I a citizen concerned about the Makah request to legally hunt whales. I consider myself to be an environmentalist in favor of protecting whale populations. However, I support a limited hunt if it would not pose a danger to the population and it does not become a commercial (as opposed to cultural, spiritual) operation by the Makah. The Makah lived here for thousands of years before Europeans

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	and others posed a threat to whale populations with technology. They were not the cause of threatened populations. I believe it is within the spirit, if not also the letter of their treaty rights to hunt whales as a way to maintain their cultural identity.
e_Pierce_08-15-08.pdf	Why not have symbolic rituals and let the noble creatures live out their lives! My ancestors had traditions that I would no longer do but I can respect them in other ways. You have lost much respect, locally and across the continent with your stupid, senseless killing and torturing of the whales. Stop it!!!!!
e_Pilger_05-14-08.pdf	Please extend the comment period regarding the Makah Whale Hunt. An extension of 90-120 days would be appropriate. The EIS took 3 yrs, so how is it possible for everyone to read it and attend the hearings in just a few weeks? The public has a right to an extention, as well as the whales -- their lives hang in the balance.
e_Pine_05-12-08.pdf	I am a linguistic anthropologist currently affiliated with Pacific Lutheran University as a Faculty Fellow. I will be taking up a tenure-track position at Western Washington University in the Fall. I have had the opportunity to visit Neah Bay and been priviledged to spend some time with the team of people who are engaged in reviving the Makah language. I am writing to express my complete support for a solution which permits the Makah to whale according to their tradition and within the guidelines set forth by the International Whaling Commission. I realize that you are recieving a significant amount of mail on this topic. I will, therefor, keep this note brief and address only four specific topics, drawing from what I have read recently of arguments in opposition to completely legal Makah whale hunts. I note that many opponents argue that Makah people were not necessarily unanimously in favor of resuming whale hunting. This is in no way an argument for depriving the Makah people of the right to decide, independently, on a course of action that is within their legal rights. Currently, the Democratic Party is deeply divided over its choice of candidate for the upcoming presidential election. This in no way authorizes the Republicans (or the British, for that matter) to make a choice for the Democrats. The argument about the thinking, feeling nature of grey whales is romantic, and applicable only if you feel that you must not eat things that think and feel. If, as many native peoples including the Makah, you have traditionally assumed that you are part of a web of life within which thinking, feeling creatures eat other thinking, feeling creatures this argument holds no water. Again, even if there is some debate among the Makah themselves this in no way authorizes outsiders to come in and make a choice for them. Pigs are also thinking and feeling creatures, more intelligent than dogs in many ways. If you choose not to eat pork, that is your choice, but you are in no way authorized to take my bacon off my breakfast plate. The argument that the whale might not be eaten entirely, or that not every Makah individual would enjoy their first taste of whale, also does not requre that the Makah be further deprived of the legal right to make their own decisions regarding whaling. A great many foods which are good for us are acquired tastes. People may spurn brocolli, turn up their noses at salmon, refuse to touch a pizza with anchovies when they first encounter these foods, only to discover that over the course of time they have grown to enjoy them. Acquiring, over time, a renewed appreciation for whale meat, a taste which would be shared with many cultures around the world, is, I would argue, an implicit right protected by the treaty of 1855. There are those who argue that whale hunting ritual could take place without actually killing an individual whale. Perhaps these same folks would like to attend a nearby Catholic Mass and inform the congregation that their traditional sacramental meal can take place without any actual wine or wafer. The experience of hunting and consuming Whale, a sacramental meal associated with ritual, might change over time, if Makah culture changes, just as in some Protestant congregations grape juice is substituted for wine in the interest

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	of avoiding alcohol. The central issue here is that Makah people have the legal right to make this decision for themselves, and all others are prohibited by treaty from interfering in the legitimate decision making process. Finally, with regard to treaty rights "giving" something to the Makah, I must point out that this is factually inaccurate. When the treaty was written, it in fact took away many rights. The rights protected by the treaty, including the right to hunt whales, are those few rights which the Makah at the time deemed absolutely inalienable, while those same elders ceded other rights. Just as we respect the decisions of elders who drafted our Constitution, we must respect the decisions of elders, Makah and non-Makah, who drafted the 1855 treaty.
e_Pippinger_08-13-08.pdf	It is my strong opinion that whale hunting by the Makaha tribe should be forever banned! I respectfully request that all petitions for the hunt be denied by the dept. of fisheries & Noaa.
e_Povah_05-10-08.pdf	Here is my "substantive" comment on the "subject" of the "Draft EIS on Makah whale-hunting request"...specifically, the "subsistence" aspect of it. All of those "subs", of course, raise the question, "Will submarines be the Makah whalers' next weapon of choice?" After all, the very traditional 50-caliber anti-tank gun only has a success rate of 50% so far...at least in terms of the retention of the two gray whales (that we know about) which slowly died after being shot with that weapon. Torpedoes would likely be much more efficient, especially if they hit the whale somewhere near the head. Before you press the "delete" button, please read on: All sarcasm aside, I do want to pass along a few unequivocal FACTS! If "ceremonial and subsistence purposes" (emphasis mine) is the best argument the Makah whalers and/or NOAA can come up with, to justify this 21st century barbarism, then I say, "UBI$TENCE -- and ceremonial purpo$e$ -- MY A$$!" Just in case the above requires any translation/clarification, it means: The hunt has nothing whatsoever to do with culture, heritage, tradition...or subsistence: It is solely and exclusively about money! I, personally, don't have any direct evidence. That said, some time in early/mid 1999 -- as a volunteer crew member on board the Sea Shepherd Conservation Society vessel Sea Shepherd III, in and around Neah Bay, WA -- I heard that the Japanese had paid the Makah whalers $1 million to kill a gray whale. The Japanese had no interest in the whale itself or getting any of the meat. "Why would the Japanese do that?", you might wonder. So glad you asked! Until May 17, 1999, Japan and Norway were the only two illegal/pirate whaling nations in the world. And, until that same date, the U.S. had been one of the strongest voices -- opposing any and all whaling -- at the International Whaling Commission. >From the Japanese perspective, what better way to simultaneously 1) make whaling appear to be more globally acceptable/palatable and 2) quash the U.S. voice at the IWC? "Ceremonial and subsistence purposes" is to the Makah whalers what "scientific research" is to the Japanese! It's fraudulent! It's a scam! Don't be duped! Choose the "no-action" alternative!
e_Pratum_05-20-08.pdf	Please do not allow whales to be hunted. It's not ok! The animal rights issues here are a major problem, but also the safety of people involved is at risk, and that's not ok.
e_Prudden_06-06-08.pdf	This letter is to urge and implore you to not allow any whale hunting by the Makah Native American Tribe, for any reason at all, at any time now or in the future. Many other people on the earth have spiritual and cultural practices which have been voluntarily given up to benefit the best interests of human beings as well as animals and nature and the environment. The Makah should be required to do likewise for the benefit of the environment and lives of the whales. The killing of whales stands out against all the natural instincts of God and nature and for the US Government to allow such beautiful creatures as whales to die for such unneeded tribal practices and purposes is a national tragedy.

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	Thank you for your consideration of this urgent request to disallow any hunting or killing of the whales by the Makah Tribe,
e_Puckett_06-02-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours -how would you like to suffer like this ????? These whales have hearts therefore they feel too!!! The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is not RIGHT!! Tell them to eat vegetables and fruit!! This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Rae_06-14-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to MURDER whales. I respectfully ask you to consider this fact: In the 21st Century, **NO human being needs whale meat to survive** -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years! The "reinforcement of tribal identity" does NOT justify slaughter! Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over NINE hours!! The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is totally UNACCEPTABLE -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales!! There is NO rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally MURDER whales under their treaty.
e_Redmon_05-30-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, and I don't eat whale meat, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death.

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	After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Riley_05-10-08.pdf	Treaty, or no treaty, I strongly oppose allowing any hunting of whales by the Makah. Even if the whales are not endangered at this time, whaling is brutal. It appears as if it is impossible to make a clean kill of a whale. There has to be considerable suffering as long as the whale doesn't die instantly. Is something inhumane acceptable just because it is "tradition"?
e_Robey_05-28-08.pdf	Please consider my position in favor of permanent revocation of Makah whaling rights for the following reasons: A) The Makah Treaty of 1855; specifically Article 4, which allows the tribe to whale, is a 152 year old document; one which pre-dates the AMERICAN CIVIL WAR BY 6 YEARS, and is therefore no longer relevant. B) The Makah claim of 'subsistence' whaling [under the International Whaling Commission's criteria] is obviously false. You can not "subsist" on whales that your tribe has not hunted for over 70 years. C) The Makah right to whaling on a 'cultural' basis is no longer true or applicable. In the hunt of 1999 the tribe availed itself of speed boats; cell phones; Coast Guard cutters; "spotters" from helicopters; high powered rifles and machine guns to bring down their prey. The traditional long boats and spears used by their ancestors played a minor and incidental role in the kill. From a "traditional" standpoint, the methods employed were solidly 21st century...and a complete travesty of Makah ancient whaling practices. D) Whale populations are being depleted at an alarming rate. Pollution, global warming, dwindling food sources, ship strikes, disease, sonar disturbances and rogue whaling worldwide, have all taken a devastating toll on a species capable of producing only one calf, per adult female, per year. No ONE group should be exempt from the global responsibility we ALL share for ensuring the continued survival of our whales. Scientists have recently admitted to miscalculating the 'success' of the Gray whales' return from the brink of extinction. They have observed several 'skinny' Gray whales and conclude that their food sources may be rapidly declining due to global warming. E) The Makah's cousins, members of the Maa-nulth First Nations, who reside on the Western shores of Vancouver Island have signed an agreement with the Canadian government in which they will honor a 25 year moratorium of their whaling rights. In return, they were given generous concessions of land and cash. If the Makah are genuinely interested in "honoring" whales, they must be committed to allowing them to live in peace and safety; while helping improve the quality of life for all Makah by increasing financial and educational opportunities for their people. At a time when the world is faced with multiple species extinction; pollution; global warming and rapidly dwindling natural resources, eliminating ALL whaling is the only ethical, moral and ecologically responsible decision to uphold.
e_Robinson_05-27-08.pdf	I am writing in opposition to the Makah whaling proposal. If the Makah people were to use the whale products in their culture, eat the flesh and use hunting modes available when the treaty was written, I would be more inclined to agree with 1 whale per year. I do not believe that the people at the time of the treaty used high-powered speedboats with high-powered harpoons to chase down the whales as do the modern Makah. In a time of ecological trauma to

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	our earth, we should celebrate the resurgence of any whales and not use that resurgence in population as an excuse to kill them. We do not know how long that resurgence will last in today's ecological climate. If they must have this "religious" experience, they should show reverence for their ancestors by using the traditional methods of capture available at the time of the treaty.. By the way, 5 tribes of American Indian flow in my veins, but I show reverence to my ancestors in ways that do not harm nature.
e_Roehr_05-15-08.pdf	I am opposed to issuing a permit to the Makah tribe for the purpose of hunting and/or killing whales. It is possible for them to continue their traditions, ceremonies & culture, as has been done for decades, without killing whales. There is no economic benefit to the Makah tribe from killing whales & there is no logical reason to hunt & kill whales simply to maintain a treaty right. The hunting & killing of whales as proposed is inhumane nor does it reflect the Makah tribe's real intentions in supporting the whale hunt. I believe that the Marine Mammal Protection Act should be upheld & no whale hunting or killing should be permitted by the Federal government under any circumstances.
e_Ross_05-16-08.pdf	Please do not allow these terrible killings. We have come a long way since the 1800's and it would be ingnorant of us to allow the Makahs to kill innocent intelligent beings.
e_Rossiter_08-15-08.pdf	Thank you for the opportunity to comment on the “Draft Environmental Impact Statement (DEIS) for Proposed Authorization of the Makah Whale Hunt”, May 2008. With respect, Cetacean Society International (CSI) urges the National Oceanic and Atmospheric Administration (NOAA) to review and correct the overwhelming number of DEIS deficiencies, whether inaccurate, misleading, unclear or omissions of fact. We have no doubt that many of these deficiencies will be presented to NOAA in public comments, and NOAA professionals are certainly aware of many of them. However, the unwieldy scale of the DEIS, and the overlapping of the comment period with many other priority issues of concern, likely will preclude even the most ardent reviewers from catching all deficiencies. CSI acknowledges that our best efforts could not review this document adequately, even with an extension period, and we reserve the right to revisit the document. The mechanism for these corrections may require aneventual Supplemental EIS (SEIS), but no matter how they are accomplished, they must be done. To assist with making these corrections, CSI urges NOAA to pay particular attention to the DEIS-referenced critique by the Peninsula Citizens for the Protection of Whales. Their local expertise, exhaustive review of the DEIS, and long-term familiarity with the Makah Tribe is an incomparable asset that can help NOAA avoid even more complications in this arduous process. Overall, this DEIS is the worst presentation of relevant material of any of the 23 EIS-related documents I have reviewed since 1976, beating out a US Navy DEIS for mid-frequency active sonar training that simply vanished after the public comment period. The reason the DEIS is so bad is that it could only be written by omitting and misrepresenting relevant facts, and the ultimate responsibility is NOAA’s. The Final EIS provides an opportunity for NOAA to award a contract for preparation of the NEPA document to an objective, disassociated and knowledgeable preparer, defusing a potential conflict because of the preparation of this DEIS by Parametrix Inc., under contract to NOAA. It is obvious to many that the flaws in this DEIS may be related to the connections between Parametrix and the Makah Tribe. These are so pervasive that the DEIS is irrevocably inadequate and biased, contrary to the intent of the National Environmental Policy Act (NEPA). Parametrix’s conflict of interest justifies intense scrutiny, and CSI believes this scrutiny will show, given the relationship between Tribe and company, that Parametrix could not have been objective or substantive in its preparation of the DEIS. Whether these flaws were intentional or not may be decided in court.

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	We do not know of any DEIS intentionally prepared by an entity with such an obvious conflict of interest as with Parametrix's long-term financial and contractual interest in aiding the Makah Tribe. For example, Parametrix profited from facilitating the Juan de Fuca Byway, and in 2002 supported the Tribe's attempted annexation of their reservation road into the Byway. Public opposition to the "whaling road" stopped the annexation, so in 2003 Parametrix had a Corridor Management Plan contract for the Makah Tribe's Cape Flattery Tribal Scenic Byway. Parametrix's motives were linked to helping the Tribe "interpret" whaling to tourists, and are clearly reflected in their self-interested emphasis on improved whaling-related tourism that they repeat several times in the DEIS text. At one point Parametrix writers blissfully say: "Overall, it is reasonable to expect more visitors would be drawn to the area than avoid the area as a result of a whale hunt." This is contrary to all of the demographic facts CSI is aware of; watching whales being killed or butchered is not on many tourists' itinerary, and is not offered by any tour-promoting services outside of Japan and Norway. CSI is aware of other links between the DEIS preparer and the Tribe. For example, the Makah Tribe in 2006 selected TranTech to administer the ten million dollar paving of the Tribal Byway through Neah Bay. TranTech is linked to Parametrix. Parametrix is also linked to the Neah Bay wave energy project. NOAA was derelict for allowing this conflict of interest to happen. If another example is necessary, Parametrix's self-serving DEIS discussion of the effects of whaling on tourism focuses improperly only on the Makah reservation, not surrounding Clallam County. While the DEIS states that there is "no evidence that calls for boycotts of Olympic Peninsula tourism had any negative economic impact on tourism in the area", locals believe there were economic impacts and the 2005 Scoping Report acknowledged the many comments about the need to analyze the effects of whale hunting on regional socioeconomics and tourism. While Parametrix serves itself best by downplaying the current regional, US, and worldwide public perception about whaling, there should be no question that the reaction will affect tourism and necessary support for real Makah needs. Countering its own text, the DEIS even dismisses boycotts as being probable no matter what whaling alternative is chosen. Another categorical reason this DEIS is inadequate, biased and flawed, contains comments that appear to be misleading, arbitrary and capricious, and does not satisfy requirements of the NEPA includes NOAA's failure to make public material relevant to the DEIS. For example, CSI is not aware of any public release of the agency investigation into the September, 2007 illegal whaling event. We are aware that several people have tried and failed to see it. A review of that investigation is mandatory for an adequate review of the DEIS, because the event and aftermath demonstrate several fundamental reasons why permitted Makah whaling will be akin to letting an uncontrollable genie out of the bottle. The fundamental DEIS pretense that permitted Makah whaling can be effectively regulated was destroyed by the illegal whaling event. In brief, four men avoided all pretext of cultural whaling, subsistence need, and humane methods to try to kill a whale simply because they wanted to. It is inconceivable that, within the insular and small Makah community, the Makah leadership and enforcers were not aware of or alert to the potential whaling. If they truly were unaware then they are inadequate to the responsibilities implied in the DEIS. However, additional evidence suggests that Makah Tribe officials were aware of the impending and illegal hunt in September, 2007, in addition to one convicted whaler's court testimony to that effect. Whether or not Makah authorities were aware, the whaling event demonstrated that these authorities lack the will or capacity to constrain unpermitted whaling. The Makah Tribal Court, for another example, is unable or unwilling to enforce the law. The Court had initial jurisdiction over the event, and in bringing the whalers to trial declared that the defendants would face punishment on tribal charges, to the fullest extent of the law, of a year in the Neah Bay jail, $5,000 fines and temporary suspension of their treaty right to hunt and fish. However, after considerable trouble empanelling a jury, tribal judge Stanley Myers agreed to waive any punishment and drop all tribal charges against the whalers in return for a year's good behavior. Myers was dismissed later.

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	The DEIS and Needs Statement arguments for Tribe's ceremonial and spiritual needs were mocked by the illegal whaling, which obliterated all the forced connections between modern whaling and Makah whaling lore, tradition and social structure. It clarified that, to some Makah whalers, whaling is like any other hunting. To them the Tribe's ritualized ceremonies, and whaler crew selection, celibacy, preparation and special training in dedicated canoes is for museums, and the whole Makah hierarchy from whaling captains down to slaves is meant for the tourists. In fact, the illegal whaling demonstrated a fundamental flaw in the DEIS and Needs Statement: While many Makah may want to be proud of their heritage and history, they do not want to live as their forefathers did. This has as much to do with the demand for social equality for all Makah as US citizens as with the conveniences and comfort of modern living. Some American values have been accepted by the Makah, at least the many living in poverty, or from low-ranking families; no one wants to be a slave. The Makah who illegally whaled showed distain for the Tribe's heritage, custom, and hierarchy, and declared that they had a right to whale when and how they wished. The illegal whaling also demonstrated that the humane aspect of killing whales is not reinforced or regulated adequately in the DEIS or US policy. The DEIS expresses some concerns that any hunted whale be killed as humanely and quickly as possible, but the rogue whaling clarifies that it is not enough to require Makah whalers to be trained and proficient in the use of weapons, and it is not enough to give them adequate weapons. No one can deny that the wounded gray whale suffered unnecessarily for many hours before it finally died. One of the rogue whalers was a trained whaling captain, and the four men had the best equipment at their disposal, stolen or not. Nevertheless, their performance was so inept, despicable and ludicrous that the whale's time-to-death rivaled the worst cases the IWC is aware of. NOAA must find some way to ensure that Makah whaling does not cause undue suffering, and the DEIS must state how that will happen. The illegal whaling event adds to the evidence that the Needs Statement conclusions are not supported by evidence from the current lifestyles of the Makah, and their use of whale products over more than a decade. CSI contends that the Makah Needs Statement makes erroneous conclusions based on the assumption that the Makah really want to live the old way. To verify our contention we need to review the full data set behind those conclusions, but they have not been made available to the public for review. This is another example of how NOAA has made adequate public review of the DEIS unnecessarily, perhaps illegally difficult. The DEIS ignores evidence that the Makah people were so unenthused with dealing with an actual whale carcass that the butchering was left to visitors, as related in comments by an Alaska Native whaler in a DEIS-ignored video. The DEIS also ignores evidence that Makah whale meat has been improperly distributed to non-Native Americans, and even transported to Canada. In spite of the ritualized token sharing of whale meat to tribal members, many didn't like the taste, and most people seemed to have quietly thrown their token share away. To compare the Makah "need" to that of the Alaska Natives is an insult to a people living in a harsh environment where the shared meat is essential to their social values and diet, and the whaling has never paused for hundreds of generations. The DEIS and Needs Statement do not demonstrate that the Makah need whale products for subsistence. Nor does the DEIS discuss the machinations with US policy, and the resultant affect on the US's relationship with other nations and treaty organizations, as NOAA attempted (and unfortunately succeeded) to have the IWC downgrade the definition of aboriginal subsistence to meet their goal of including the Makah. The science within the DEIS is biased. Overall threats to the Eastern North Pacific (ENP) gray whale population are not presented in accordance with the full spectrum of modern research. While scientists disagree on the numbers, affects and trends, the DEIS focuses mostly on the data supportive of killing whales. However, many scientists have been arguing that the ENP gray whale population may

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	not be as recovered as NOAA wants us to think, often citing chaotic and accelerating trends towards climate change. Scientific evidence of significant pressures from pollution, collapse of habitat resources, high calf mortality, oil and seismic developments, ship traffic, and anthropogenic acoustical impacts have been minimized, while controversial data on the population's "recovery" numbers have polarized some professionals. If NOAA is not aware that the 2008 gray whale population using San Ignacio lagoon was perhaps the lowest number in decades it is because NOAA has not invested in gray whale population research since 1999, and prefers to cite references and exaggerated numbers that are dismissed by most experts, including NOAA scientists. The DEIS obviously stresses positive data so as to justify the Makah Tribe's "need" to take 840 gray whales every five years, primarily from Level A and B harassment. Within that five year period 20 whales could be killed and brought to shore, and 35 whales could be struck and lost. But the DEIS fails to emphasize that, due to the in-shore nature of the recent and intended whaling, and the documented evidence of individual whales that prefer that habitat returning year after year, there is a weighted potential for the impact from the takes to be mostly on one sub-population, not the total ENP gray whale population. To be adequate, the science must quantify the probability of repeat takes and subsequent impact on this subpopulation. This quantification must also predict the probability that the struck and lost whales would either die from injury or be reproductively lost to the population. In contrast, the IWC has expressed concerns for the impacts of strikes on small populations, as related in a DEIS footnote (1-23) that: "The annual quota from this feeding aggregation (Greenland bowhead) shall only become operative when the Commission has received advice from The Scientific Committee (IWC) that the strikes are unlikely to endanger the stock." Regarding CSI's concern that the Makah will primarily hunt within a subpopulation, CSI is puzzled that the DEIS doesn't do more to argue for the Alternative to "Hunt outside areas frequented by identified whales". As suggested by many, this should be more clearly labeled as a "Hunt offshore in the actual migratory corridor". We assume the Makah don't want to venture as far to sea in power boats, with safety gear and escorts, as their forefathers did in unprotected canoes, but the DEIS support for April and May whaling in near-shore feeding sites as "designed to avoid any intentional harvest of gray whales that have been identified within the PCFA Survey area" contradicts NOAA's concern for targeting "resident" whales and the mothers and calves. This period coincides with these whales arriving in the area. NOAA knows of the public's concern for shooting "resident" whales, and harassing mothers and calves. The DEIS's dismissal of the potential for significant impacts on the public as well as on these subsets of the ENP population is simplistic and unrealistic. The DEIS is inadequate and misleading by evading full disclosure of the conflict of interest expressed by the personal relationships to the Tribe of two cited "experts". Renker, cited many times as an authority on the Makah's "need" to whale, is the wife of a Makah whaler. Sepez, cited many times as an authority on Makah culture and subsistence use of foods, has had a long-term relationship to a Makah whaler. Renker's two commissioned surveys do not prove that that Makah whaling is supported by the majority of Makah. The surveys merely found that a majority of respondents supported whaling. Only 163 of the total households responded in 2001 and only 152 responded in 2007. This correlates with an effort by a core whaling group to quell dissent by using tactics like threatening to "banish" aged members from the Tribe. The whaling faction has so intimidated everyone that few openly speak against the hunt. If someone's honest answer will bring trouble why respond to a survey, particularly if the survey is conducted not by an objective Ph.D. but by the wife of a whaler? The DEIS and Needs Analysis cannot help being inadequate by stressing selective and potentially misleading data from the two Makah household surveys, and without discussing the social and economic pressures on Makah who are either neutral or anti-whaling. Regarding the permitted use of regulated whale meat the DEIS fails to define precisely what "inedible parts" can be distributed, what constitutes "authentic articles", and how off-reservation distribution and use of whale meat will be monitored and regulated. The

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	definitions of acceptable sharing of meat based on "familial, social, cultural, or economically tied" categories require significant rewording to prevent wholesale illegal misuse of the meat. As written it is full of loopholes. To be blunt, this is the type or wording that has consistently resulted in events leading to lawsuits against NMFS for failure to enforce laws, followed by NMFS's lament that such lawsuits absorb a significant amount of human and financial resources. This self inflicted wound should not be made worse just to satisfy the Makah entrepreneurs. The discussion of potential public injury is particularly deficient in the DEIS. Not only has the over-zealous Coast Guard caused unnecessary public injury, but the DEIS seems to ignore expert testimony regarding the lethal range of the .50 caliber weapon the Makah would use. Comparative data shows alarming overlaps between the near-shore hunting the Makah have conducted and will conduct, the public use of shoreline areas for camping, the lethal range of the weapons, and the documented evidence that the whalers are not very good with their aim. CSI has commented on this DEIS in good faith, with no ill will against the Makah Tribe or its people. We feel we are correct to argue for the whales, in part because we believe that the Makah will suffer no harm by not killing whales. Many other aspects of their historic culture have adapted to the modern era: They do not keep slaves; they do not live and suffer as aboriginal people; and despite inefficient and blundering government services that leave the Tribe isolated and impoverished, the Makah do have constitutional rights and freedoms. However, the Makah have suffered harm, harm caused by the US government's continuous assertions that whaling was right and guaranteed in spite of decades of strengthening political and public perceptions that whaling is inherently wrong. From the initial efforts of the Makah to reinvigorate their culture by whaling, coinciding with considerations for the ENP gray whale to be delisted as an Endangered Species, NOAA has made every effort to assist the Makah. That effort has not always been legal, resulting in a chain of lawsuits. We have no doubt that, perhaps earlier than 1996, some misguided NOAA or BIA agents were reassuring the Makah that the Tribe would go whaling with little delay. The frustration vented by some Makah last September is well understood in this context; they have been led into this mess by their government. The ultimate question CSI requests to see addressed in the final EIS is why the US has acted in a manner that has not only brought Native Americans into conflict with their American culture and alienated them further from the wider society, but has denigrated our nation in the eyes of the international community. Within the IWC context alone, policies driven by the contrived need to achieve Makah whaling have cost the US any claim to reliably supporting, much less leading the anti-whaling movement. At IWC 60 the US vote for Greenland whaling, the misrepresentation of the 2007 Makah whaling to the Infractions Committee, and the Chair's desperate efforts to keep the Makah whaler's sentencing from the IWC media added to a long chain of misguided efforts to make believe that Makah whaling was the same as Alaska Native whaling. It is not. The Alaska Native subsistence need has little in common with the contrived Makah cultural whaling. CSI has not opposed Alaska Native whaling, tacitly accepting that the inhumane aspects of their hunt had to be balanced against issues of community survival. By aggressively rewriting the rules to allow Makah whaling as if it were the same thing, the US has knowingly aided whaling nations seeking any form of whaling they could get away with. Many long-time observers would characterize the convoluted process to enable Makah whaling, including this DEIS, as a combination of two unlikely bedfellows: Perhaps fewer than 40 Americans who wanted to kill whales found eager support from government employees, economists and strategists concerned with larger implications from emerging treaty-right issues. This odd coalition has maneuvered the entire nation into a demeaning situation that has not served the national interest, and has polluted the nation's influence.

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	CSI urges NOAA to attempt to fix the DEIS deficiencies with an objective, factual, reliable and legal final EIS. Thank you for considering these comments.
e_Ruggiero_08-15-08.pdf	I am writing to comment on the Draft Environmental Impact Statement for the Makah's request to hunt Gray Whales, and to strongly urge you to deny their request for the following reasons: 1) Section 1.2.2 states that the treaty of 1855 "expressly provides for the right to hunt whales". This is an incorrect statement. The wording of the treaty is, at best, vague. It states that "the right of taking fish and of whaling or sealing at usual and accustomed grounds and stations is further secured to said Indians in common with all citizens of the United States". This means that the Makah were expressly given the same rights as other U.S. citizens in regards to whaling. U.S. citizens are required to follow the Marine Mammal Protection Act, and therefore by the wording of the treaty, the Makah should have the same requirement without exception. This particular sentence in the treaty has repeatedly been ignored during the ongoing process of granting the Makah permission to hunt Gray Whales. This is likely due to a sense of guilt over the number of other native treaties already abrogated by the U.S. government. However, Gray Whales should not have to pay the price for the mistakes of our ancestors. Furthermore, the only reason the Makah were given a quota for Gray Whales was because of a backdoor trade with Russia exchanging part of their Gray Whale quota with part of the U.S. Bowhead quota. This trade should have been illegal under CITES. 2) The law clearly states that Washington and Oregon have some ability to limit the exercise of Indian treaty rights for conservation purposes. Gray Whales clearly fall under this category: a) Gray Whales are the only species of whale to have lost entire populations due to whaling. Two Atlantic populations have been gone for centuries and the Western Gray Whale is on the brink of extinction and listed with the IUCN as critically endangered. This leaves the Eastern Pacific population, representing a mere ¼ of the historical population, as the only viable one left in the species. This fact alone should be enough to offer them permanent protection for conservation purposes. b) A recent study by the SeaDoc Society (University of California at Davis) shows that Gray Whales are extremely important to the survival of declining seabirds. This also should be enough to offer them permanent protection for conservation purposes. c) There have been some alarming observations recently in the migration patterns of the Eastern Pacific Gray Whale. Some scientists believe that the benthic food source of Gray Whales is disappearing in the Bering and Chukchi Seas, possibly due to global climate change, and the whales are having to travel further north into the Beaufort Sea to find food. This causes them to reach their feeding grounds later and they must stay longer in order to build up enough blubber to sustain them through the winter. This could be throwing off the timing of the migration and, indeed, more calves are being born along the migration south than is normally seen. In addition, more skinny and emaciated whales are being observed in the breeding lagoons of Baja California. None of these issues have been mentioned in the DEIS but they need to be looked at more closely and scientists who study these whales at every point in their migration need to compare and share data.

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	d) There is a special group of Gray Whales that returns to Puget Sound each spring to feed on Ghost Shrimp. They appear around Whidbey and Camano Islands in March or April and remain in the area for several months before they depart for areas unknown. One of these whales, #49 "Patch" has been photographed in Puget Sound for over 20 years. John Calambokidis of Cascadia Research does not consider these 10 to 12 "resident" Gray Whales to be part of the Pacific Coast Feeding Aggregation as they have never been seen anywhere except Puget Sound. It is unclear where they are coming from and where they go once they leave Puget Sound. It is obvious that more research needs to be conducted to learn more about these whales. The possibility that one of them may be killed by a Makah harpoon is completely unacceptable. These 10 to 12 whales were not accounted for in the DEIS and nothing has been done to ensure their protection. According to the current wording of the DEIS, the death of one of these whales would not even count toward the predetermined number of whales the Makah are allowed to take from the PCFA before the hunt is stopped. This needs to be looked at much more closely. 3) The Makah claim "cultural rights" to whaling. The last two whales they took were NOT done in any traditional way, not spiritually or in the old tradition. They didn't even "use" the whale food. Slavery used to be a cultural right, child labor used to be a cultural norm. This is the 21st century and killing these gentle giants for any reasons is barbaric. 4) There is no humane way to kill a whale. It cannot be done quickly or painlessly. These are sentient animals who feel pain and quite likely grieve for one another. The explosive harpoons or grenades mentioned in the DEIS as a humane alternative are anything but. Japan and Norway, who both use these devices, report that 60% and 20% of whales respectively do not die instantaneously from these weapons. The explosive harpoons and grenades can penetrate the whale's body up to a foot before it explodes, which then tears the whale apart from the inside but doesn't always kill it. Frequently a second explosive harpoon is needed because the first one causes massive injuries and shock but not death. Dr. Harry Lillie, a whaling ship's physician in 1946 was quoted as saying "The gunners themselves admit that if whales could scream the industry would stop, for nobody would be able to stand it." I contend that the whales do scream and if we were in their world listening, we would hear it. 5) It is unsafe to use an explosive harpoon or a high caliber rifle in the areas where this hunt would be occurring. Endangered Killer Whales and Humpback Whales frequently traverse these regions. Within the last month there have been reports of Southern Resident Killer Whales swimming right by Neah Bay and Cape Flattery, with photos to prove it. These animals can literally pop up anywhere with no warning and could end up in the crossfire of a Makah hunt. With only 87 Killer Whales in this endangered Southern Resident population, the risk is unacceptable. I strongly feel that the Makah's request to hunt Gray Whales should be denied for the above reasons. However I do feel that they should be compensated for their loss in some other way, whether monetarily or with assistance in establishing another industry. But since that alternative was not considered in the DEIS the only option is vote for alternative 1: no whaling.
e_Rushkin_05-10-08.pdf	I have been following this issue for years and find it outrageous that we are considering allowing the Makah to hunt whales off the coast of Washington. There is an international ban on whaling which most countries, including the U.S. respect. I understand it was part of

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	their culture at one time and they believe it will help bring their culture back to their families and community. However, whales are a very intelligent animal that build strong family bonds (certainly stronger than many human families we see in the U.S. today). To kill them just to invoke "that's what we used to do" just doesn't make any sense. It is true the Makah used to kill whales but that was when it was necessary to provide sustenance to their community. There are numerous communities around the world that used to be headhunters and cannibals yet we don't encourage them to bring back their old ways to enhance their current community. So of course some would say there's a big difference between the two because one is killing people and the other is killing whales. But what gives us the right to make that decision. Are we really more intelligent? On average, probably yes. But I would certainly question that in many cases and it is noteworthy the great whales do not kill each other. If only we could say the same!
e_Russell_05-10-08.pdf	there almost any number of reasons I oppose whale hunting by the Makah Tribe, or anyone else, for that matter. The one uppermost in my mind is that whales are beautiful benign creatures of nature. We live in the 21st century. Killing whales isn't part of our civilized world any longer.
e_Russell_08-03-08.pdf	I am the author of "Eye of the Whale" and in the course of researching my book, paid several visits to the Makah reservation. I strongly believe that what happened this past year - the illegal hunt undertaken by tribal members - should preclude any further consideration by NOAA toward authorizing further gray whale hunting by the Makah. I uncovered evidence indicating that Japanese interests, intent upon undermining the American role at the IWC, had visited the reservation at one time and urged (if not "bribed") members to seek renewal of a hunt under their alleged "treaty right." Given that hunting gray whales is NOT necessary for subsistence of the Makah tribe (a very different situation than that faced by the native peoples of Chukotka for example), again I would like to go on record opposing this practice.
e_Sachau_05-09-08.pdf	the scandal plagued us dept of commerce noaa division has a proposal to kill whales by makah tribe. it is time for the makah to come out of the stone age.the whales are all vanishing. the makah are americans. no american of any kind should be killing whales in 2008 and beyond. none.
e_Salazar_05-18-08.pdf	KILLING WHALES IS BARBARIC MURDER! WE NEED JUSTICE FOR THEM!
e_Schanfald_06-02-08.pdf	I wish to comment on the Makah Tribe hunt of gray whales. While I respect tribal needs and understand this country has treated tribes shabbily and inhumanely and have much to be ashamed of an embarrassed, I do not believe in killing, and I do believe that marine life has been treated as disrespectfully and shabbily. The human use and disrespect for marine life and the shape the waters are currently in supports this. Here there is a situation where the Makah Tribe is split down the middle; many tribal members oppose killing the whales. I support that faction of the Tribe. I support NO killing of whales by this or any other Tribe or nation. Human beings have ruined over 50% of the marine habitat; these whales and other marine life are now as polluted as "we the people." I question the judgement of the pro-whalers, why they would want to eat contaminated gray whale meat . It makes no sense. And NOAA's support of this hunt saddles a U.S. agency with agreeing to continued pollution and illness of these people. Therefore, for the reasons of "take no life and do now harm," of disagreeing that humans rule over other life and therefore have the right to take those lives, and for not wanting to see contaminants spread from one species to another -- in this case whales to humans, I support a NO KILL policy. This should be an option and, it indeed is, the most humane and intelligent one.

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e_Schenkenberger_05-16-08.pdf	1) Please do not allow any future whaling by the Makah until they follow through on their word to prosecute the law breakers who illegally took the whale. Allowing the Makah to whale would be no less than rewarding a tribe that lies to protect it's members from lawful prosecution for a crime. 2) Also, it should be considered that the Makah abandoned whaling for more than 30 years, of their own will. Not to protect the whales, they still had the right to hunt whales, but because more money was to be made hunting seals. Early, they hunted whales for food. Later they hunted to trade whale meat and blubber with other tribes. This was not a "spiritual" quest when hunting whales for the Makah. Also, they must abandon modern conveniences and hunt them in the "traditional" way if they are to be considered sincere about needing to do this for "spiritual" purposes. Are they willing to hunt them in the same manner as their ancestors???? I think not! This is how the Makah's ancestors huntied whale and utilized them: "Hunting whales was no easy task. It was made all the more difficult by the complicated rituals that the Makah hunters would observe in preparation for their hunts. Prior to the hunt, Makah tribesman would ritually bathe themselves in the icy waters of the Pacific. They would rub their skin raw on sharp mussels and barnacles. A few days before their hunt they would often dig up a fresh grave and dismember a corpse. During the hunt the they would secure the torso of the corpse on their backs-a gesture indicating their respect for their dead brethren. On the hunt a Makah whaling crew would silently intercept a migrating whale, usually either a humpback or gray, and plunge a massive harpoon into its back. Attached to the harpoon would be a long line; attached to the line were several air bladders made of gutted seals. The hope was that the inflated seal skins would prevent the whale from diving. After the whale died, a diver would plunge into the icy water and sew the giant's mouth shut, preventing air from escaping during the tow back to the village. When the whale arrived on the beach, the whole village clamored towards the dead beast. The wives of the hunters were certainly relieved; during the entirety of the hunt they had been instructed to remain motionless in their beds, not eating, sleeping or talking. The whale meat and blubber would be divided up among the villagers according to a strict tribal hierarchy. If it was a humpback, most of the whale would be eaten. If it was a less tasty gray whale, much of the carcass would be rendered for oil. The Makah would often potlatch much of their whale meat and oil with other Nootka tribes on the western side of Vancouver Island. This active trade of whale meat, as well as fish, seal, and other sea-derived products, naturally allowed the Makah to become savvy traders when the first Europeans began arriving in the 1700s. The Makah aggressively traded whale meat and oil through the mid 1800s. In 1855, the Makah signed a treaty with Washington territorial governor Isaac Stevens. The Treaty of Neah Bay is the only Native American treaty that explicitly granted a tribe the right to hunt whales (though it also forbade them from trading whale meat internationally)."
e_Schneider-Chance_05-12-08.pdf	good afternoon - I would like to comment on Indian Whaling, per an article posted in the Seattle/PI. First may I thank you for the opportunity to comment! I am totally and absolutely against the killing of our whales in this era of our lives. Back when it was necessary for the Indians to feed their families, I am sure that is what God had intended - HOWEVER, I see no reason for the senseless killing of these beautiful mammals, other than pure SICK enjoyment of the hunters. The shameful killing of one of these mammals last year was sickening and cruel!!! Can you tell me if this was indeed the only way of feeding the tribes, did they indeed eat the meat or feed it to the dogs? Did it lay in waste on the beach or in some warehouse rotting? Times have changed, our world's environment has changed, if the Indians are indeed the stewards of the land, how can they truthfully be true to themselves with this shame on their hands?

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e_Scholtes_05-28-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. I urge you to please ban all Makah whaling.
e_Schubert_05-30-08.pdf	I have attached a letter submitted by a coalition of animal protection/conservation organizations seeking an extension in the comment deadline for the Makah Draft Environmental Impact Statement. Thank you in advance for considering this request. [There is an attached document labeled, "MakahDEISCommentExtensionRequestDraft5-30-08Final.doc"]
e_Schubert_06-09-08.pdf	Nice to meet you both last week. Since the list of questions I gave you in hard copy was not printed on letterhead, I thought I would submit a copy (attached) on letterhead so that when added to the record there would be some indication as to the organization that submitted the questions. The attached copy is identical to the copy provided to you except for the letterhead and the header at the top of pages 2 and 3. [Attachment labeled, "Draft Questions for Makah Public Meeting.doc"]
e_Schubert_07-22-08.pdf	Please find attached a request for an extension in the deadline for public comments on the Makah whale Draft Environmental Impact Statement submitted on behalf of the Animal Welfare Institute, The Humane Society of the United States, and Peninsula Citizens for the Protection of Whales. Thank you in advance for considering this request. [There's an attachment called, "Request for Extension in Comment Deadline 7-21-08 Final.doc" The email and likely the letter are addressed to Jim Balsiger at NOAA]
e_Schubert_08-16-08a.pdf	Please find attached the draft comments of the Animal Welfare Institute, Cetacean Society International, and the Earth Island Institute International Marine Mammal Project on the Draft EIS on Makah whaling. In order to submit these comments by the deadline, important issues and analyzes had to be removed from the comments or not undertaken. In addition, due to the deadline a thorough review of the comment was not possible. To remedy these issues, it would be most appreciated if NMFS would be willing to accept an amended version of this comment submitted on August 18, 2008. Thank you for considering this comment letter. [The attached letter is labeled, "DraftCommentsAugust_15Rev1.doc"]
e_Schubert_08-16-08b.pdf	Please accept this revised comment letter submitted by the Animal Welfare Institute, Cetacean Society International, and the Earth Island Institute International Marine Mammal Project on the Draft EIS on Makah whaling. Upon submitting the previous version of the comment letter, it was realized that there remained on sections of the letter that had not been completed and some formatting issues had to be addressed. AWI et al. still intends to submit an amended version of this comment letter on August 18 and requests that it, once submitted, be the official comment letter reviewed by NMFS. Thank you for your understanding. [The attached letter is labeled, "DraftCommentsAugust_15Rev2.doc"]
e_Schubert_08-20-08a.pdf	On behalf of the Animal Welfare Institute, Cetacean Society International, and the Earth Island Institute's International Marine Mammal Project I would like to respectfully request that NMFS accept the attached amended comments on the Makah whaling Draft EIS. The attached comments should replace the revised comments sent electronically to this website at approximately 1:00 am on 8/16/08 which followed submission of the original comment letter at approximately midnight on 8/15/08. As requested in the cover e-mail that accompanied the original comment letter, AWI et al. requested the opportunity to submit an amended comment letter in order to have a chance to further proof the original letter, complete certain sections of the document, correct or clarify statements/claims in the document, and to otherwise correct deficiencies in the original comment letter. This request was made in light of the urgency which had

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	to be assumed to complete the original comment letter. Please note that while corrections, additions, and clarifications were included in this amended draft, no substantive new issues were raised in this amended comment letter. Thank you for considering this request and for replacing the original and revised comment letter with the attached amended version of the AWI et al. comment on the Makah DEIS. [Attachment is called, "Final Comments on Makah EIS August 15.doc"]
e_Schubert_08-20-08b.pdf	I noticed that the Makah DEIS e-mail address is no longer valid based on a delivery failure associated with my last e-mail. I trust that my e-mail was successfully sent to you. I have attached it again to this e-mail just to be safe. Please note that the version attached to this e-mail does not include footnote 30 which was not relevant and was removed from the letter. [His attachment is called, "Final Comments on Makah EIS August 15.doc" (just like previous email's)]
e_Schultz_05-30-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Scott_05-09-08.pdf	I am a 33 year old white male. Living in everett area. I say let them take ytheir quota of whales. Granted in their treaty rights. They stopped hunting when the anilmals were marked endangered and now that they are not endangered alsw the tribe the right to again teach their young ones the ways of the tribe alow thier heritage to continue on....
e_Scott_05-12-08.pdf	ARTICLE 4 The right of taking fish and of whaling or sealing at usual and accustomed grounds and stations is further secured to said Indians in common with all citizens of the United States, and of erecting temporary houses for the purpose of curing, together with the privilege of hunting and gathering roots and berries on open and unclaimed lands: Provided, however, That they shall not take shell-fish from any beds staked or cultivated by citizens. Makah Treaty Jan 31, 1855 Isaac Stevens Gov. and Head of Indian Affairs Various Elders representing Makah and other local tribes "…in common with…": Everybody took whales then, this treaty grants the tribes the right to hunt "in common with" everybody else. As far as I know the rest of us aren't hunting whales anymore. In fact it's against the law, and as it should be.. If indeed the Makah wish to kill whales as a cultural experience, it should be required that they use the same tools, weapons and boats as used at the time the treaty was signed. Use of modern boats and firearms, exploding harpoons, etc. should not be a part of the hunt,

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	and butchering should be with ancient stone or bone hand tools. Drying and preserving the harvested flesh should also be done with the same traditional methods. Anything less negates the cultural value of the hunt, which is the basis of the Makah's reason for the hunt. If the Makah wish to use modern powerboats, rifles and whaling techniques, their permit should be denied.
e_Sender_05-10-08.pdf	Obviously the tribe cannot police its own people. The trust is broken. Their hunt is no longer tradition it is greed to win a ruling.
e_Shake_05-09-08.pdf	Please apply the "No-Action" alternative ! Do Not Let The Makah Kill Any More Whales Under Any Condition. Killing Any Whale Of Any Kind Is Just Wrong !!!
e_Shirley_05-10-08.pdf	No. I see no reason why the Indians should be allowed to hunt, hurt and kill the Whales. It is against the law, and they should not be above the law.....
e_SimonsBuss_07-03-08.pdf	My husband and I are Vashon Island residents of many years. We have been following the Makah whale hunting issue for a long time. We would like to give our full support to the approval of limited hunting of grey whales by the Makah tribe for two simple reasons. We entered into a treaty the assured them the right to hunt the gray whales and there are no longer extenuating circumstances which would call for suspension of their rights. The gray whale is no longer endangered and limited taking would not harm the species. The United States should honor its treaties. I expect that you will hear a great deal of organized and orchastrated opposition to this proposal. That is why I think you should know that there are many of us who sit on the sidelines and don't make much noise but who believe that our country should do the right thing and honor its treaty.
e_Sinclair_08-14-08.pdf	I totally oppose the Makah Tribe's proposal to return to hunting gray whales.There is nothing traditional about hunting gray whales with mechanized canoes and high powered rifles. There are certainly other ways to p reserve their cultural without threatening one of the last viable populations of gray whales.Why not teach the beauty of their history, language,religion and culture.Positive traditions. All cultures must adapt to change. We no longer need to hunt to survive. Whale meat has not been a staple in the Makah diet in ages.There is no positive value to the tribe or the public in approval of this proposal.
e_Smith_05-09-08a.pdf	I lived on the Olympic Peninsula for most of my life, and I know many members of the Makah tribe. I read about the upcoming decision regarding Makah whaling, and I felt compelled to voice my opinion. The Makah are a vibrant people who have held on to many of their cultural traditions; whaling was one of the most essential aspects of traditional Makah culture, and the tribe insisted on keeping the right to whale when they negotiated with the United States government for treaty rights and their reservation. Though I favor restriction of commercial whaling ventures that endanger vulnerable species, I strongly support the right of the Makah to take a small number of whales from their traditional waters. The tribe have been good stewards of the land; they seek to hunt whales to continue tribal traditions and strengthen their community. The article that I read suggested that NOAA was considering several options. In my opinion this option makes sense: 2. Allow killing of four whales per year on average (a max of five per year) and up to 20 whales in a five-year period. Hunting would occur from December to the end of May. The maximum number of whales struck in any year would be seven, and the max struck and lost would be three. I believe it is wise to set guidelines; I hope that the rules used will be fair to the tribe and will protect the whales from overexploitation. I urge you to allow the Makah to hunt whales in accordance with their long tradition.

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e_Smith_05-09-08b.pdf	The Makah should be allowed to hunt grey whales per their treaty rights. The grey whale population is stable. The Makah are a small tribe that poses no tangible threat to the grey whale. The Makah should not be restricted any longer. Thank you for your time and consideration.
e_Smith_05-10-08.pdf	I understand that you are soliciting comments about Makah whaling: This may be an unpopular opinion, but I believe that modern Native Americans should have to live by the same rules as everyone else in the United States (I'm part Native American, although not Makah). To do otherwise merely "enables" them, in the bad sense of the word -- it's time that *all* native peoples figured out how to live in the real world, not in the world of yesterday. And no, I'm *not* a whale lover either -- I really don't give a hoot one way or another about whales. If they went extinct I really wouldn't care (extinction is a natural part of evolution, and humans are a part of evolution too), unless it messed up some other significant thing that we humans need to survive. But having special privileges for certain groups of people seems outdated and it doesn't really help them either.
e_Smith_05-11-08.pdf	My family & I DO NOT support ANY Whale Killing!!!!!! We are 4th generational Washingtonians with Indian blood who do not support whale hunting under any conditions, traditional or not. Wildlife needs to be protected for everyone & for our future children!
e_Sorensen_05-14-08.pdf	I'm just an ordinary citizen with no special expertise in treaty rights or marine life or endangered species. So, if you're interested in the opinion of someone like me in your review, here goes. I do understand the need to honor treaty rights to native Americans, especially in view of our horrendous history. However, I am extremely disappointed that the Makah feel the need to exercise their rights in the matter of killing these whales. The following are my reasons: 1. It makes no sense from the perspective of their tribal customs, since the whale hunt was a long forgotten practice and custom, and had ceased during several decades, by the tribe's own volition, and not by the U.S. government's forcing. How can they still claim it as a cultural tradition? What makes them want to revive it at this time? It is not a proud or honorable pursuit. 2. The hunt has become anachronistic, both as an historical custom, and by the ultra-high-tech manner in which the hunt is now conducted. It brings no honor to the tribe who now takes superior weaponry and speedy transportation to the hunt, rather than the highly trained skill, time and effort by which the hunt was conducted by their ancestors. 3. In view of worldwide depletion of natural resources and protection of all species (including human), it is increasingly obnoxious to contemplate someone wanting to go out a kill these peacful, magnificent creatures who cause no harm to anyone. The whales have come to trust humans within the context of whale watching citizens who seek them out only to appreciate their beauty. Then to have these Makahs approach them and suddenly want to kill them in this brutal manner is such a betrayal of the trust we have tried to establish with them. 4. It is a public relations disaster for the Makah, to have themselves be recognized as the people who want to do these terrible things to beautiful creatures of nature. How do they think they can sell this as an acceptable native custom? They have no use for the whale meat or any other part of it. Is selling the carcass to the Japanese going to be viewed as an honorable native tradition? The world is watching, and it will be difficult to interpret their motives as an honorable cultural one. It will also be difficult to rehabilitate their image after they realize how they are viewed. 5. If the tribe wants to honor their past tradition as a whaling tribe, perhaps they can think of more constructive ways to be involved with the gray whale: encourage artistic pursuits involving the whale theme, hosting whale watching expeditions, etc. I recall that a few

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	years ago these thoughts were advocated by one of the tribe's female elders who has since passed away. Why was she not listened to? Is blood sport really necessary in this critical time, which already more destructive to nature than we can even imagine?
e_Sorg_05-22-08.pdf	On behalf of the Canadian Marine Environment Protection Society, I am writing to respectfully request that NMFS extend 90 days the comment period allowed for us to have more time to review the 900 page document regarding the Makah DEIS.
e_Spomer_05-19-08.pdf	I have been involved in the Makah whaling issue for over ten years. I have submitted comments on the previous Environmental Assessments re: Makah whaling, and, in fact, was a plaintiff in Anderson v. Evans. I fully intend to submit comments on this Draft EIS, as well. In short, my involvement with this issue is long-lived and substantial. However, given the immense size and scope of the 2008 DEIS, I respectfully request that NOAA grant a 90-day extension for public comments. There simply is too much material involved to properly research and respond to such an enormous document in such a short amount of time. The current comment deadline does NOT give adequate time to reply with substantive comments, and in fact, would deprive the public of the chance to thoroughly review the document. Given the complexity of this issue, I can think of no logical reason why the public comment period should not be extended 90 days. Should you have any comments or questions, feel free to contact me at your convenience. Thank you for your time and consideration.
e_Spomer_07-07-08.pdf	Given the rather bizarre events that transpired before and during the recent sentencing of the five Makah who illegally killed a gray whale last year, it was become increasingly difficult to submit substantive comments by the deadline set by NMFS. On one hand, you have statements attesting to the fact that the Makah Tribal Council knowingly approved- even encouraged- the illegal hunt of last September. On the other hand, comments from the Tribal Council conflict with that claim. And key players in the episode have been conspicuously silent of late, notably Bender Johnson, Jr. and Keith Johnson. I honestly believe that NMFS should extend the comment period even further to allow the public time to gather additional information regarding this bizarre series of events, and I ALSO think that NMFS should launch an investigation to find who is telling the truth here. Are the whalers and/or affiants lying? Or is the Tribal Council lying? Much rests on the truth here, and would become a very important- if not the MOST important- component of any EIS. I do not see how anyone could submit meaningful comments or information about this episode by the present comment deadline of August 15. I look forward to your reply. Thank you for your time.
e_Spomer_08-15-08.pdf	I read through the Draft EIS several times, and have one major issue with NMFS: I want those hours of my life back again. The more things change, the more they stay the same. Thus, I am recycling my PREVIOUS comment letter to you in response to NMFS' recycling of their previous work. This issue seems to have more in common with a Class B horror movie than with official government policy. In a class B movie, just when you think it is safe to relax, the zombie leaps back from the dead to terrorize the principles. Also like a poorly made horror movie, the zombie can (and will) come back just as often as the director can get away with it in the script. If he so desires, the director can have the zombie killed twenty times, but make it arise from the dead yet again and scare the audience twenty one times. It is the nature of low-brow, low-quality films to get the most bang for the buck, which usually leads to illogical, implausible plot twists to keep the audience from leaving the theater. And that's really what we're dealing with here: The Makah whaling issue is the zombie, NMFS is directing a very poorly made horror film, and the American public is being forced to "look in the basement" one more time, even though everyone watching this pathetic movie knows exactly what is going to happen when we do get down to the basement. In this particular half-witted production, the only way the public is going to get anything acceptable is for another director to step in.

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	NMFS is incapable of producing anything even remotely unbiased on this issue and should step down from any involvement with this DEIS. A documented history of bias, lying, redacted documents, moronic public quotes and blatant institutional bias leave NMFS no other choice but to step aside. However, If NMFS does continue as the lead agency in the production of this DEIS, I am convinced it will have as much "pro-whaling bias" as the original and subsequent Environmental Assessments (EA) issued in 1997 and 2001, because NMFS has never shown a willingness to take the "hard eyed look" at this issue that logic, common sense (not to mention the Ninth Circuit Court of Appeals) demands. NMFS has twice now opted for a predisposed and politically influenced finding of "no significant impact," even as the agency has lost twice in federal court in trying to justify their obviously flawed position. NMFS and NOAA have acted shamefully and have betrayed the trust of the American people for well over nine years now on this matter. It remains quite remarkable that the only reason the agency is now complying with the National Environmental Protection Act (NEPA) and the Marine Mammal Protection Act (MMPA) is because of legal action brought by concerned citizens. Said another way, ordinary citizens had to force the agency to do its job. We protest in the strongest possible manner the behavior of NMFS and NOAA to date on this issue. While paying lip service to the concept of "public involvement," NMFS and NOAA have shown a blatant and callous disregard for any opinion, comment or question that dares to cross over the "company line," namely, both agencies' biased and predisposed attitude on this issue. If you don't believe us, simply read the rulings of the Ninth Circuit Court of Appeals in the two previous court decisions, or listen to the audio recording of oral arguments in front of that same court on October 28, 2002. There, the justices noted that: "They [NMFS] switched gears because the TRIBE switched gears." (Emphasis ours) NMFS' record on the Makah whaling issue is nothing short of embarrassing: • The original EA, issued in 1997, was challenged in court shortly thereafter, and was convincingly struck down by the Ninth Circuit Court of Appeals in June of 2000. • The second EA, issued in 2001, was challenged in court shortly thereafter (again), and was convincingly struck down (again) by the Ninth Circuit Court of Appeals in December of 2002. If this DEIS is as defective in process or content as previous assessments, or displays anything other than an "objective evaluation free of the previous taint," as ordered by the Ninth Circuit Court of Appeals, we are certain that this DEIS will also be challenged in the U.S. courts, a venue where NMFS' record is not very impressive lately. Two assessments, two lawsuits, followed by two convincing losses by the federal government? Is this the perception that NMFS chooses to present to the American people? Is NMFS so stubborn and bent toward a predisposed result that they will waste the resources of the American people in blindly pursuing a course of action that makes a mockery of the public's involvement? When will NMFS get the hint that the very basic premise of their position just might be wrong, illegal and unjustifiable? What will it take for NMFS to come out and say, "Look, our position is obviously flawed, and in order to fulfill our agency's obligations to the American people and uphold federal law, we're going to take another look and see if we just plain made a mistake in promoting this whale hunt?" Interestingly, it should be noted that NMFS has found itself on the wrong end of the law on a growing number of occasions. One report concludes that ten percent of NMFS staff is involved defending the agency from lawsuits! TEN PERCENT! Also of note, NMFS is experiencing an increasing number of losses in court, as detailed in a report issued by the National Academy of Public Administration. Whereas NMFS was winning 83 percent of its cases prior to 1997, from 1998 to 2001, their record is 19 wins and 23 losses. While numbers like that will get you fired in private business and professional sports, apparently it is "business as usual" for NMFS. We think these numbers indicate an agency-wide management problem, which should be at least discussed in the DEIS.

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	The Academy concluded that “appropriate alternatives must be studied, developed and described when preparing EAs and EISs.” The Academy report also noted the following: “In recent years, NMFS’ record under NEPA has not been good. Courts have become increasingly adamant that the agency must conduct adequate EAs that consider reasonable alternatives and cannot use EISs dating back fifteen to twenty years. The cumulative effects of the many federal actions impacting fisheries must be considered.” NMFS representatives have certainly done nothing to clear the “previous taint” or “pro-whaling bias” from previous assessments, either in 1997 or 2001. On February 1, 2001, NMFS spokesman Brian Gorman stated: “One unalterable fact exists that the anti-whaling groups can't stomach. The Makahs have an absolute treaty right to whale. We can't ignore their treaty. We can't say that a large portion of the population doesn't want you to go whaling, so we are going to ignore the contract we signed with you 150 years ago." Further media reports indicate the completely expected predisposition and bias of previous assessments: “Although one of the alternatives under consideration rejects the hunt completely, there is virtually no chance the Fisheries Service will go that route.” The following memo shows yet another example of institutional bias regarding the Makah whaling issue. It should be noted that this memo was written before the 2001 Final EA was released: “National Ocean Service (NOS) Olympic Coast Sanctuary staff is finalizing the consultation process for the Makah whaling Environmental Assessment. Whaling is anticipated to resume sometime this summer.” (Emphasis ours) We are left wondering just how the NOS came to this conclusion before the Final EA was even released! On August 25, 2005, Brian Gorman again indicated the outrageous pro-whaling bias of NMFS by stating “that it might be months more to grant a waiver (after the EIS) from the MMPA” as if it were a done deal, and "the bottom line is, we support the tribe's treaty right to hunt whales. " And after the Ninth Circuit Court’s decision in Anderson v. Evans, Gorman was quoted as saying; “Clearly, we're disappointed." Disappointed? Why? Is NMFS disappointed because the Court upheld federal law? What kind of statement is that coming from the official NMFS spokesman? Could Gorman possibly be any more blatant in confirming the institutional bias in NMFS inherent to this issue? Now NMFS has the gall to ask the American people to trust them as the agency prepares a DEIS? The responsible agencies are bound here by court mandate and federal law to comply with the National Environmental Protection Act (NEPA). NEPA is the "basic national charter for protection of the environment." 40 C.F.R. § 1500.1. The fundamen¬tal objective of NEPA is to ensure that an “agency will not act on incom¬plete infor¬mation only to regret its decision after it is too late to cor¬rect.” Accordingly, agencies are obligated to “make relevant environmental information -- including ‘[a]ccurate scientific analysis’ and ‘expert agency comments’ -- ‘available to public officials and citizens before decisions are made and before actions are taken.’” The purpose of these requirements is to ensure that agencies do not use the NEPA process to “rationalize or justify decisions already made,” or take action prior to the NEPA process that “limit[s] the choice of reasonable alternatives.” Among the critical purposes of the statute are to "insure that environmental information is available to public officials and citizens before decisions are made and actions are taken," and to "help public officials make decisions that are based on understanding of environmental consequences." Id. at § 1500.1(b)-(c)

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	In determining whether an Environmental Impact Statement (EIS) is required, the agency must analyze both the "context" and "intensity" of the impacts of the proposed action. Id. at § 1508.27. As to "context," the agency must consider such factors as whether the action has impacts on "society as a whole, the affected region, the affected interests, and the locality." Id. at § 1508.27(a). As to "intensity," the agency must consider whether the action involves "[u]nique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands [and] ecologically critical areas," Id. at § 1508.27(b)(3); "[t]he degree to which the effects on the quality of the human environment are likely to be highly controversial," Id. at §1508.27(b)(4); "[t]he degree to which the action may establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration," Id. at §1508.27(b)(6); "the degree to which the action is related to other actions with . . . cumulatively significant impacts," Id. at § 1508.27(b)(7); and whether "the action threatens a violation of Federal . . . law or requirements imposed for the protection of the environment." Id. at § 1508.27(b)(10) The presence of one or more of these factors should result in an agency decision to prepare an EIS. (Public Service Co. of Colorado v. Andrus, 825 F.Supp. 1483, 1495 (D. Idaho 1993)). If, after fully evaluating these factors, an agency decides not to prepare an EIS, "it must supply a convincing statement of reasons to explain why a project's impacts are insignificant." This "statement of reasons is crucial to determining whether the agency took a 'hard look' at the potential environmental impact of a project." We are pleased to make NMFS aware of the CEQ regulations at §1508.13, which defines a "Finding of No Significant Impact (FONSI) as a document "presenting the reasons why an action . . . will not otherwise have a significant effect on the human environment and for which an environmental impact statement therefore will not be prepared." We wish NMFS in general, and NMFS spokesman Brian Gorman in particular, to take note of the highlighted term "human" and the context in which it is used. [T]o prevail on a claim that [a federal agency] violated its statutory duty to prepare an EIS, a 'plaintiff need not show that significant effects will in fact occur.' It is enough for the plaintiff to raise "substantial questions whether a project may have [a] significant effect' on the environment." (Emphasis ours) In our previous comment letters in response to previous EAs, we stated that "an Environmental Assessment alone does not properly address the issue of Makah whaling; an Environmental Impact Statement is not only necessary from a logical point of view, it is required by law. " At least NMFS is finally, if not begrudgingly, complying with at least one federal law- NEPA. It only took two orders from Ninth Circuit Court of Appeals to make that happen. It is an undeniable fact that this issue has had a major impact on "society as a whole, the affected region, the affected interests, and the locality." It is an undeniable fact that the effects of this issue "on the quality of the human environment are likely to be highly controversial." Based on two separate court rulings, it is quite obvious that this issue "threatens a violation of Federal . . . law or requirements imposed for the protection of the environment. INTERNATIONAL WHALING COMMISSION We now wish to comment in advance on what will no doubt be a cornerstone of NMFS strategy in the pending DEIS, repeatedly (and wrongly) championed in previous assessments, and stated thusly in the 2001 Final EA:

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	"In 1997, the International Whaling Commission (IWC) approved a quota of 620 gray whales for an aboriginal subsistence harvest during the years 1998 through 2002 ." This statement was misleading, is misleading and continues to be misleading. If NMFS continues to use this line in their efforts to confuse and befuddle the American people, we will continue to strongly oppose that deceptive practice. Now NMFS is stating that: "At its 2002 annual meeting, the International Whaling Commission (IWC) approved a quota of 620 gray whales for an aboriginal subsistence harvest for the years 2003 through 2007. The basis for the quota was a joint request by the Russian Federation (for a total of 600 whales) and the United States (for a total of 20 whales). The subsistence and ceremonial needs of the Makah Indian Tribe were the foundation of the United States' request to the IWC." In a low-brow horror film, this is where the door starts creaking and the sound of menacing footsteps approach. The casual reader of the above paragraph could perhaps ascertain that there was a quota for NMFS to "give" to the Makah, when it fact, that is untrue. We will document this quite thoroughly (below), but stated quite simply here, NMFS will need to do a far better (and more thorough) analysis of this crucial point in the pending EIS than it has done in the past. We suggest a good starting point for NMFS would be to tell the truth for once. It is well established that the U.S. government, at the behest of the Makah Tribe, submitted requests to the IWC in 1996 and 1997, requesting a quota of gray whales for the Makah Tribe. It is also well established that the U.S. government was forced to abandon this request at the 1996 meeting due to strong opposition from the member nations of the IWC, the Congress of the United States, and a large number of citizens, both from the U.S. and abroad. The U.S. delegation, forced to abandon its 1996 and 1997 efforts on a "stand-alone" Makah quota, was forced to resort to "back-door" dealings with the Russian delegation. The details surrounding this "Russian deal" are gradually coming to light, but it should be noted that the U.S. government has been less than enthusiastic in releasing the full story, preferring instead to parcel out various memos and notes, many of them redacted. In fact, the responsible agencies have been rather stubborn in sharing any factual evidence on this "Russian deal" whatsoever. None other than former Makah Tribal Chairman Ben Johnson, Jr. wrote: "To go to the length of negotiating with the Russian government to obtain an agreement to share the gray whale quota was remarkable..." Remarkable, indeed. Other adjectives that come to mind are "illegal" and "unethical." We are convinced, based on the small amount of information made available by the U.S. government so far, that the truth of the "Russian deal" will eventually reveal a willful and deliberate attempt on the part of the U.S. government to circumvent federal law. It's only a matter of time before the truth will come out. Typical of this subterfuge is the following e-mail: "Dr. Baker, after leaving you in Tokyo, Bob Brownell and I traveled to Barrow for what we thought were going to be fairly routine meeting with the AEWC and with representatives from Russian Native groups and the Russian Government." (PAGE AND A HALF REDACTED "The following plan has been discussed with the IWC team and all agree that it is a promising approach. If you agree, then we will take action as noted below under implementation. The U.S. proposal: In 1997, the U.S. and Russia would jointly seek bowhead and gray whale quotas which meet the combined needs of our respective Native groups for each species;" (REDACTED) "These quotas would begin in 1998 and last for as long as possible- AEWC suggested 10 years!"

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	(TWO PAGES REDACTED) "If all U.S. parties agree, then the IWC team needs to flesh out the proposal in preparation for a bilateral meeting in Russia to develop the joint proposal to IWC and agree on its bilateral aspects. In Barrow, we tentatively spoke of meeting in Moscow in July to do this." Here is another example of how the U.S. government is keeping details of the "joint quota" strategy away from the public: "The Makahs are aware that the U.S. can work with Russia and present a "combined" request with the Russian Federation at this year's IWC meeting. The Makahs are very receptive to a sharing arrangement in which they are on an equal footing with the Russian natives." (THREE AND A HALF PAGES COMPLETELY REDACTED) On a side note, I contend that NMFS has produced more redacted documents on the Makah issue then the entire federal government has produced on any number of classified or controversial issues! NMFS claims that a joint quota was given to the Chukotka and Makah tribes, but after repeated requests by conservation and anti-whaling groups, the U.S. has still not released any documentation that corroborates this claim, even though such documentation would go far in strengthening their position. The Ninth Circuit Court of Appeals addressed this issue three separate times in the December 20, 2002 opinion in 'Anderson v. Evans': • "…it appears that the IWC quota language concerning the aboriginal subsistence exception was left purposely vague. The quota issued jointly to Russia and the United States was limited to whaling by aboriginal groups "whose traditional aboriginal subsistence needs have been recognised." Conspicuously absent from this phrase is any delineation of who must do the recognizing or how." • "We cannot tell whether the IWC intended a quota specifically to benefit the Tribe. (emphasis ours) Even if timing and specificity were no problem, the surrounding circumstances of the adoption of the Schedule cast doubt on the intent of the IWC to approve a quota for the Tribe." • "Because the IWC adopted the "has been recognised" language in response to opposition to the Tribe's whaling, and because it was not a foregone conclusion that the Tribe would satisfy the definition of aboriginal subsistence whaling, the IWC's intent to approve a whaling quota for the Tribe has not been demonstrated. (emphasis ours) The "expressly provided for" requirement of § 1372(a)(2) is not satisfied." It must be noted that at this point, there exists not ONE SINGLE DOCUMENT to corroborate the U.S. government's claim of an IWC-approved "quota" for the Makah Tribe. We invite NMFS to prove us (and the 9th Circuit Court of Appeals) wrong on this matter, as much of the government's legal justification of the Makah whale hunt rests on this vital point. However, the onus is on NMFS to prove such authorization exists, NOT on the public to prove it does not. Obviously, personal opinions and vague interpretations by various individuals have been floating around for some time on this issue. However, the American public demands that the evidentiary lack must be filled from the text of IWC resolutions and the debate of record. Instead of proof, NMFS offers instead a press release crafted by the U.S. IWC delegation during the 1997 IWC meeting in which they unilaterally claim IWC approval for whale-hunting activity by the Makah Tribe. The press release states, in part; "The International Whaling Commission today adopted a quota that allows a five-year aboriginal subsistence hunt of an average of four non-endangered gray whales a year for the Makah Indian Tribe."

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	This press release is an entirely inaccurate interpretation of what actually transpired at the 1997 IWC meeting. Not only do we reject this document as misleading and utterly false; we claim that NMFS issued this press release as part of well-orchestrated campaign to mislead and confuse the American people. The U.S. claim of a "quota" via this press release is further undercut by comments in a letter from the Department of Justice regarding that document: "[The press release] is not an official document of either the federal government or the IWC. The "press release" does not represent the final official action of the IWC. This document is no more relevant to the federal decisions in this case than a newspaper article reporting on the events at the IWC." (Emphasis ours) To date, NMFS has refused to address a very specific question regarding this matter: We ask that question again here: If the one and only existing document offering "proof" of an IWC-approved quota for the Makah tribe is not recognized as an official document by the U.S. Department of Justice, nor as official action of the IWC, why does NMFS continue to insist that such a quota was given? We demand that NMFS properly address this question in the pending EA, and put a halt to the trickery and confusing misinterpretations previously (and currently) put forth to the American people. We contend that the U.S. government has absolutely no documentation to back their claim of an IWC-approved quota that could possibly apply to the Makah Tribe and challenge NMFS to produce such documentation. We further demand that such documentation be submitted, included and discussed IN DETAIL within the pending DEIS. Further, if NMFS wishes to gain the trust of the American people on this matter, they must make available the redacted documents mentioned above, as well as any other relevant redacted documents. We demand that NMFS do just that, and do so immediately. These documents MUST be made available in the pending DEIS. Why does NMFS continue to claim that their behavior and decision-making in the Makah whaling issue has been above-board and honest, yet the agency still feels compelled to redact a great number of documents associated with that issue? We would like to add that a number of member nations of the IWC have gone on record stating that they recognize a quota given in 1997 to the Chukotka people of Russia, but that they explicitly do NOT recognize any such quota given to the Makah Tribe. The Australian IWC delegation issued a statement in response to the US delegation's press release, declaring that; "The Australian delegation made it clear that it accepted the Chukotka Natives' request and claim clearly met the requirements of the… amendment in relation to the recognition of both traditional subsistence and cultural needs; whereas the request and claim of the Makah people did not." (Emphasis ours) Further in the statement, the Australian delegation questions the accuracy and, indeed, the integrity of the US delegation, especially as it applies to the U.S. delegation's 1997 press release; "The Australian delegation has noted a News Release issued by the United States delegation which claims, inter alia, that the Commission has: "Adopted a quota that allows a five year aboriginal subsistence hunt" by the Makah people; Indicated "its acceptance of the United States' position that the Makah Tribe's cultural and subsistence needs are consistent with hose historically recognized by the IWC", and "Recognised the cultural and subsistence need of the Makah Tribe."

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	"The Australian delegation explicitly rejects each of these claims as false (Emphasis ours) and as giving an entirely erroneous interpretation of both the schedule amendment as passed (with the Australian further amendment) and the decision of the Commission itself." Further comments from the Australian delegation: "Claims that the passage of the schedule amendment (as further amended by the Australian initiative) constitute an acceptance or recognition by the Commission of the validity of the Makah claims are false." (Emphasis ours "Clearly the Commission, as the only competent authority in the matter, has recognised the claims of the Chukotka Natives but not those of the Makah people." (Emphasis ours) We note also that the Australian delegation was not alone in contesting the US delegation's falsehood. The IWC delegation from the United Kingdom stated that in agreeing to the referenced quota, it "made it clear that our agreement did not imply that we accepted the validity of the case made on behalf of the Makah." (Emphasis ours) Even Dr. Ray Gambell, then Secretary of the IWC, wrote in 1997 ; "The IWC has specifically not passed a judgment on recognising or otherwise the claim by the Makah Tribe, since the member nations were clearly unable to agree." (Emphasis ours) We further note that other countries expressed grave doubt and concern over the Makah issue at the 1997 IWC meeting. Herewith are a number of comments from the minutes of that meeting: "Many delegations… referred to previous debates on this issue concerning the lack of continuation and the inability of the Makah to show that the nutritional need met the criteria required under aboriginal subsistence. They were sympathetic to the efforts of the indigenous people… but still felt that the aboriginal subsistence criteria had not been met. The strict requirements for aboriginal subsistence had not been shown." "Spain queried the legal aspects of the domestic treaty and USA international obligations under the ICRW." "A number of delegations expressed the view that the domestic obligations of the US Government were not to be considered by the IWC and should in no way affect the USA's obligations under this and other international treaties." "Many delegations drew a distinction between the (Chukotka and Makah) requests." "(Australia) called on the USA to prevent a resumption of whaling by its citizens." The Netherlands, Switzerland, Spain, Chile, Brazil, South Africa and the Solomon Islands indicated that they would not break a consensus, reservations were expressed on the Makah need." "New Zealand also supported the Chukotka request but a personal visit by the Commissioner failed to find the Makah need and was disappointed with the link between the two requests." Further, the Marine Mammal Commission has verified that a serious discrepancy exists in the U.S. claim. In reference to the 1997 IWC meeting, the Commission states that; "Other delegations at the meeting, however, were less sure that the IWC had acted to recognize the subsistence and cultural needs of the Makah and contended that the tribe was not entitled to take gray whales." (Emphasis ours) We also direct your attention to an Amicus Brief filed in the Metcalf v. Daley case, in which Chris Stroud of the Whale and Dolphin Conservation Society states: "…As a signatory to the ICRW, the USA has recognized that the IWC is the only competent body to issue quotas for aboriginal subsistence hunts, and that only the IWC can authorize an aboriginal subsistence claim through its recognition of a " needs " claim. Hence, the addition of the phrase " whose traditional aboriginal subsistence and cultural needs have been recognized "-- even without

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	the extra words " by the IWC "--should be sufficient to establish that the IWC must specifically recognize each group's aboriginal subsistence needs before it can be authorized to hunt whales." (Emphasis ours) Ex-congressman Jack Metcalf (R-WA) stated on the floor of the United States Congress: "The United States intends to take four gray whales from the Russian quota and allocate them for harvest by the Makah tribe in Washington State. However, many delegates to the IWC are now saying that they did not approve the controversial Makah proposal." (Emphasis ours) "Evidently, as I stated on the floor, on the House floor last night, the United States has tried to go through the back door by cutting a deal with the Russians and their quota, because they were facing almost certain defeat if the Makah issue were dealt with on its own merits. The U.S. delegation leader, Will Martin, stated at a press conference in Monaco that the Makah hunt had been approved. He has since been forced to back away from this statement. (Emphasis ours) This is another example of a misleading statement of fact by the U.S. delegation in Monaco. Throughout this process, they have relied on strong-arm pressure tactics, misleading information and clever propaganda to distort this issue. The Makah just have not demonstrated and aboriginal subsistence need, which is what the IWC regulations have always required. The Australians have stated that their amendment, which was added to the United States - Russian proposal was added to prevent the Makah allocation, due to a lack of demonstrated subsistence need. The Makah have claimed a cultural need as subsistence. If accepted, this will now open the door for more quota increases around the world. Japan has already stated the desire to allow four villages on the Taiji peninsula with no subsistence need to be granted a cultural quota. Iceland, Ireland, Norway, China, where will it end?" In summary, NMFS can proceed no further in either approving or disapproving whale killing by the Makah Tribe before undeniable documentation of an IWC-approved quota for such activity is released to the public and included in this process. NMFS is presently acting illegally and in violation of its obligations as a member nation of the International Whaling Commission. Indeed, NMFS has acted capriciously and with much sleight-of-hand on this issue, and we insist that the issue be addressed honestly, fully and directly. We are pleased to remind NMFS that the U.S. government may not assign its domestic aboriginal tribes the right to hunt whales unilaterally without the recognition of the IWC. The U.S. Whaling Convention Act of 1949 explicitly requires IWC recognition of subsistence need for any U.S. tribe that intends to kill whales. We add this reference to assist NOAA and NMFS in their search for further information while addressing this issue in an open, honest and unbiased manner. If NMFS cannot provide proper documentation of IWC recognition in the pending EA, then their actions on behalf of the Makah Tribe must be considered illegal. Given NMFS' extensive and continuing record of deception, political chicanery and sleight-of-hand on this issue, we regrettably anticipate further trickery at upcoming IWC meetings. It can not be stated enough times that NMFS is duty-bound to the American people (and ordered by the Ninth Circuit Court of Appeals) to address this issue openly, honestly and in an unbiased manner. We also would like to bring your attention to the assertion made in Section 2.2 of the 2001 Makah whaling draft EA, and subsequently endorsed in the Final EA; "The ICRW specifically states that the IWC may not allocate specific quotas to any particular nationality or group of whalers." We respectfully disagree. We challenge the accuracy of this statement and protest its' anticipated use in the pending EA. We insist that NMFS provide proper reference to this statement- very general references were made to this point, but not in any helpful detail.

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	The ICRW does state that; " (The Commission) shall not involve restrictions on the number or nationality of factory ships or land stations, nor allocate specific quotas to any factory or ship or land station or to any group of factory ships or land stations." Nowhere does the ICRW refer to "specific quotas to any particular nationality or group of whalers," but only to factories, ships or land stations." The 2001 Final EA is incorrect on this matter. Such generic quotes serve only to mislead the public, and deny citizens the chance to properly research and respond to such assertions. Regardless, we are pleased to share with you the fact that the IWC does, in fact, specify quotas based on nationality. We refer to an easily accessed page on the IWC web site entitled; "Catch limits for aboriginal subsistence whaling," whereby the IWC "reviewed catch limits of stocks subject to aboriginal subsistence whaling." The following limits have been agreed: "Bering-Chukchi-Beaufort Seas stock of bowhead whales (taken by Alaskan Eskimos and native peoples of Chukotka) - The total number of landed whales for the years 1998, 1999, 2000, 2001 and 2002 shall not exceed 280 whales, with no more than 67 whales struck in any year (up to 15 unused strikes may be carried over each year)." "West Greenland fin whales (taken by Greenlanders) - An annual catch of 19 whales is allowed for the years 1998, 1999, 2000, 2001 and 2002." "West Greenland minke whales (taken by Greenlanders) - The annual number of whales struck for the years 1998, 1999, 2000, 2001 and 2002, shall not exceed 175 (up to 15 unused strikes may be carried over each year)." "Humpback whales taken by St Vincent and The Grenadines - for the seasons 2000 to 2002, the annual catch shall not exceed two whales." It should also be noted that none other than the State of Washington officially reports; “The IWC aboriginal subsistence whaling category currently allows whaling by indigenous people in Russia, The United States (Alaska), Denmark (Greenland), and St. Vincent and the Grenadines.” We note with interest the minutes of the 1997 IWC meeting, which indicate; “The USA renewed its request for a quota of up to five gray whales for the Makah tribe.” This begs the obvious question: If a specific quota was not required, why was it sought? These specific examples clearly negate the U.S. government's assertion (Section 2.3) that a joint quota "is the only mechanism by which the Commission recognizes the needs of an aboriginal group…" This assertion is misleading and utterly false. Apparently, NMFS would have the American people believe that the IWC may not issue quotas to any particular group or nationality, yet the record indicates the U.S. government sought exactly that at the 1997 IWC meeting. The U.S. abandoned this effort in favor of subterfuge only when it realized that it would fail. We again state that we are still investigating the circumstances surrounding the "Russian deal" and, based on the small amount of information made available by the U.S. government so far, are convinced that the truth of the "Russian deal" will reveal a willful and deliberate attempt on the part of the U.S. government to circumvent federal law. The record also indicates that quotas based on nationality are not only allowed, they are commonplace. They are also commonly referred to by any number of governmental bodies and authorities. Further documentation reveals the true nature of the US government’s activity in obtaining a specific quota for the Makah Tribe. Again, the U.S. government’s argument carries no weight and raises the glaring, obvious question: If a specific quota was not required, why was it sought?

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	We direct your attention to the following documents, which clearly indicate that a specific quota was not only sought by the U.S. government, such a quota was considered vital: "…Notwithstanding these points, we are willing to seek IWC approval for our interim ceremonial and subsistence whaling proposal…" "Shall we seek IWC approval of a U.S. gray whale hunt? …the IWC has never given the U.S. a gray whale quota… the United States told the IWC in 1990 that it had no further interest in taking gray whales." "NOAA, through the U.S. Commissioner to the IWC, will make a formal proposal to the IWC for a quota of gray whales for subsistence and ceremonial use by the Makah Tribe." "NMFS is promulgating a proposed rule to revise 50 CFR part 230… it proposes to broaden the current mechanism for regulating whaling authorized by the International Whaling Commission (IWC) to allow for the future possibility that the IWC would grant quotas to the United States for Native American groups other than the currently authorized Alaska Eskimo Whaling Commission." (Emphasis ours) Are we to believe that the DEIS will speak truthfully on this matter when, in fact, the actions of the U.S. government indicate that it is knowingly being less than truthful? And are we to believe that NMFS' assertion in the 2001 Final EA that "The U.S. delegation has never discouraged other countries from raising the (Makah) issue" is truthful, when, in fact, a number of first-hand accounts indicate otherwise? How does NMFS explain away the words of none other than Makah attorney John Arum, when he stated openly, publicly and on the record in front of the Ninth Circuit Court of Appeals that "There is some ambiguity about what the IWC did" and that the Makah Tribe "did not" receive "explicit" approval from the IWC? The wholly unresolved question of any IWC-approved quota spotlights the most glaring and fatal defect underlying the actions and history of the U.S. government on this issue. The question of IWC approval and recognition of the Makah whale hunt MUST be clarified and documented before the U.S. government proceeds further on this issue. In summary, NMFS' previous assertions that the IWC may not allocate specific quotas to any "particular nationality" or "group of whalers" are entirely and utterly false. We have shown that such quotas are not only allowed, but are routine enough to be displayed prominently on the IWC web site. We have also shown that the U.S. government sought exactly just this kind of quota at the 1997 IWC meeting. LOCAL IMPACTS The pending EIS must do a far better job of addressing the impact of the Makah whale hunt on the people of Clallam County, the economy of the area, and the shocking impact it has had on the lifestyle of the citizens of Washington state. Indeed, in the 2001 "Public Comments to Draft EA" attachment, NMFS fails to spell the word "Clallam" correctly even one time, although they corrected it later. The 2001 Final EA states that the Makah Tribe has a treaty right to "continue whaling at its usual and accustomed grounds." We disagree, and challenge the use of this kind of misleading statements in the pending assessment. The court ruling in 'Anderson v. Evans' clearly shows the statement is untrue. NMFS must not continue to state such opinions as fact in the pending EIS. Trust us: we will be reading every sentence. The Makah Tribe had abandoned all whale killing at its "usual and accustomed grounds" by the early 20th century, a hiatus of some seventy-three years before they killed a three-year old juvenile gray whale in 1999. And in response to NMFS' assertion that the Makah abandoned whaling because of alleged pressure from non-tribal commercial whaling activities, there is evidence that the Makah

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	abandoned their whaling activities in order to take part in the more financially lucrative activity of sealing. The historical context of the Makah whaling abandonment needs to be researched and discussed in detail in the DEIS. POTENTIAL COMMERCIAL WHALING We also point out that the Makah leadership has repeatedly stated that they assert a right to kill whales for commercial purposes. Having been given the opportunity to retract or abandon that position, they have steadfastly refused to do so, and the public record indicates that this is still the Makah Tribe's official position. The possibility of commercial whaling by the Makah Tribe must be thoroughly dealt with before the U.S. government proceeds further. NMFS states in the 2001 Final EA that "The (Makah) Tribe has renounced any interest in commercial use of the products of any subsistence hunt through the year 2002." We are not comforted with the wording of that terse (and now expired) line. For example, an e-mail from a NMFS employee states: "We never spoke again about the problems of Washington State indians wanting to take gray whales. Yesterday, Doug DeMaster told me that it is his understanding that the indians want to sell the meat to the Japanese. Do you have any information on the Japanese sales?" Another one states; "Joe Scordino informed me this am that, some while ago, Rollie Schmitten had signed a letter setting policy regarding the NW Treaty Tribes' rights to take marine mammals for ceremonial and subsistence purposes. I believe that this would establish the basis for working with the Makahs on an IWC aboriginal subsistence whaling proposal for use at a future Commission meeting. I am told, however, that Rollie's letter does not address the commercial use of marine mammals and that this issue remains open." (Emphasis ours) The Makah Tribe has publicly stated; "It should be emphasized, however, that we continue to strongly believe that we have a right under the Treaty of Neah Bay to harvest whales not only for ceremonial and subsistence but also for commercial purposes. Our decision to seek IWC approval for an interim ceremonial and subsistence harvest only should not be construed in any way as a waiver or relinquishment of our treaty-secured whaling rights." Currently, the Makah Whaling Management Plant states; "It is the Tribe's intent to provide for the gradual development of ceremonial and subsistence whale hunts over the five-year period so as to allow for the development of Tribal management capabilities, refinement of hunting methods, and assessment of the Tribe's cultural and subsistence needs. The Tribe intends to utilize the experience and information collected during the five-year term of this plan to develop a second multi-year plan, pending IWC review of the current ICRW Schedule. The conservative management approach provided for in this management plan is not intended to limit, waive or modify any of the Tribe's whaling rights under the Treaty of Neah Bay and any such construction of this plan is improper and unauthorized." The pending assessment must address the issue of any future proposal that might be presented to the IWC. The future whaling ambitions of the Makah tribe- and whatever form they might take- must be considered and accounted for in this assessment. That must included a detailed analysis of any commercial ambitions by the Makah Tribe. One indication of future Makah whaling ambitions is indicated in the following e-mail: "The time period for the quota would possibly be the fall hunt in 1996 plus all of 1997. The Makahs don't want to get "locked in" to a three-year block, because they might soon want more than five a year." (Emphasis ours) But most telling of all is this report: "The Makah contemplate a year-round hunt and do not wish or intend to whale only during the spring or fall migration period. In particular, they wished to take at least one whale in August for their "Makah Day" celebration. This implies that the Makah could kill resident whales what are the basis of whale watching operations in the Seattle area."

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	"The Tribe agreed that it would not sell the whale meat for the duration of the cooperative agreement. This includes agreement that the meat would not be sold in restaurants. It was clear, however, that it wished to keep this option open for the future." (Emphasis ours) Were the Makah Tribe to kill whales for commercial purposes, it would be in direct violation of the 1855 Treaty of Neah Bay, where the Tribe is forbidden to trade outside of the United States. As the commercial use of whale products is forbidden in the United States, that would leave the Makah Tribe only the option of trading with foreign countries. This practice would be in violation of any number of international, federal and state laws. One federal law that comes to mind immediately is the Marine Mammal Protection Act (MMPA). Such practices would also be in violation of the international moratorium on commercial whaling, of which the United States is a party through the IWC. If the Makah are allowed to kill whales for commercial reasons, it would also gravely jeopardize the United States' position within the IWC. Certainly, NMFS should require that the Makah tribe promise in a contract- one then made accessible to the American public- that the Makah tribe will not engage in any commercial whaling before the agency pursues this issue further on their behalf. It is difficult to believe that NMFS continues to advocate for the killing of whales by the Makah tribe on one hand while promising to the American people that no commercial whaling will be done on the other hand, even as NMFS refuses to ascertain whether that is, in fact, the position of the Makah tribe. Of significant importance is whether such a contract would bar commercial whaling activity only through the time period addressed in the pending assessment, or if it would, in fact, bar commercial whaling for an extended period of time. To summarize, it is entirely implausible for NMFS to continue to maintain that the Makah would kill whales only for cultural and subsistence purposes, when in fact, the Makah continue to state that they have the right to commercially kill whales, and fully intend to do so. This must be resolved openly, honestly and in an unbiased manner in the pending EIS. HUNTING ON OTHER WHALE SPECIES BY MAKAH TRIBE NMFS must fully address a newly raised issue, namely that of an expanded hunt by the Makah tribe on other whales species. Makah official Dave Sones recently submitted a funding request to Rolland Schmitten. In this letter, Sones wrote: "The Makah Tribe submits this request to purchase a Marine Research and Enforcement Vessel… This research boat will contribute to existing and additional studies that provide important information on the status of gray whales other whales and marine mammals to maintain the Tribes (sic) scientific and cultural relationship with these species. These scientific studies are needed for the Tribe's preparation of actual litigation threatened by non-governmental organizations against the Tribe's exercise of its treaty right. " We questioned why the Makah Tribe was in need of an ocean-going vessel capable of operating in "rough seas 40 miles off the Pacific coast, along the continental shelf, rich in many species of whales and other marine mammals…" We questioned exactly with which species the Tribe wishes to enable a "cultural relationship" at that distance from the coast, and to NMFS' credit, this request was denied, with the exception of some relatively smaller funding for "other" purposes. These kinds of funding requests (and responses) must be included in the pending EIS. Other questions to be answered are if the Makah Tribe continues to request funding for whaling-related salaries, when NMFS itself promises in the 2001 Final EA that "NOAA regulations and the Makah management plan stipulate that no person may receive money for participating in whaling. The Tribe has given assurances that it will not make payments to the crew for whaling or associated activities in the future." (Emphasis ours)

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	TAXPAYER BURDEN OF ILLEGAL WHALING BY MAKAH TRIBE Given that the American public has spent over $5 million in direct and indirect costs on the Makah whale hunt thus far, we demand that NMFS more fully account for the expenditures of federal, state and local funds that have supported this hunt since at least 1995. How much has the Coast Guard spent? How much has local law enforcement spent? How much money has the several legal actions cost the federal government? In other words, how much has this whale hunt cost the American taxpayer from inception until present? This very basic question must be addressed fully in the pending EIS. VALIDITY OF "NEEDS STATEMENTS" In the original and subsequent Needs Statements, authored by Ann Renker, are many claims and promises. We would like NMFS to thoroughly discuss and review the legitimacy and accuracy of these Needs Statements before throwing more taxpayer money into ANOTHER Needs Statement. In other words, do the facts bear out Renker's claims and conclusions in these Needs Statements? Given that NMFS and the Makah Tribe will depend heavily on a Needs Statement at upcoming IWC meetings, we demand to see just how accurate these Needs Statements have been. And we vigorously disagree with NMFS' assertion in the 2001 Final EA that "The IWC granted the gray whale quota on the basis of this needs statement." Primarily, it must be noted that the IWC did not grant a quota. Secondly, the majority of member nations at the 1997 IWC meeting soundly rejected the needs statement. MARINE MAMMAL PROTECTION ACT The mere fact that NMFS is attempting to champion a waiver for the Makah Tribe is stunning and unprecedented. Never has any person or group been granted such a waiver. Indeed, as a leading scientist notes; "This could absolutely be precedent-setting," said Naomi Rose, a marine mammal scientist with the Humane Society of the United States, one of several plaintiffs that succeeded in court in delaying the tribe's hunts. "If they win (a waiver to the law), it's not just the Makah that will be impacted," Rose added. "This will lay the ground rules for anyone who tries to seek an exception to go whaling in the future." We challenge NMFS' continuing position, detailed in the 2001 EA; "Although gray whales are also protected under the MMPA, Section 113 of the MMPA specifically states the provisions of the MMPA are in addition to, and not in contravention of, existing international treaties, conventions or agreements." Further, "The Makah Tribe believes that the whaling provisions of the Treaty of Neah Bay have never been abrogated and that the U.S. obligation to the Tribe takes precedence over U.S. obligations under the ICRW." This topic must be more fully addressed in the pending DEIS. It was difficult to respond to these assertions when the 2001 EA made no reference to the source for them. It appears that NMFS is continuing to insert very generalized statements in an effort to mislead and confuse the American public. We are also troubled by the fact that the U.S. government still feels compelled to support whale killing by the Makah Tribe based on what the Tribe "believes." Surely there must be some documentation to support the US government's position other than what the Makah Tribe "believes." The Makah Tribe is not exempt from MMPA. Perhaps the most glaring problem (and associated convoluted logic) for NMFS in its continuing efforts on behalf of the Makah tribe is the Marine Mammal Protection Act (MMPA), but the Ninth Circuit Court of Appeals cleared that right up for NMFS, did it not? The MMPA represents Congress's most expansive explication of the nation's commitment to the "protection and conservation" of whales and other marine mammals.

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	The MMPA imposes a moratorium on the taking and importation of marine mammals and marine mammal products. The MMPA did, however, provide a limited number of exceptions to the moratorium, a waiver procedure, and a conditional exemption for native Alaskan subsistence takers. Neithr the moratorium nor the waiver process apply or have been used by NMFS to justify the Makah hunt until now. It is their last resort- a “Hail Mary” play at the end of the game, which for all intents and purposes, is nothing more than a desperate exercise to promote one agenda over the long-term health and stability of the MMPA. The native Alaskan exemption is inapplicable to the Makah hunt because this provision only covers taking by "any Indian, Aleut, or Eskimo who resides in Alaska and who dwells on the coast of the Northern Pacific Ocean or the Arctic Ocean." Neither NMFS nor the Makah Tribe has successfully explained why whaling activities by the Washington state-based Makah Tribe might be included within this exemption. To the contrary, NMFS has failed a number of times to explain whether or not the MMPA abrogates the whaling rights claimed by the Makah under the Treaty of Neah Bay. Indeed, NMFS cannot explain this even to themselves, as the following e-mail to D. James Baker, former NOAA administrator, states: "The Tribe has a treaty with the United States giving it rights to whaling. It is not clear whether the domestic treaty or the later international treaty establishing the IWC takes precedence." (Emphasis ours) (THE NEXT FIVE PAGES ARE COMPLETELY REDACTED) Given NMFS’ continuing penchant for redaction, how, then, does the American public determine the truth in this matter? NMFS’ confusion is clear in that memo, but it is of note that the agency maintains their current interpretation of this issue on the NMFS web site, as follows: "The Act's moratorium on taking does not apply to taking by any Indian, Aleut, or Eskimo who resides in Alaska and who dwells on the coast of the North Pacific Ocean or the Arctic Ocean if such taking is for subsistence purposes or for creating and selling authentic Native articles of handicrafts and clothing, and is not done in a wasteful manner." (Emphasis ours) The Olympic Coast National Marine Sanctuary apparently has had an equally troubling time determining the alleged validity of the Makah treaty: “NOAA recognizes that, given the standard for abrogating treaty rights enunciated by the Supreme Court in United States v. Dion, 476 U.S. 734 (1985), the provisions of the MPRSA do not abrogate the coastal Tribes' treaty fishing and hunting rights. However, it is unclear whether Congress intended the MMPA and the Endangered Species Act (ESA) to abrogate these rights.” (Emphasis ours) However, at least one NMFS employee has a very clear understanding of the relationship of the MMPA to Native Americans, as the following testimony indicates: "Section 119 (of the MMPA) states that cooperative agreements may be entered into with ANOs (Alaskan Native Organizations) to conserve marine mammals and provide for the co-management of subsistence use by Alaskan Natives." We ask NMFS to note the singular emphasis on the term “Alaskan Natives” in the context of cooperative agreements. We also encourage NMFS to refrain from such indefensible positions as stated in the 2001 “Public Comments to Draft EA”, specifically: “The Marine Mammal Commission is on record as not taking issue with the conclusion that the treaty rights of the Makah may not have been abrogated by the MMPA (letter from John Twiss to D. James Baker, September 4, 1997) It must be made clear (and acknowledged in the pending DEIS) that Congress, and Congress alone, has the power to abrogate treaties. Whether or not NMFS, NOAA or the Marine Mammal Commission thinks that Makah treaty rights “may not have” been abrogated is of

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	no consequence. One need only investigate the intent of Congress to obtain a definitive answer. We find it incredible that we must remind NMFS of this basic fact. The standard of Congressional abrogation is found in United States v. Dion. The court ruled that Congress enacted a "sweepingly framed" prohibition on the hunting of eagles except for limited Native American religious purposes enumerated under the Bald and Golden Eagle Protection Act (BEPA). The Court reasoned that "the provision allowing taking of eagles under permit for religious purposes of Indian tribes is difficult to explain except as a reflection of an understanding that the statute otherwise bans the taking of eagles by Indians…" The Court concluded that the BEPA had in fact abrogated Indian treaty rights. The relationship between the MMPA and the Makah treaty is identical. The MMPA provides an absolute ban on the taking of marine mammals except by "…any Indian, Aleut, or Eskimo who resides in Alaska and who dwells on the coast of the Northern Pacific Ocean or the Arctic Ocean," conditions the Makah Tribe clearly does not meet. Hence, under MMPA, and like the BEPA, "Congress… considered the special cultural and religious interests of Indians, balanced those needs against the conservation purpose of the statute, and provided a specific, narrow exception that delineates the extent to which Indians would be permitted to hunt… " The Makah Tribe's legal representative has stated; "In sum, the Court concluded that the Bald Eagle Protection Act represented an "unmistakable and explicit legislative policy choice that Indian hunting of the bald or golden eagle, except pursuant to permit, is inconsistent with the need to preserve those species," and therefore abrogated Indian treaty hunting rights." Accordingly, the claimed whaling rights by the Makah Tribe were abrogated by the MMPA just as the Sioux Tribe's hunting rights were abrogated by the BEPA. None other than the Solicitor General of the United States has stated; "The BEPA and ESA are general statutes which, by their terms, do not exclude Indians from their coverage. Indeed, by creating certain exceptions… Congress indicated its intention that the restrictions of both Acts apply to Indians. To hold otherwise would render these carefully limited exemptions meaningless." In footnotes to the same brief, the Solicitor General also adds; "As we explain in our opening brief (at 30), the Alaskan native exception was enacted in response to the Alaskan natives' unique dependence on species, such as the bowhead whale, likely to be regulated under the ESA. See 119 Cong. Rec. 25677 (1973); see also Cong. Rec. 8400-8401 (1972) (describing a similar exception for Alaskan natives under the Marine Mammal Protection Act, 16 U.S.C. 1371(b)." (Emphasis ours) The Makah tribe has put forth a rather feeble defense of the alleged Makah whaling treaty right based on several salmon and fishery-related issues. But we find no instance in which both NMFS or the Makah Tribe has responded in a meaningful way to queries regarding the legal quandary posed by the MMPA, and there is no substantive dealing with this issue in the 2001 Final EA. Even the Ninth Circuit Court of Appeals weighed in on this issue in the December 20, 2002 opinion in 'Anderson v. Evans': "We do not believe that Congress subordinated its goal of conservation in United States waters to the decisions of unknown future foreign delegates to an international commission." Then, any questions that NMFS may have on whether the MMPA supersedes any claimed preference by the Makah Tribe was laid firmly to rest once and for all with a string of very clear statements: "The federal defendant's view so clearly offends the express, unambiguous language of [the MMPA] (emphasis ours) that the statutory interpretation offered by NOAA and the federal defendants cannot properly be afforded deference…"

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	"…it must be assumed that Congress intended to effectuate policies for the United States and its residents, including the Makah Tribe, (emphasis ours) that transcend the decisions of any subordinate group." "To effectuate the purpose of the MMPA… we conclude that the MMPA must apply to the Tribe, (emphasis ours) just as it would apply to any other person within the jurisdiction of the United States." Still not satisfied? This one will clear up all doubt: "The Tribe has no unrestricted treaty right to pursue whaling in the face of the MMPA." (Emphasis ours) In short, NMFS has failed to explain how the Makah Tribe's treaty rights can possibly supersede the MMPA, which clearly demonstrates Congress' "narrowly written exceptions for Alaskan Indians." NMFS has also failed to explain how Makah whaling is permitted under the MMPA even while U.S. courts have held that nearly identical statutes "virtually require the conclusion that Congress intended the Act to cover Indian activities." NMFS has never adequately explained their position that the Treaty of Neah Bay was not abrogated by Congress's "specific, narrow exception" to the MMPA, which quite obviously does not include the Makah Tribe. NMFS must either fully defend their position- or abandon it- in the DEIS. Regardless, NMFS must do so openly, honestly and in an unbiased manner within the pending assessment. Most importantly, the pending DEIS absolutely must fully explore what, if any, treaty rights the Makah have to hunt whales in light of the particular language in the treaty, how that and similar language has been construed by federal courts, and how that language applies to a situation where the hunting of whales has now been generally prohibited by federal statute. OLYMPIC COAST NATIONAL MARINE SANCTUARY Killing gray whales within the boundaries of the Olympic Coast National Marine Sanctuary (OCNMS) is inconsistent with the public acceptance of the term "Sanctuary." No authority exists that would allow OCNMS personnel to permit hunting of ANY marine mammal species within the borders of the Sanctuary. The hunting of marine wildlife in Sanctuary waters by any parties must not be permitted. Additionally, whale killing using modern methods was not identified as an acceptable activity in the development of OCNMS policies nor during the inception of the OCNMS. Further, in light of the Anderson v. Evans opinion, the OCNMS must re-evaluate its present position on hunting activity within the borders of the Sanctuary by the Makah Tribe or any other party. It is our opinion that OCNMS regulations ban the illegal hunting of marine mammals, and the recent court opinion (re: the MMPA and the Makah Treaty) obviously clarifies the fact that any hunting within the Sanctuary is illegal. OCNMS Regulations state: "Taking any marine mammal, sea turtle or seabird in or above the Sanctuary, except as authorized by the Marine Mammal Protection Act, as amended, (MMPA), 16 U.S.C. 1361 et seq., the Endangered Species Act, as amended, (ESA), 16 U.S.C. 1531 et seq., and the Migratory Bird Treaty Act, as amended, (MBTA), 16 U.S.C. § 703 et seq., or pursuant to any Indian treaty with an Indian tribe to which the United States is a party, provided that the Indian treaty right is exercised in accordance with the MMPA, ESA and MBTA, to the extent that they apply." "Possessing within the Sanctuary (regardless of where taken, moved or removed from) any historical resource, or any marine mammal, sea turtle, or seabird taken in violation of the MMPA, ESA or MBTA, to the extent that they apply." In this case, it is very obvious that the MMPA DOES apply. The entire relationship of claimed treaty hunting rights and Sanctuary policy must be fully addressed. LACK OF COOPERATION BY THE MAKAH TRIBE

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	The 2001 Final EA stated in relation to the Metcalf v. Daley decision and subsequent order to rescind its cooperative agreement with the Makah Tribe; "The Makah Tribe responded on August 31, 2000, that it does not accept NOAA's rescission of the agreement." The Makah Tribe did not accept an action that was ordered by the United States Ninth Circuit Court of Appeals? It is beyond our comprehension how a U.S. government agency can continue to be involved in any way with a party that refuses to honor the laws of the United States. Bound by an order of the Ninth Circuit Court of Appeals in July, 2000, NMFS did, indeed, rescind the cooperative agreement. However, the Makah Tribe simply refused to abide by the ruling of the Ninth Circuit Court of Appeals. The failure of the Makah Tribe to abide by the decision of the court, flaunting the laws of the United States, is troubling enough. However, it is beyond comprehension that here NMFS proceeds yet again on their behalf. This demonstrates a continuous and repetitive institutional bias of NMFS toward the pro-whaling agenda of the Makah Tribe. How can the American people trust NMFS in what should be an unbiased process, when NMFS has done everything within its power to yet again achieve a goal that has reeks of bias and predisposition? The willingness of NMFS to yet again advocate for the wishes of the Makah Tribe, even as that Tribe has previously defied the agency, the United States courts, and a lawful order of the court, is beyond belief. The continuing bias inherent in this issue- and the nonchalant attitude of the Makah Tribe to the legalities thereof- is best summed up in a statement from Makah attorney John Arum, who stated; “The Makahs are participating in the [EA] process “primarily for PR.” (Emphasis ours) And in regards to the fact that the MMPA supersedes the Treaty of Neah Bay, Makah attorney John Arum could only reply “we just think it’s unfair. ” No, John. It’s the law. In addition, the events of September, 2007 should make it painfully clear to anyone with an open mind that the Makah Tribe can NOT be entrusted to honor or carry out even the simplest of “management plans.” A THROUGH INVESTIGATION must be conducted re: the Makah Tribal Council or individual Council members’ complicity in approving the illegal whale hunt with a “wink and a grin.” While NMFS may be safely tucked away behind vast government walls, some of us that actually LIVE in this area were made aware right at the beginning that Council members WERE complicit in allowing this hunt to take place. Some of us ALSO know that NMFS will conveniently sweep this issue under the carpet, and no more shall be said about it. I would be pleasantly surprised… shocked, even… to see this issue dealt with substantively. MANAGEMENT CONCERNS In regard to IWC regulations, one other matter that needs serious discussion is NMFS’ statement in the 2001 “Public Comments on Draft EA” where the agency states: “NOAA agrees that it is not possible to ensure that a humane death occurs during a hunt.” In regard to the Makah Tribe’s Whaling Management Plan, NMFS must ensure that any changes made said plan must be made public, preferably in the Federal Register. We noted a large number of changes to the Plan over the past several years, most of which passed without attention, without comment and with no questions asked. At no time in the past or in the present has NMFS seriously considered the situation of Washington resident whales. At various times in the past decade, both NMFS and Makah officials have denied even the existence of Washington resident whales, even as well-known gray whale experts continue to express concern over this sub-population.

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	We insist that the word "resident" be used when discussing these whales in the pending EIS, as the vast majority of concerned citizens refer to these gray whales as such. It is notable that the Makah tribe has never shown an ability to differentiate between a migratory gray whale and a resident gray whale. The Makah Tribe has been aware of the existence of a resident gray whale population for many years, and this 1996 e-mail certainly points out that they were concerned about the impact they might have on the resident population: "We request that NMFS-Northwest Region implement this (gray whale) research program cooperatively with the Tribe so that mutual needs can be addressed. In particular, we would like to gain information to allow us to avoid harvesting the non-migrating whales." PRECEDENTIAL IMPACTS The record is replete with news items and documentation of other tribes (both U.S. and Canadian) who may wish to pursue whale killing in the future. This must be addressed fully, openly and honestly in the pending assessment. NMFS continues to mislead the American people in claiming that Makah whaling will not lead to similar precedents in other tribes. This assertion has been proven wrong by continuing reports in the Canadian media that the Nuu-chah-nulth Tribe of British Columbia has initiated plans to emulate the Makah hunt, and that they would begin potlatch ceremonies to assist the Makah tribe in trading whale products outside of the United States. The World Council of Whalers is certainly eager to begin hunting up to one thousands whales per year, according to spokesman Tom “Happynook” Mexsis. Interestingly, the World Council of Whalers has had previous (and enduring) contact with the Makah Tribe. Indeed, one intriguing item begging for further research appears prominently on the World Council of Whalers website: "In this spirit of community and cultural need, the Alaska Eskimo Whaling Commission (AEWC), a co-management/support organization for Eskimo whalers, assisted the Makah nation in acquiring its gray whale quota from the International Whaling Commission (IWC). This was made possible through the generosity of the Alaskan Eskimo whalers, who agreed to share their bowhead quota with the Chukotkan whalers, who in turn provided the Makah gray whale quota from their own.” (Emphasis ours) That is truly a remarkable claim, one never before addressed by NMFS in ANY EA, EIS or public process. In fact, NMFS has denied (and continues to deny) that there was a “trade” of any kind, between any party, for any species. What exactly happened up in Barrow during those meetings? NMFS needs to release a great number of redacted documents to shed light on the facts surrounding these events. The Ninth Circuit Court of Appeals ALSO addressed this issue in ‘Anderson v. Evans’: “…we cannot agree with the agencies’ assessment that because the Makah Tribe is the only tribe that has an explicit treaty –based whaling right , the approval of their whaling is unlikely to lead to an increase in whaling by other domestic groups. And the agencies’ failure to consider the precedential impact of our government’s support for the Makah Tribe’s whaling in future IWC deliberations remains a troubling vacuum.“ (Emphasis ours) These issues certainly should be further investigated before the U.S. government proceeds further on behalf of the Makah Tribe. The possibility of the Makah actions weakening international whale protection laws and trade regulations should be of paramount importance to NMFS. PUBLIC SAFETY The 2001 Final EA does not fully address the impact on humans (pun not intended) of the use of a .50 caliber anti-armor rifle by the Makah Tribe in their whale-killing activities.

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	Of all the issues neglected in the past, the use of a .50 caliber rifle by improperly trained persons with known histories of substance abuse and domestic violence aboard a pitching, rolling small boat seems to rank right at the top. The dangers presented to persons both aboard vessels and on shore need to be substantively addressed in the pending assessment. The U.S. government has long maintained that the .50 caliber weapon would not adversely affect anyone outside of a 500-yard circle (hence the U.S. Coast Guard's RNA). However, documentation has recently come to light that disproves that notion. The Royal Canadian Mounted Police mentioned concerns about the weapon as early as 1998, when it stated that; "It's a powerful weapon, and its bullets can travel quite a distance." In a recent letter, noted ballistics expert Ray Kline states: "As this SDZ shows, NO firings should be conducted within 6100 meters of the shoreline or any surface vessel. Restricting firing away from the shoreline is NOT a solution since a ricochet can travel almost 1700 meters off the line of fire and, carelessness and inattention could easily result in a bullet being fired in the general direction of the Peninsula." A local anti-whaling group responded immediately: "After being made aware of the very real dangers involved with the firing of a .50 caliber weapon (and other large caliber and experimental weapons and ammunition) on inside waters, local and state governments have a duty to protect their citizens…. At a minimum, the local and state governments of Washington State and the Canadian Government should demand that the United States Federal Government prepare an Environmental Impact Statement (EIS) to address this very serious issue of public safety. It could be a matter of life and death to citizens of Washington and Canada." We agree whole-heartedly. The use of an anti-armor weapon (and ammunition) by whale-killers in such close contact with persons aboard vessels and on land is a topic that must be dealt with in the pending EIS. News clippings and videotape from previous Makah hunts clearly show that the Makah many times were hunting very close to shore. Videotape from the May 1999 hunt clearly shows at least one .50 caliber projectile ricocheting off of the water. We find it unconscionable that the U.S. government would act in a manner to potentially place in grave danger many thousands of residents, visitors, boaters, campers, hikers and children within the "danger zone" of the .50 caliber weapon. During the September, 2007 illegal whale hunt, it is plainly clear that Makah whalers were operating their rifles in an unsafe manner-unsafe to themselves AND anyone who happened to within range. It is beyond belief that NMFS wishes to give carte blanche to a group of whalers that were forced to cease fire ONLY under direct orders of the US Coast Guard. In light of the September, 2007 illegal whale hunt, any NMFS official who still maintains that the Makah Tribal Council and/or Makah individual whalers are responsible, law-abiding, respectful and trustworthy should SERIOUSLY consider submitting themselves for immediate drug testing. ILLEGAL USE OF WHALE PRODUCTS We do not agree with NMFS' previous assertion that "almost all edible portions of the meat and blubber were removed from the whale by tribal members. Videotape (available widely) indicated that, in fact, there were times where NO Makah tribal members were present, leaving NMFS employees the duty of overseeing and performing the removal. We also do not agree that "[T]he meat and blubber were consumed by Makah Tribal members and during tribal ceremonies." In fact, much of the meat and blubber was thrown away during an alleged freezer failure in the summer of 1999. No mention is made of this in the 2001 EA, even though some tribal members allege that the act of throwing the meat away was done on purpose, in order to create the illusion that the tribe "needed" to kill more whales. We are aware of at least one Makah individual who witnessed this staged

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	"freezer failure." If we are able to learn of this, it seems reasonable that the far vaster resources of NMFS and the federal government should be able to find the truth about this matter. NMFS needs to investigate this item in a full, open and honest manner. Further, eyewitness accounts indicate that at least some meat and blubber was consumed off-reservation, in towns such as Forks, Port Townsend and Sekiu. We personally know a handful of non-native Washington residents that not only sampled whale meat in 1999, but BOUGHT whale meat from Makah tribal members. Newspaper articles from 1999 indicate that meat and blubber were consumed in a Port Townsend public school by unwitting schoolchildren, forcing the school principal to issue an apology to outraged parents. The mere fact that whale meat and blubber has been so easily and nonchalantly distributed throughout a wide geographic area does not reassure us in light of Makah and U.S. government "promises" that the meat and blubber will be consumed only on the Makah reservation. It also raises grave doubts about the U.S. government's ability to prevent any meat or blubber from making its way out of the country. This shortcoming is not addressed at all in the 2001 EA, but is of the highest priority. INACCURATE REPORTING TO IWC We are extremely concerned that NOAA/NMFS acknowledges a physical contact strike upon a gray whale during the 2000 spring hunt, but this strike is not counted as an official "strike." This example of inconsistency suggests that the agency does not yet have an accurate definition of the term "strike" and leads to concern that the agency is not reporting information accurately to the IWC. A strike should be a strike. In short, NMFS needs to stop quietly changing the rules each and every time they or the Makah Tribe encounter some perceived "difficulty" that threatens to undo this house-of-cards they call a whale hunt. Whaling regulations should NOT be written in pencil with plenty of erasers nearby for handy changes. This practice must be halted. CONCLUSION The only option for NMFS at this point is to abandon all agency support for what is clearly an illegal whaling program. There can be no other choice.
e_Stagman_07-09-08.pdf	Thank you for the opportunity to offer comment on the Draft Environmental Impact Statement for proposed authorization of the Makah tribe's grey whale hunt. I urge you to adopt the No Action Alternative which would deny the Makah tribe any authorization to hunt grey whales. Under Section 101(a)(3)(A) of the Marine Mammal Protection Act there is a currently active moratorium prohibiting the take of marine mammals. There is no valid reason to waive this moratorium to permit Makah hunting of grey whales. The claim that treaty rights require that this hunting be permitted under the claim of aboriginal subsistence whaling is invalid for at least two reasons: 1) The Supreme Court has upheld the ability of the MMPA to pre-empt treaty hunting rights if the marine mammal conservation goals of the MMPA are jeopardized; 2) claims by the Makah that they must be allowed to pursue aboriginal subsistence whaling are a sham since traditional whale hunting no longer exists among the Makah. The definition of "aboriginal subsistence whaling" under the International Whaling Commission includes 1) personal consumption and utilization of whale products and 2) barter, trade, or sharing of whale products among family or closely related members, and 3) the making and selling of handicraft items made from whale parts. The Makah have not eaten whale meat or performed traditional ritual whale hunting in some 80 years. There was absolutely no interest by the Makah people in consuming the flesh of the grey whale killed in an authorized hunt several years ago, and the carcass rotted in the local dump. Additionally, there was no traditional Makah ritual associated with that hunt as the rituals had long ago been discarded and forgotten. The grey whale killed illegally by rogue Makah hunters last September was lost on the ocean floor after four hours of agonizing suffering as the hunters were completely incompetent.

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	The grey whale has only recently escaped from the jaws of extinction, and its population numbers remain tenuous and subject to wide fluctuation. Calf mortality is up significantly. Highly successful ecotourism in grey whale watching, an opportunity offered to and refused by the Makah, has created a migratory population of grey whales habituated to and actually seeking out people. Abandonment of the strict United States prohibition on whaling would send a disastrous message to groups all along the grey whale migratory route encouraging hunting with potential ruinous consequences for the species. Reinstituting currently extinct ritual Makah whaling would require a total re-education of the entire Makah population in consuming and utilizing whale products. Numerous Makah seniors who have protested the resumption of whaling have been subjected to physical and psychological intimidation by militant whalers. The conservation goals of the MMPA plus the existence of the Olympic Coast National Marine Sanctuary must be utilized to deny any authorization for a Makah tribe grey whale hunt. The prospect of a bloody and cruel hunt of these gentle giants to appease the egos of a small cadre of militant hunters is outrageous and unacceptable. Adopt the NO ACTION ALTERNATIVE.
e_Stanley_05-10-08.pdf	I think there should be no question about this. The treaty signed way back when gives them the right to hunt whales, and denying that right is going back on our word. That is inconcievable, as far as I am concerned.
e_Steve_05-10-08.pdf	Of course I support the Makah whaling. I would, in fact, hold that the Makahs have every right to whale without any special consent by the federal government. The Makah are a whaling people. It is a connection of spirit and sustenance with roots thousands of years old. When they signed the Treaty of Olympia a century and a half ago, they specifically reserved the right to whale. To deny them this sacred right of their heritage would clearly be a violation of that treaty. Treaties are binding contracts between nations which, according to our own federal Constitution, are the supreme law of the land. By what right would we therefore deny the Makah this right, which goes to the very heart of their identity? It is no secret that the United States has violated every Indian treaty it ever made, and that is a shameful scar on our history. If we are to evolve as a just and righteous nation, we must keep our word. Being a subject of God's royal kingdom, I avidly support the respect, protection and restoration of habitat needed to sustain our fellow creatures on this planet. I stand up to be counted on the side of the animals whenever their survival is at stake. What people so often forget is that the Makah have always done the same. When they, the Whaling People, chose to suspend their whaling more than seven decades ago, it was like cutting their own hearts out. But they did so because they knew their brother whales were in trouble. The whales faced possible extinction--not because of anything the Makah did. It was the non-Indian highly commercialized whaling that brought the Grey Whale to that brink. Yet the Makah did it because they knew it was the right thing to do for the sake of the whale and for future generations. They stood tall and straight in the effort to restore the whale population. And even though the Makah have the clear right to whale on the strength of their heritage and their treaty, they chose to jump through the hoops of federal and international approval. Why? Because they know it's a complex world in which examples must be set. A world in which government-to-government relations are critical to the effort to respect and protect the various species of life. Through these and so many other measures, the Makah have continually distinguished themselves as good managers and good people. What people so often forget is that the Makahs are the best friend the whales have. We all know that the allocation afforded to the Tribe is very small, and that it's the result of reallocation--that the proposed harvest by the Tribe has little if any impact on the now recovered Grey Whale population. While I can understand the perspective of the protesters--at least to a degree--I believe their actions are ill-advised and shameful. So, yes of course, I support the Makah whaling, and as a citizen of the United States I demand that

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	the federal government (including the judicial system) no longer presume to have authority over the Makah right to reconnect with the deep and abiding spirit of their ancestry.
e_StMarie_05-10-08.pdf	To be succinct, no proposal permitting whale hunting is acceptable at this time. Permitting whale hunts will undercut the Marine Mammal Protection Act and our diplomatic position with regard to the Japanese factory whaling lightly disguised as "research". That said, the Micah have an valid right under the 1855 treaty to engage in traditional whaling. The federal government should engage in negotiations with the Micah to compensate them for the loss of rights under the treaty. If no agreement is reached, then they must be held to the precise letter of the treaty, whaling with hand-thrown harpoons from unpowered wood boats. However, the international treaty obligations of the United States to the rest of the world ultimately trump the treaty with the Micah, and the Senate should take action to legally void it.
e_StMarseille_06-04-08.pdf	1. The International Whaling Commission (IWC) specifically allows aboriginal whaling only when there is an unbroken tradition and only for subsistence purposes. The whales must be a necessity for food. The Makah do not qualify because they voluntarily broke their tradition and they have no need for whale meat for food purposes. They argue that the need is cultural. This is not a recognized need by the IWC. 2. The Makah say they have a treaty right with the United States to slaughter whales. However, the USA effectively abrogated this treaty in 1946 when they joined the IWC and did not represent the Makah as they did the Yupik and other Alaskan native communities. The Makah have a legal right to sue the U.S. for not representing them, although they did not request representation at the time and have never made a protest about this lack of representation. Whaling is governed by international law and falls under the authority of the IWC, and therefore, the USA no longer has the legal right to grant permission to any peoples to slaughter whales within or outside the territory of the United States. 3. If the Makah establish a quota of gray whales they will seek to establish a quota for humpbacks, minkes, and orcas in the future because gray whale meat is not considered to be palatable as a food animal. Most of the whale meat that came from the killing of the young whale name "Yabis" (killed on May 17, 1997) was discarded and wasted. Initially, the Makah admitted to having this objective of seeking additional quotas. 4. If the Makah establish a quota for whales and are permitted to kill whales by the USA, it will motivate the tribes on Vancouver Island in Canada to develop whaling plans of their own. In 1998, thirteen native communities on Vancouver Island said that they would be interested in establishing whaling operations should the Makah do so. 5. If the Makah establish a quota for whales it will further strengthen the positions of Japan, Norway, and Iceland to escalate their illegal whaling activities and it will weaken the United States, as it has already done so, as an international voice for whale conservation. 6. The original plans by the Makah were to establish commercial whaling activities to sell whale meat to Japan. We must ensure that this must not happen. 7. There is no quota granted to the Makah by the IWC and there never was. There is a quota given to native communities in Siberia. The Makah and the United States traded bowhead quotas from Alaska with gray whale quotas from Siberia. This was a horse-trading deal outside of the IWC. 8. If a whale quota is established at Neah Bay, it will threaten the local populations of resident whales that will surely be targeted by the Makah unless specifically protected by legislation. 9. The resumption of whaling by the Makah will cause stress in the migratory and resident populations and this could lead to dangerous situations for whale-watching participants that could be exposed to wounded or stressed animals.

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	10. There are many Makah opposed to the resumption of whaling, and the whaling initiatives have been advanced by elite Makah families without full democratic tribal participation. 11. Tradition and culture must not be the basis for slaughter. The ancestors of the Makah killed whales because they had to do so for survival. There is no survival necessity today to justify such killing. The treaty that the Makah cite as evidence of their right to whale specifically states that they have the right to whale "in common with the people of the United States." When the treaty was signed, all Americans had the right to kill whales. When whaling was outlawed for all Americans it included the Makah as the rights are "in common" and not separate. There cannot be unequal rights granted in a system that promotes equality under the law. This is tantamount to extra special rights for a group of people based on race and/or culture and is contrary to the guarantee of equality under the law as guaranteed by the U.S. Constitution. 12. Whales should not be slaughtered anytime or anywhere by any people. These are socially complex, intelligent mammals whose numbers worldwide have been diminished severely. 13. Tourism in California and Mexico revolves around the gray whale migration and will be adversely affected by a resumption of the killing of these creatures. 14. Allow the Makah to open a casino to make up for any loss of future income they would have derived from slaughtering gentle gray whales and selling the meat to Japan.
e_Stone_05-15-08.pdf	Please do not issue the Makah tribe a permit to continue to hunt whales. The tribal members who blatantly killed a gray whale have shown a total disrespect for this process.
e_Stopthehunt_08-15-08.pdf	I am writing to comment on the Draft Environmental Impact Statement for the Makah's request to hunt Gray Whales, and to urge you to deny their request for the following reasons: 1) Section 1.2.2 of the DEIS states that the treaty of 1855 "expressly provides for the right to hunt whales". This is an incorrect statement. The wording of the treaty is, at best, vague. It states, "the right of taking fish and of whaling or sealing at usual and accustomed grounds and stations is further secured to said Indians in common with all citizens of the United States". This means that the Makah were expressly given the same rights as other U.S. citizens in regards to whaling. U.S. citizens are required to follow the Marine Mammal Protection Act, and therefore by the wording of the treaty, the Makah should have the same requirement without exception. This particular sentence in the treaty has repeatedly been ignored during the ongoing process of granting the Makah permission to hunt Gray Whales. This is likely due to a sense of guilt over the number of other native treaties already abrogated by the U.S. government. However, Gray Whales should not have to pay the price for the mistakes of our ancestors. Furthermore, the only reason the Makah were given a quota for Gray Whales was because of a backdoor trade with Russia exchanging part of their Gray Whale quota with part of the U.S. Bowhead quota. This trade should have been illegal under CITES. 2) The law clearly states that Washington and Oregon have some ability to limit the exercise of Indian treaty rights for conservation purposes. Gray Whales should fall under this category because of the following: a) Gray Whales are the only species of whale to have lost entire populations due to whaling. Two Atlantic populations have been gone for centuries and the Western Gray Whale is on the brink of extinction and listed with the IUCN as critically endangered. This leaves the Eastern Pacific population, representing a mere ¼ of the historical population, as the only viable one left in the species. This fact alone should be enough to offer them permanent protection for conservation purposes. b) A recent study by the SeaDoc society shows that Gray Whales are extremely important to the survival of declining seabirds due to their method of feeding. This is also a reason why they should be protected for conservation purposes.

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	c) A recent study found that the historical population of Eastern Pacific Gray Whales might have been much higher than originally thought, possibly closer to 100,000 than 20,000. This study has not been mentioned in the DEIS but it seems like more research should be conducted on that subject before any more management decisions are made and certainly before whaling is approved. d) There have been some alarming observations recently in the migration patterns of the Eastern Pacific Gray Whale. Some scientists believe that the benthic food source of Gray Whales is disappearing in the Bering and Chukchi Seas, possibly due to global climate change, and the whales have to travel further north into the Beaufort Sea to find food. This causes them to reach their feeding grounds later and they must stay longer in order to build up enough blubber to sustain them through the winter. This could be throwing off the timing of the entire migration and, indeed, more calves are being born along the migration south than is normally seen. In addition, more skinny and emaciated whales are being observed in the breeding lagoons of Baja California. None of these issues have been mentioned in the DEIS but they need to be looked at more closely. Scientists who study these whales at every point in their migration should start comparing and sharing data, similar to the project SPLASH done with Humpback Whales. e) There is a special group of Gray Whales that returns to Puget Sound each spring to feed on Ghost Shrimp. They appear around Whidbey and Camano Islands in March or April and remain in the area for several months before they depart for areas unknown. One of these whales, #49 "Patch" has been photographed in Puget Sound for over 20 years. John Calambokidis of Cascadia Research does not consider these 10 to 12 "resident" Gray Whales to be part of the Pacific Coast Feeding Aggregation as they have never been seen anywhere except Puget Sound. It is unclear where they are coming from and where they go once they leave Puget Sound. It is obvious that more research needs to be conducted to learn more about these whales. The possibility that one of them may be killed by a Makah harpoon is completely unacceptable. These 10 to 12 whales were not accounted for in the DEIS and nothing has been done to ensure their protection. The death of one of these whales would not even count toward the predetermined number of whales the Makah are allowed to take from the PCFA before the hunt is stopped for the year. This needs to be looked at much more closely. 3) There is no humane way to kill a whale. It cannot be done quickly or painlessly. These are sentient animals who feel pain and quite likely grieve for one another. The explosive harpoons or grenades mentioned in the DEIS as a humane alternative are anything but. Japan and Norway, who both use these devices, report that 60% and 20% of whales respectively do not die instantaneously from these weapons. The explosive harpoons and grenades can penetrate the whale's body up to a foot before it explodes which then tears the whale apart from the inside but doesn't always kill it. Frequently a second explosive harpoon is needed because the first one causes massive injuries and shock but not death. Dr. Harry Lillie, a whaling ship's physician in 1946 was quoted as saying "The gunners themselves admit that if whales could scream the industry would stop, for nobody would be able to stand it." I contend that maybe whales do scream and if we were in their world listening, we might hear it. 4) It is unsafe to use an explosive harpoon or a high caliber rifle in the areas where this hunt would be occurring. Endangered Killer Whales and Humpback Whales frequently traverse these regions. Within the last month there have been reports of Southern Resident Killer Whales swimming right by Neah Bay and Cape Flattery, with photos to prove it. These animals can literally pop up anywhere with no warning and could end up in the crossfire of a Makah hunt. With only 87 Killer Whales in this endangered Southern Resident population, the risk is unacceptable. I strongly feel that the Makah's request to hunt Gray Whales should be denied for the above reasons. However I do feel that they should be compensated for their loss in some other way, whether monetarily or with assistance in establishing another industry. But since that alternative was not considered in the DEIS the only option is to vote for alternative 1: no whaling.

COMMENTER	COMMENT
e_Sullivan_06-21-08.pdf	After reading the article in the Seattle Times today about the Makah Indian Tribal members getting off with a $20 fine for killing a whale, it occurred to me that Gig Harbor (being a Maritime City) and everyone else in the world, should be outraged. I would encourage you to write an article voicing my concerns and soliciting concerns from others in our community as well in hopes of putting a stop to a senseless act. As it turns out, the Tribal Courts were unsuccessful in finding Jurors that would participate in a trial against one of there own for killing a whale illegally, hence, they were let go with a slap on the wrist. Funny thing, what would happen to all the drug dealers, murderers and rapists if they were tried by prison inmates? First of all, shame on our Government for failing to insist that they all be tried in a Federal Court. Second, we should have revoked all tribes from whaling now and in the future. As far as I am concerned, these men that killed the whale are no better than thugs with immunity based on a treaty that was signed back in 1855. You know they are all laughing at us right now. Their Attorney was quoted as saying that this action shouldn't adversely affect their chances of continuing to hunt whales in the future. If we don't set an example of these men, this will continue. Treaty my ass!! This kill, along with all others they make in the name of religious and traditional beliefs makes no sense at all. There is no shortage of food on local Tribal lands, especially after our Government allows them to sell cigarettes, fireworks and now set up shop all around our City's with Casinos. This kill and our indulgence of letting them get away with it is nothing short of corruption and needs to stop. I also like to fish, however, I no longer can like the way I did when I was a kid. The answer is that there is a shortage of salmon. Well, global warming, toxic waste in our waters can be addressed and possibly reversed. How about the Indians that stretch nets across the mouths of rivers they lay claim to. Spawning salmon are decimated by these Indians, however, we continue to turn a blind eye. Shame on us and shame on them for not taking responsibility for our land like they fought for back in the late 1800's and currently under the name of there fore Fathers. I hope that others out there are as outraged as I am and will pull together to put a stop to this senseless behavior.
e_Sundberg_05-13-08.pdf	I am a resident of Langley, Washington. Gray whales come by our town every year, feeding on ghost shrimp. I strongly oppose allowing any whale hunting by the Makah. This is not needed for subsistence in this day and age. Their traditions can be better respected with other ways of interacting with the whales, for instance well regulated whale watching businesses. The recent rogue killing of a gray whale by a group of Makahs was a travesty, but even without that event I am in strong opposition to this proposal.
e_Swain_05-21-08.pdf	Following the behaviour of the five Makah criminals who illegally killed a grey whale off Neah Bay last year in an incident which caused the creature to suffer for 10 hours, for which I understand they will serve no jail time, nor be prosecuted by their own tribe, nor anyone else, I wish to state that I feel no further Makah whaling should be permitted. I also feel it is outrageous that these five criminals should be fined only 20 dollars each for their barbaric behaviour towards this creature. It is for these reason that the Makah should be prevented from ever whaling again.
e_Tagland_06-09-08.pdf	Hello: The article I have included below written several years ago talks about the stress on current Whale populations & at that time estimated to be about 22,000 individual Whales.

COMMENTER	COMMENT
	Summary Attn: 2008 Makah DEIS MakahDEIS.nwr@noaa.govWhale article population Hello: The article I have included below written several years ago talks about the stress on current Whale populations & at that time estimated to be about 22,000 individual Whales. Other articles refer to Whale populations in the last century being about 100-200,000 Whales. Recently Japan wants to capture & kill at least 50 Whales. June 8, 2009 Attn: 2008 Makah DEIS MakahDEIS.nwr@noaa.govWhale article population A recent comment by a Seattle fisheries service spokesman refers to the fact that the population "It seems to be stable. When a population starts to reach its natural peak, it will fluctuate a few percentage points," said Brian Gorman, a fisheries service spokesman in Seattle. "It is considered a healthy population." I question that the population only “seems” to be stable. Other articles refer to Whale populations in the last century being about 100-200,000 Whales. The United Nations currently lists the number of countries in the world at about 190. Therefore, if each country took 20 whales a year, for example, 3,800 whales would be taken in a year & in 10 years, 38,000. Recently Japan wants to capture & kill at least 50 Whales. Today, a news item reports 100 whales beached on Madagascar and it is suggested that some kind of testing explosion by industry in the area is the cause. As much as I think it is good for all people to express their cultural values, we must not do so at the expense of the world’s fauna in the light of current knowledge. I would hope that the Makah will accept, a “CEREMONIOUS” Expression of this ritual…which will not result in stress or harm to Whales. All Americans need to adjust to the present. None of us live a lifestyle as in the last century. Indeed the world is not at all the same as in the last century. The extinction of many animals, plants & the exploding population levels are facts of our present time which cannot be denied. Please consider these thoughts in making a decision which I hope will not permit the Killing of Whales.
e_Tagland_06-12-08.pdf	Hello: The article I have included below written several years ago talks about current Whale populations cast doubt over suggestions that existing whale populations have recovered enough to allow whaling to resume. I hope you will not endorse the future Killing of Whales as requested by the Makah Tribe. Whether or not a “Treaty” was signed, the people “back then” had very different ideas & values. Now we have more information & historical perspective. Present day Universities, Community Colleges & public education in general & the Internet did not exist as does today. With much more insight & knowledge about our natural world, we must use our knowledge & apply it correctly. I am hopeful “We” can work together as Americans & as part of the Global Community to save our natural resources, including biological diversity such as still exists & in our power to protect or destroy. I am hopeful the Makah Tribe can ceremoniously display their connection to the Whales without killing them. Research claims staggering drop in number of whales By Steve Connor, Science Editor 25th July 2003 The Independent When an English Puritan minister crossed the Atlantic Ocean to the New World in 1635 he marvelled at the sight of "mighty whales spewing up water in the air, like the smoke of a chimney" Richard Mather's journal also records him rejoicing in the "multitude of great whales, which now was grown ordinary and usual to behold".

COMMENTER	COMMENT
	For years whaling experts have relied on such eyewitness accounts, along with the log books of whaling captains, to assess the size of the whale population before large-scale hunting began in the 19th century. Now it seems reliance on such travellers' tales may have led to a serious misunderstanding of whale populations at the time - possibly underestimating numbers by as much as 10-fold. The International Whaling Commission (IWC), for example, estimates that the population of humpback whales in the North Atlantic now - about 10,000 - is about half of what it was prior to whaling. However, two marine biologists have questioned the basis of these estimates after a study of the genetic diversity of three species of baleen whales - humpback, fin and minke - living in the North Atlantic. According to their findings, the number of humpback whales in the Atlantic prior to 1800 was not 20,000 as the IWC suggests, but a staggering 240,000. The implications of the research - published today in the journal Science - are that many whale populations hunted by humans are far more precariously balanced than once thought. Stephen Palumbi, professor of biological sciences at Stanford University, who carried out the study with Joe Roman, a graduate student at Harvard, said that the findings cast doubt over suggestions that existing whale populations have recovered enough to allow whaling to resume after a 17-year moratorium. "The IWC is the main organisation that regulates whaling, and its policies allow for the resumption of commercial hunting when populations reach a little more the half of their historic numbers," Professor Palumbi said. The problem is that the IWC bases its historic estimates on records dating back to the mid-1800s. "Whaling logbooks provide clues, but may be incomplete, intentionally underreported or fail to consider hunting loss," he said. The two scientists analysed DNA samples taken from 188 humpbacks, 235 fin and 550 minke whales in the North Atlantic to estimate the amount of genetic diversity among these whale populations today. The two researchers calculated how many breeding females would have been necessary to accumulate such genetic diversity, and extrapolated these figures to estimate historical population sizes. They found that pre-whaling numbers of fin whales in the North Atlantic alone were probably about 360,000, roughly 10 times higher than the IWC's estimate, and that minke whales once numbered at least 265,000, roughly twice the number recorded as the natural population size by the IWC. "The genetics we've done of whales in the North Atlantic says that, before whaling, there were a total of 800,000 to 900,000 humpback, fin and minke whales - far greater numbers than anybody ever thought," Professor Palumbi said. Even though the population of humpbacks today is small because of whaling, the genetic signal measured by the scientists persists for a long time "And that past signal is far higher than it should be if there were only 20,000 whales in the North Atlantic," he said. A similar conclusion can be made about fin whales. The IWC estimates that there are bout 56,000 fin whales in the North Atlantic, which is about 16,000 whales more than its estimated historic population of 40,000. "Somehow we have to reconcile those numbers. That's going to require going back and looking at the whaling records. Are they complete? Have there ever been large hunts of whales that weren't recorded? These are things that we have to find out," he said. The study only looked at North Atlantic whales, but the scientists said the figures can also be used to assess historic global populations. Worldwide, the humpback population was once as high as 1.5 million, more than 10 times bigger than the IWC estimates, they said. However, the researchers do not know precisely when whale numbers reached such levels and why they plummeted. Some researchers suggest that it is quite feasible that whale numbers were much greater hundreds of thousands of years ago, but fell to smaller numbers long before the invention of large-scale whaling.

COMMENTER	COMMENT
	Despite acknowledging this weakness, the two researchers are adamant that commercial whaling should not be allowed to resume. "In the light of our findings, current populations of humpback or fin whales are far from harvestable," the professor said. Boris Worm, a marine biologist at Kiel University, said: "This new [study] shows us that, despite recent population increases, we are still far away from our goal of allowing whales to recover fully from relentless exploitation." Species under threat: HUMPBACK WHALE Humpback whales feed on krill and small fish. Each whale eats up to 1.5 tons of food a day. It has a series of 270 to 400 fringed overlapping plates hanging from each side of the upper jaw, where teeth might otherwise be found. FIN WHALE The fin, or finback whale is second only to the blue whale in size and weight. Among the fastest of the great whales, it is capable of bursts of speed of up to 23mph, leading to its description as the "greyhound of the sea". MINKE WHALE Minke whales eat a wide range of fish and squid, as well as krill and other plankton. The minke whale is the smallest of the rorquals, measuring between 8 and 10m in length and weighing between 8 and 13.5 tons.
e_Taylor_05-09-08.pdf	The united states made a treaty with the makah in the 1800's. I believe that the US should live up to its word. Just because its not mainstrea america's belief, it been the makah culture long before mainstream knew what mainstream was. In others words let the Makah whale and preserve there history
e_Taylor_05-10-08.pdf	I support the Makah Tribe's request to resume limited hunting of gray whales in their usual and accustomed fishing grounds. It is a traditional cultural practice guaranteed by treaty, and should be allowed to proceed. Thank you for the opportunity to comment.
e_Telander_05-11-08.pdf	This is the message I have sent to all my friends and anyone else I receive an email from. You must stop this whale killing. How can we tell other nations to ban the killing of whales if we allow this. Please, please, please. If you don't do anything else this month, sent an email to MakahDEIS.nwr@noaa.gov expressing your outrage that we, as a nation, would allow this tribe to continue whale killing when we are asking other countries to ban it. The Makah Tribe claim this is their heritage and right, however, they are doing it with speed boats and high power rifles. I maintain that is just a step away from some Tribe claiming killing white men is their heritage and right and they should be allowed to kill a certain number each year for ceremonial purposes. This is wrong and it is time this tribe grew up and join the rest of this country.
e_Thomas_05-10-08.pdf	Thanks for this opportunity to comment on the Makah Tribeʻs desire to resume whaling. I favor Alternative 1 (No-action). · While the tribe has a treaty right, the tribeʻs stated reasons for resuming their killing of gray whales are more than offset by the fact that they have not done so for more than one human generation. Few of the Makah now alive and able to participate in this activity have done so; the tribe has claimed no harm to their health or welfare because of this fact. · Particular reference to “dietary” impact has been made by the tribe. It is difficult to see the adverse impact of foregoing ceremonial consumption of whale blubber. Had the tribe been living almost entirely off whale blubber for the past 30 years, their argument would make sense. However, they have not … and their claim of dietary necessity is ridiculous. If the tribe must eat whale blubber, they can consume drift whales provided by the agency as noted on page 2-21. · Because of the time elapsed since the tribe killed whales on a regular basis, the Makahʻs claim that they seek to live in accordance with their culture is false. · Tribal enforcement of whaling regulations is suspect at best. While current proceedings against tribal members who killed a gray whale recently are incomplete, news articles clearly demonstrate the tribeʻs reluctance to take action against its members in any meaningful way. Early promises of “swift action” proved to be false; more recently the tribe suggested dropping charges against the alleged and admitted killers of the whale.

COMMENTER	COMMENT
	· The tribe appears to have a commercial motive (sale of ‘non edibleʻ materials to non-tribe members) · The proposed restriction of “sharing” to those with whom local residents have “familial, social, cultural, or economic ties” is meaningless. I could purchase whale products from a tribe member and create an “economic tie”. · That the Makah Department of Fisheries Management is to monitor the tribeʻs whaling activities is farcical. The tribe has demonstrated and inability and unwillingness to monitor and control its members quite recently. With respect to other alternatives · The number of whales allowed to be struck but not ‘takenʻ is excessive in all instances. · The tribe should pay … in advance … any and all costs associated with “a hunt observer, and for federal, tribal, state, and local law enforcement agents and resources (e.g. helicopters and boats) to monitor the hunt and manage and protest activities.” Whaling is not an activity permitted to me or a vast majority of U.S. citizens; the costs associated with this activity should be borne by those who initiate the activity. · That the tribe wishes to “apply the full range of knowledge associated with whale hunting…” is irrelevant. This is not a commercially or socially useful body of knowledge. · Whatever “spiritual connection” to whaling is claimed, it has been lost over many years of non-whaling.
e_Thomas_05-11-08.pdf	s consideration for extending the whaling opportunities for the makah is debated, i would respectfully ask that past behavior regarding the last whale be seriously considered. what you will find is: - the whale was cut apart and distributed to tribal members - the majority of that whale was eventually disposed of in their garbage dump - today's makah really don't have a 'taste' for whale meat - this is not a question of subsistence fishing - this is all about the makah seeing a golden opportunity to market that whale to japan i would also ask you to consider the overall behavior of the makah fishermen. just one year ago this spring several reliable sources observed a makah troller, this is selective fishing at it's best, kill over 300 wild coho. as you are well aware, the mixed stock fishing of puget sound continues into the strait of juan de fuca as well as the areas fished by the makah. there was no reason whatsoever to kill what could be ESA listed fish. an inquiry by myself led me to a conversation with the northwest indian fish commission where i was informed that: - they could kill whatever they wished, whenever they choose, for whatever purpose, including commercial sale, and - i just didn't understand. the makah have CHOSEN to live in a prior century. many native american groups in washington state have stepped into this century and moved aggressively to invest in opportunities and start the important process of taking care of their tribal members. unfortunately, the makah are not among this group. instead they somehow believe that clinging to an outmoded believe in the killing of whales will heal their tribe. it is incumbent on you to take the firm position that whales remain threatened and killing of these animals should continue to be banned by U.S. based fishermen, no matter their ethnic background. we all know that the returning north bound gray whales are in desperate physical condition and this is likely to worsen with over all climate change. do your part for our environment and the creatures of the sea and once and for all ban whaling by everyone.

COMMENTER	COMMENT
e_Thomas_05-16-08.pdf	I have revised my comments slightly (fourth bullet) in light of recent events … Thanks for this opportunity to comment on the Makah Tribeʿs desire to resume whaling. I favor Alternative 1 (No-action). · While the tribe has a treaty right, the tribeʿs stated reasons for resuming their killing of gray whales are more than offset by the fact that they have not done so for more than one human generation. Few of the Makah now alive and able to participate in this activity have done so; the tribe has claimed no harm to their health or welfare because of this fact. · Particular reference to "dietary" impact has been made by the tribe. It is difficult to see the adverse impact of foregoing ceremonial consumption of whale blubber. Had the tribe been living almost entirely off whale blubber for the past 30 years, their argument would make sense. However, they have not … and their claim of dietary necessity is ridiculous. If the tribe must eat whale blubber, they can consume drift whales provided by the agency as noted on page 2-21. · Because of the time elapsed since the tribe killed whales on a regular basis, the Makahʿs claim that they seek to live in accordance with their culture is false. · Tribal enforcement of whaling regulations is suspect at best. As a tribal judgeʿs decision states, the tribe is unable to take any action against its members due to the tribeʿs small size and extensive inter-marriage. Early promises of "swift action" were not matched by actions; the final result renders any concept of 'effectiveʿ tribal management ludicrous. The tribe is not able to govern its members whaling activities. · The tribe has a commercial motive (sale of 'non edibleʿ materials to non-tribe members) · The proposed restriction of "sharing" to those with whom local residents have "familial, social, cultural, or economic ties" is meaningless. I could purchase whale products from a tribe member and create an "economic tie". · That the Makah Department of Fisheries Management is to monitor the tribeʿs whaling activities is farcical. The tribe has demonstrated and inability and unwillingness to monitor and control its members quite recently. With respect to other alternatives · The number of whales allowed to be struck but not 'takenʿ is excessive in all instances. · The tribe should pay … in advance … any and all costs associated with "a hunt observer, and for federal, tribal, state, and local law enforcement agents and resources (e.g. helicopters and boats) to monitor the hunt and manage and protest activities." Whaling is not an activity permitted to me or a vast majority of U.S. citizens; the costs associated with this activity should be borne by those who initiate the activity. · That the tribe wishes to "apply the full range of knowledge associated with whale hunting…" is irrelevant. This is not a commercially or socially useful body of knowledge. · Whatever "spiritual connection" to whaling is claimed, it has been lost over many years of non-whaling.
e_Thomson_05-10-08.pdf	I am writing today to submit my comments on the Draft Environmental Impact Statement on the proposal for Makah whaling regulations. I am a professional cultural anthropologist, however my area of expertise is outside the northwest region, so I write as an informed and concerned citizen of the region with a particular and relevant set of comparative views. Through my colleagues at Pacific Lutheran University I have become more aware of the background and history of this situation, but the views presented in this letter are entirely my own.

COMMENTER	COMMENT
	Having reviewed the DEIS through the website, I feel strongly that, Alterative 2, the regulations proposed by the legitimate and representative authorities of the Makah Tribe, should be recognized and endorsed. The restrictions and regulations they propose appear to be reasonable and legitimate. It is incumbent on the US government to fulfill and support the exercise of the rights enshrined in treaties with sovereign nations. The efforts of the Makah to preserve and invigorate their traditions and community life should be commended and encouraged as enriching the diversity of the American experience. As clearly indicated, these cultural goals can be accommodated without endangering the viability of the gray whale populations and clear safe-guards are in place should such a condition arise. I see no reason to support any of the more expansive alternative plans, numbers 3, 5, or 6, if they were not requested by the tribe at this time. The additional restrictions proposed in Alternative 4, while offering additional environmental protections, should not be endorsed because of significant impact it would have on the practicality and safety of the hunt. Given the limited number of incidents annually and the overall regard for the natural environment evidenced in Makah attitudes and practice, I see no need for these provisions. If possible, I would encourage dialog with the appropriate Makah authorities to adopt additional voluntary guidelines to acknowledge these concerns and outline appropriate techniques for mitigating these impacts without restricting whale hunting activities in these areas.
e_Throop_08-13-08.pdf	I Dean Throop having been a friend of the Makah sovereign nation since 1970 having fished tuna and salmon with many descendants of ancient lineage and was a voice of encouragement to their urchin industry do endeavor to inject understanding into this emotive departure from truth The nauseous and complete disregard for their heritage is flatly not helpful Weird arguments about caliber and safety are silly distractions when I'm talking about a people's heritage . Heritage of the Makah nation is grandly expressed in Washington D.C. they are not a people to be treated disrespect ably. Nowadays honest groups who want something that belongs to someone compensates the other entity in some way ; this is not greediness on the side of the group par say who is truly giving something up . I have talked to Wayne Johnson the whaling captain in captivity ; he understands well that I want compensation for his relatively poor, isolated people . They have one deadly road that often takes their children . When the road is washed out or rockslides or accidents happen people have to go to extreme measures to be evacuated for medical care . The local economy is difficult even for a people renowned for their bravery .The individuals were courageous not rogue; for love of their people they did risk freedom to confirm the Makah Nation' agreement with the U.S.A. Surely nothing justified the lame government response to do something in a timely manner . The matter festered away as the kind of people who will never agree to whaling even beneficial whaling ; rested on their haunches I propose to end this ideological and disagreeable impasse that the whaling quota be converted to an economically respectable annual deference payment . I as an (white) American think it honest and correct to pay 7 million annually adjusted for inflation and retroactive Payment to the persecuted to be included ; This is the honest way to end this impasse of impasses . This is a inexpensive answer that treats the tribe honorably ; not a sending them away to a white school
e_Thulin_08-14-08.pdf	It is hard to comprehend why a country would want to continue a practice (lifestyle, “right”, whatever you want to call it) that does not improve the future of its people. It has been argued that the training for the “hunt” involves mental and physical strengthening and the honing of personal discipline. However, the ultimate goal of all this preparation is the destruction – most likely maiming – of a marine mammal that is on the decline. Will tourists flock to see two whales a year being hauled up on the beach after being shot? It won’t be a Kodak moment. The perception by people here and abroad that this is an offensive act will be stronger than the temporary thrill of the hunt.

COMMENTER	COMMENT
	A few years ago I had an interesting conversation with a docent at the superb museum in Neah Bay. He spoke of the tribe's efforts to lure visitors to the town - with every idea offered being scrutinized and evaluated. The resumption of whaling cannot be the best that they can come up with. What are they thinking?
e_Toivonen_05-10-08.pdf	I don't believe the whale hunt should be allowed because times have changed. They don't really need the whales to live. That has already been proven because they have gone a long time without hunting the whales and have gotten by just fine. Saying it is their culture is not a good reason because all cultures have changed with the times. Their culture has changed too so it's not right to bring up the parts of their culture that are in the past and out dated.
e_Tonkin_08-13-08.pdf	Normally I am a great defender of Native American Tribes and their treaties, which have been broken time and time again by many US government administrations. However, the 19th century treaty with the Makah tribe that guarantees them the right to continue whaling was agreed to before humans learned about the high level of intelligence, social structure and emotional life that whales have. We must abrogate the whaling provisions of the treaty and deny the Makah's request. Not only would killing whales merely for the sake of tradition and religion be tantamount to murder, but it adversely affects entire families and pods of whales. What is even worse, in order to kill some, the Makah would be allowed to wound and chase hundreds over just a five year period. What kind of civilization can we claim to be if we allow that? The rights of the Makah to practice their religion and pursue their treaty rights do not outweigh the rights those poor whales should have to survive without harassment and violence. We cannot be hypocritical in our efforts to stop the Japanese and others who hunt whales only to let our own Native Americans do it. The only valid reason we could possibly have for killing whales is to cull pods that are overfeeding their feeding areas and are starving to death or likely to starve to death as a result. Let the Makah wait for those opportunities if they ever present themselves. Until then, they can hunt whales with a camera. Please deny the Makah tribe's request.
e_Triggs_05-12-08.pdf	I support the Makah Tribe in subsistence whale hunting if there is a reasonable expectation that doing so will not damage the overall health and reproductivity of the whales (as a regional species) that they hunt and harvest.
e_Turney_06-17-08.pdf	How can I get more information on stopping the Makah whale hunts?.. Unfortunatly the old days are gone, whale meat is not needed for survival and as far as the spiritual aspects, we as people grow and change with time, maybe the spiritual needs could be met without the suffering and killing of such an important and majestic being. The illigal hunt showed the desrepect and lack of skill of the hunters.
e_TwoFeathers_05-11-08.pdf	Their rights have almost been eliminated entirely. Let them fish and leave the tribe alone. Don't the Feds have better and MORE important things to do???
e_Tyler_05-30-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers.

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	Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Vandernoort_06-01-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter.. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Vandervoort_06-15-08.pdf	Thank you for accepting public opinion on the Makah Indian Tribe's February 2005 appeal to recommence hunting Pacific gray whales in coastal waters off Washington State. I understand the Draft EIS weighs a range of options to the tribe's proposal to kill whales. I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter.. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_VanDyke_05-17-08.pdf	Thank you for the opportunity to weigh in over the recent controversy regarding Makah whaling. From my perspective, the fact that there is controversy over whether the government should honor a treaty that it itself made - especially when we are talking about a maximum hunt of 20 whales/yr in a population of 20,000+ whales - is truly a sign of just how far we still have to go over a society. There isn't nearly this much controversy over oil rigs and longstanding air and water pollution, which could all represent an actual risk to the whales. Traditional foods and ways should be fostered and encouraged. I have heard no credible argument - and I have been listening - for why the Makah should not have the right to celebrate the ceremonial and cultural significance of reviving the whale hunt. I know I speak for many of my classmates and colleagues when I ask that the 1855 Makah treaty rights PLEASE be honored.
e_Vierkoetter_05-12-08.pdf	If the Makah feel they can justify killing defenseless whales because of a treaty from 1855, over 150 years ago, then let them live as they did over 150 years ago: ● No government funding ● No welfare/TANF

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	● No unemployment ● No Section 8 rental/housing assistance ● No free rent, electric, gas, water, phone and cable ● No free rides ● No food stamps ● No free medical/Dental I can't justify, nor can they probably, killing 1 whale a year. If it is to prolong a tradition, so be it (please use the motorless canoe and hand thrown spears-no modern tools-traditional). These tribes need to come to terms with evolving with the civilized world. Do the Mayans still sacrifice humans? Can other tribes still kill roaming buffalo?? Let's put an end to this senseless killing.
e_Villa_06-28-08.pdf	I strongly object to the Makah Indian Tribe's proposal to hunt gray whales! It is not environmentally responsible. It is also very cruel to a sentient being. The last (illegal) whale hunt ended in the long, painful death of a beautiful creature! A culture can be preserved without continuing in ALL of the historic activities. Many cultures thrive in the USA maintaining their traditions through language, music, dance, food and other customs. Killing is not a cultural value that needs to be passed on from generation to generation. Whales are among the endangered species, their numbers have been drastically reduced in the last 200 years. There is no reason, excuse or argument that can make a case for the Makan Indian Tribe's proposal to hunt gray whales! I hope is it not allowed.
e_Vittorio_06-05-08.pdf	After much thought, it is my opinion that the gray whales should be left in peace. I am against the Makah renewing their "traditions" and "rituals" to feel "pride and self esteem and as a distraction from drugs and alcohol consumption". If all of our subcultures within our culture were permitted to return to their rituals and traditions there would have to be legal cock fighting, bullfighting, dog fighting, even animal sacrifice, and slavery. During the 70 year moratorium on hunting gray whales, scientists and animal behavorists have taught us so much about the incredible social aspects of whale pod and family ties and the intelligence of this magnificent creature, referred to as our human counterparts in the sea. American citizens have come to appreciate our kinship with whales through whale watching and many documentaries over recent years. Our history of killing whales is shameful to most. We now have substitutes for every product the whale used to provide. I believe to allow the immense suffering of these great animals to appease a misguided belief that it will restore a sense of "pride", is just wrong. It is wrong and everyone knows it is wrong.
e_Voss_05-11-08.pdf	This is to let you know that I am very opposed to the Makah tribe wanting on-going whaling privileges. While I sort of understand their tribal history about this subject, this is a new world and they just need to join. Don't like it, too bad. By this email I am requesting that you disallow such activity.
e_Vulovic_06-22-08.pdf	Hi, I am a Washington State resident and firmly opposed to the lift of the moratorium on whale-hunting for the Makah Tribe. To allow even limited hunting of a species that is already at risk due to current and impending climate changes, which affect sea life more than any other ecosystems, would be shortsighted. At a time like this we cannot afford to loosen the restrictions that protect any wild animal's survival, least of all sea mammals made vulnerable by their positions at the top of the food chain and by the effects of global warming. We are living in a world that is strained by every additional "harvest" of the seas and our planet. The "right" to exploit the seas and our planet cannot be interpreted as liberally these days as it has been historically. In the context of our changing environment and increasing scarcity of resources all over the globe, to open doors to hunting a previously protected whale species is a retrogressive

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	action. We should be focusing on increasing protection of marine life. Thank you for taking the present-day situation of the marine environment into account and for listening to the voices of your constituents.
e_Walker_05-11-08.pdf	Whale Killing is a totally abhorant practice and should be stopped NOW! This is in no way a "right" and our Govenrment should stop it immediately!
e_Weber_08-15-08.pdf	[Duplicate of NWIFC_08-15-08.pdf]
e_Weinstein_05-10-08.pdf	Request for comment period extension
e_Weso_05-13-08.pdf	In weighing its decision to grant whole or partial exercise of the Makah Tribe's treaty right tohunt gray whales, I urge the NOAA's National Marine Fisheries Service (NMFS) to read the U.S. Constitution and, above all else, the Supremacy Clause of the U.S. Constitution: Second Clause: "This Constitution, and the laws of the United States which shall be made in pursuance thereof; and all treaties made, or which shall be made, under the authority of the United States, shall be the supreme law of the land; and the judges in every state shall be bound thereby, anything in the Constitution or laws of any State to the contrary notwithstanding", emphasis added. Third Clause: "The Senators and Representatives before mentioned, and the members of the several state legislatures, and all executive and judicial officers, both of the United States and of the several states, shall be bound by oath or affirmation, to support this Constitution; but no religious test shall ever be required as a qualification to any office or public trust under the United States," emphasis added. Secondly, I urge the NMFS to consider the 1855 Treaty of Neah Bay, which was approved by the President and ratified by the Senate. This treaty gave the Makah Tribe the right to hunt gray whales and as such, is the supreme law of the land. Although the Judicial branch has rendered decisions and the Legislative branch has acted in such a way over the past 153 years to render the supremacy clause and the oath of office seemingly moot, a sober reading of the Constitution reveals that not only is the Supremacy Clause alive and intact, many acts of Congress and decisions of the Judicial branch are unconstitutional. Thirdly, I urge the NMFS to consider Executive Order 13175, entitled "Consultation and Coordination With Indian Tribal Governments" and dated November 6, 2000, which requires federal agencies to "honor tribal treaty and other rights" and encourages federal agencies to consider waivers. Finally, I urge the NMFS to keep in mind that it wasn't overhunting by the Makah Tribe that caused the gray whale to become an endangered species. The Makah Tribe has been whaling for well over 1,500 years. Overhunting was an act committed by other nations that had no regard for life and sustainability. What the Makah Tribe is asking for is reasonable and sustainable. Thank you for the opportunity to submit written comments on this very important matter.
e_Westenberg_05-10-08.pdf	I have read the lengthy Makah Draft DEIS and feel I can summarize same in one word: nonsense! Well-crafted arguments by the Makah using great prose and of course legal in form. But nonsense. Subsistence? Weak argument. We as a species have come a long way in 1,500 years and have available to us much more efficient ways of fulfilling our requirements for nourishment. Whale hunting made sense 1,500 years ago, but the usefulness of that activity today is non-existent. Ceremonial value? Slaughtering mammals for ceremony is primitive, pure and simple. I acknowledge that Native Americans have needs. Are not those needs better met by providing proper education to the youth in fields that will allow them to earn a livelyhood in the modern world? Controlling addiction has to be high on the list of "things that need to be

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	done". Leading a productive life and practicing good values will give these folks the sense of self-worth and value that they seek. I don't see the slaughter of mammals as having the same impact on individual lives. I would support symbolic ceremonies that allow the proud past of a people to be recognized and remembered. Symbolism certainly has been used successfully in many cultures. So, the Makah don't have to forget their past. But they should recognize that some things done by our ancestors were done out of a necessity that does not exist today. And, given the choices available to us today, I doubt that their ancestors would choose to hunt whales. For background, I am 60+ and have spent many enjoyable days and nights in our Olympic Mountains and on our salt water. I am not ultra conservative, but just don't agree with senseless killing. The Makah people would be better served by stepping out from behind their curtain of "tradition" and put their focus and energy into something more useful to their survival.
e_White_05-30-08.pdf	Concerning the slaughter of whales here in the Northwest, I am against the murderous decision. The waters belong to aquatic life yet we still believe, as a whole, the world is ours to do with what we desire. People very well ought to be beyond that eleventh century thought process. We ALL need to get with the times, past the year 2000, and move on. I am strongly against allowing the murder of the small number, if not any, whales; animals and wildlife for that matter. Instead, we need to pen-up death row inmates and have at them for game. They deserve it. As opposed to peaceful and beautiful whales who do not deserve anything other than life just as peaceful and beautiful as they. The world is exceedingly OVERpopulated with our arrogant race fighting for superiority; we ought let tribes and hunters have a go at inmates.
e_WilAllen_08-15-08b.pdf	I am writing to encourage you (and I mean “to bring courage”) as you make decisions regarding Makah whaling. The petition to resume whaling argues that it is for “ceremonial and subsistence purposes." SUBSISTENCE A group of Makah elders addressed this subject much more directly than I would have, saying: “We think the word ‘subsistence’ is the wrong thing to say when our people haven’t used or had whale meat-blubber since the early 1900s…. We believe the hunt is only for money.” Far more money, as well as good will, would be generated from developing whale-watching and eco-tours. The gray whale that was last killed in an official hunt was swimming only a mile and a half from shore, as gray whales usually do. Because they tend to approach boats with curiosity and great interest (and without fear, since they have not been hunted here since 1946), gray whales make perfect subjects for whale watching. Humpback whale watching in Hawaii brings in more than thirty million dollars a year. CEREMONY The last (organized) whale hunt exemplified little regard for ceremony, particularly in practicing respect for the whale through traditions as seemingly onerous as staying up all night praying for the recently killed whale. The whalers didn’t even stick around to do the butchering, or to participate in it. Robert Sullivan from National Marine Fisheries was the only person willing to step in when the hired butcher asked for assistance. TRADITION The Makah are asking to harvest whales using modern technology. In the last official kill, the U.S. Coast Guard retrieved the whale, which had sunk to the sea floor. Tradition was and is not an issue to those who want to resume whaling. It could be, though. In 1915, when European whalers had decimated the gray whale population, it was the Makah tribe, before anyone else, who recognized the

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	need to stop killing in the hope that gray whales would recover. While considerable recovery is unfolding, gray whales are not yet secure enough for Makah to consider taking from their numbers. Not only have they suffered inexplicable declines, as great as thirty per cent recently, but also there are very small populations among the gray whales, which are local, and are far too small to consider safe to diminish purposely. One that returns from Mexico only to Puget Sound is no greater than 10 members; another group of around 250 is also considered a "resident" population. Unless the Makah are able to distinguish from among the varying populations, as sone scientists can, what tradition would risk destroying such small but intact populations? The Makah tradition here is one of restoring, not of destroying. RIGHTS, and WHO GETS TO BE HEARD If you asked the women of the tribe, the discussion would be over. They are not for quick fixes. I suspect that white people of government employ are responding to the demands of young people who have lost some of the deeper perspectives of their culture—entirely the fault of whites over long periods of history—wanting to say "yes, you can hunt" because, indeed, young men of the Makah tribe are restless and in great need of the constraints and spiritual fulfillment that their culture used to offer them through the discipline of The Hunt. Honor, Respect, Courage,--these do not come from killing but from diligent growth in discipline. By handing over to these young men the right to decimate an already struggling species, and a very friendly and trusting one, white people are burdening them with a wrong that they will not be able to right when they finally grow up. We know better; throwing in five whales a year to be slaughtered for their boisterous entertainment (as demonstrated previously) and for quick money will do nothing for them nor for the tribe we are perhaps attempting to help. Having the courage to say "NO" is the only help we can offer in an official capacity. CONCLUSION I beg you to listen to scientists regarding the fragility of this species. I beg you to find out what the Makah really want and help them find it in constructive ways. These are the difficult solutions. The easy one is just to say "yes." You, too, will not be able to rectify that mistake in your lifetime here. This is your opportunity to stand on the side of courage.
e_Wilkin_05-09-08.pdf	Please consider not approving the tribe's request; taking the "no action" alternative.
e_Williams_08-15-08.pdf	In the matter of the 2008 Makah DEIS, my organization requests that the Makah DEIS be declared invalid immediately. The public has not been served properly with an unbiased and thorough document by a contractor that has no connections to the tribe. The public is not able to respond properly to this document. The DEIS fails to meet the guidelines NEPA and requirements. The preparation of the DEIS by Parametrix, Inc. invalidates the DEIS for numerous reasons. It is inadequate, misleading and biased in favor of whaling. As it is, the DEIS is inadequate for public review. Parametrix, Inc., was contracted and paid through NOAA/NMFS by US taxpayers, to provide an objective, unbiased, thorough and knowledge-based document on this issue to the public. Yet the document is neither thorough, objective, unbiased or knowledge-based. As a matter of fact, it was discovered that Parametrix, Inc. has such numerous deeply-entrenched and visible financial connections to the tribe that awarding this contract to them was a miscarriage of justice to all US citizens. Indeed, such a contract makes a mockery of the environmental review and SEQRA process, negates everything except a wholly superficial conformity to NEPA guidelines. This DEIS is an insult to everyone. Parametrix, Inc. has very publicly supported whaling by the Makah as seen during their Corridor Management Plan which was to help the tribe "interpret" whaling to tourists. They in fact stated several times in the DEIS that their intentions were to "improve whaling-tourist relations". Parametrix, Inc.'s role as a DEIS preparer was not to promote whaling, but

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	to report objectively on the impacts that whaling would cause. Parametrix, Inc. was incapable of presenting objective information and again reaffirms that this document must be declared invalid. Parametrix states in its unacceptable DEIS that "more visitors would be drawn to the area than avoid the area as a result of a whale hunt," an absurd statement since watching whales being slaughtered is on no other "whaling" nation's tourism agenda, and we have seen the numerous adverse impacts that a whale hunt on nearby whale-watch boats. Parametrix, Inc.'s closely-related company, TranTech, was in charge of overseeing the $10 million Tribal Byway paving project through Neah Bay. This and Parametrix Inc's connections with the Neah Bay wave energy project which would also benefit the Makah, would have been sufficient grounds for NOAA/NMFS to avoid mention of Parametrix, Inc. in the DEIS. One wonders how could NOAA/NMFS choose Parametrix, Inc. to prepare this document? Parametrix, Inc. did not even report on the impacts of a whale hunt on tourism in the surrounding county (Clallam); however, local residents have stated on the record that there were negative economic impacts. Unbelievably, Parametrix Inc. dismisses national and international public opinion which has found that 83% of the US public is opposed to whaling! Since NOAA failed to provide the most essential information to the public in order to facilitate proper comments, this DEIS must be declared invalid. Perhaps the most relevant event that occurred just recently and prior to the DEIS comment period was the September 7, 2007, illegal slaughter of a protected gray whale by 5 renegade Makah. The whale was shot 16 times and languished for a dozen hours. Yet NOAA/NMFS did not release information about the case to the public, which would have only fairly given commentators an important glimpse into the tactics of Makah whaling! The proposed law states the whales "struck but not taken" will not count! That means whales could be used for target practice by like-minded tribesmen simply because" it's legal. So what? " This can never be allowed to happen. We strongly and vehemently oppose enacting any law that states that a wounded whale "would not count" in the overall take. Since this reduces the action of inflicting a gunshot wound to a whale as "legal"; whales could be exterminated with impunity. It is widely understood that the Makah tribe, centered around the waters of Washington State in the US Pacific Northwest, do not present a subsistence need for whale meat. It is well-known that the Makah ceased regular whaling activity in the early 20th century. It is also well-known that only a handful of Makah tribe members are proponents of the whale hunt. Is this a case of a few bullies in the tribe - a few mean-spirited individuals not ashamed to inflict hours and hour of torture on a suffering whale? Of the case in question, the 5 Makah, which many call "inept", shot the whale 16 times but did not kill it! Could they have been inebriated or having some kind of party? What could have been sacred about this? Whatever, they acted alone - the whale hunt was in defiance of Makah tribal law as well as US law and the Marine Mammal Protection Act! The DEIS fails to acknowledge that the tribe's people were so unaffected and disinterested in the killing of the whale that it left the job of butchering to visitors! It was even reported that most did not like the taste and quietly threw it away! What's more, the whale meat was distributed to non-Native Americans, even taken to Canada. Again, what kind of sacred tribal ritual was this? This information was omitted from the DEIS as well. Some believe that the pro-whaling faction within the Makah have intimidated those who openly oppose resuming a whale hunt. The question remains why do a few want a whale hunt? Is it because there is a lucrative trade in whale meat to Japan or Norway? Or is it more likely because the Japanese might subsidize the whale hunt, and use the Makah issue to gain small coastal whaling rights with the IWC? Indeed, at the IWC, pro-whaling groups scream about the indigenous rights; they could scream in this case also even though there is no tradition of whale hunts in the Makah tribe. What is at stake is a species of whales that are said to be "in recovery". However, the latest estimates are raising new fears, as whales are struggling through the seas plagued by oceanic dead zones, pollution, overfishing and global warming, that gray whale numbers are again falling. In fact the most recent population estimates show the gray whales may be in trouble again. There is no justification to allowing a take of gray whales by this tribe. Regardless of the status of the gray whale population the DEIS is a miserable failure of a document and must be declared invalid immediately.

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e_Wineland_05-10-08.pdf	How arrogant this government is in this regard. Yes, the Makah people should be able to hunt whales as their culture calls for and the original treaty allows. I see no difference in hunting whales that I do in hunting deer or elk.
e_Woods_05-10-08.pdf	I am writing in support of allowing the Makah tribe to resume hunting whales for ceremonial purposes. I think it is important to honor the 1855 treaty rights and the Makah cultural and religious traditions. I am reassured that the size of the gray whale population has increased and is stable, and that the limited whaling allowed under the treaty and the DEIS provisions will not threaten their survival. Please approve one of the 4 DEIS options that allow Makah whaling to resume.
e_Wosk_05-17-08.pdf	$20.00 is the extent of justice? Of punishment, for the murder of an innocent being which suffered for more than 10 HOURS!! before slipping beneath the waves? Are you on crack? OBSCENE, DISGUSTING AND A MONSTROUS TRAVESTY, please don't allow NOAA, the justice system and the Makah to get away with it!!! The Makah whalers need to be SEVERELY PUNISHED for attacking and brutally slaughtering innocent whales. Such barbarity is inexcusable -- especially knowing how intelligent, sentient and precious whales are. "Tradition" must evolve when faced with enlightenment; it's not to its detriment, but rather to its benefit. Read the following, below, and take proper, ethical action to punish these cruel savage Makah for murder: "Until we stop harming all other living things, we are still savages." ~~ Thomas Edison "If a man aspires toward a righteous life, his first act of abstinence is from injury to animals." ~~ Albert Einstein "We can judge the heart of a man by his treatment of animals." ~~ Immanuel Kant "Compassion for animals is intimately connected with goodness of character ... he who is cruel to animals cannot be a good man." ~~ Arthur Schopenhauer
e_Wright_06-17-08.pdf	Times have changed, there is no real reason to kill these beautiful peaceful creatures. If you need to have the ceremony, then do it in effigy and eat salmon. I used to camp on the Makah reservation years ago and found the people very wonderful and warm. I don't want to think that these same people would want to make a whale suffer and die.
e_Wright_06-30-08.pdf	I understand that public opinion is now being taken into consideration with regard to the decision to allow the Makah to resume the whale hunt. I understand the Makah are trying to regain some of the old ways, but the old days are gone and maybe it's time for spiritualness without the suffering and killing of such an important member of our planet that was pushed to the brink of extinction not long ago. In my opinion, the fact that the last hunt was done illegally and in such a flagrantly inhumane manner should also factor in on this important decision. Why would permission for something this unnecessary now be granted when rules and guidelines were so boldly disrespected before? Please give very serious consideration to the opinion and request from those of us who GREATLY oppose giving permission for this archaic practice! In addition to the importance of this decision to our local area, we have a tremendous responsibility to the rest of the world in setting such a precidence that will have far reaching effects, surely resulting in negative impact to the newly recovering whale population. Consideration of this fact should not be overlooked.
e_Yolton_05-28-08.pdf	I am vehemently opposed to the Makah's continued desire to have another whale hunt. This practice is an outdated, unnecessary killing of these great mammals. These people are no longer subsistence tribes. Why can't they "act out" the harpooning of these animals in ceremony, without actually killing them, as we see other Native Americans perform their ancestor's rituals. Please do not allow this "hunt" to take place.
e_Young_05-11-08.pdf	I understand your position and role; I also understand the Makah. I don't believe any of us have a right to say anything about the Makah hunting of whales and it is extremely considerate of them to include the Marine Fisheries in their decisions whether to hunt for whale or not. It is a treaty right that they hunt and this is a sovereign act. Our problems with our wild life populations have nothing to do with the

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	indigenous hunts, they are our problems alone. Since they have desired to include you in their decision, I say not to give your permission, as they do not need your permission, but give them your blessing to whatever hunt they desire to do.
e_Young_05-29-08.pdf	I respectfully ask you to consider this fact: In the 21st Century, no human being needs whale meat to survive -- including the Makah Tribe, who until recently, left the gray whale alone for over 70 years. The "reinforcement of tribal identity" does not justify slaughter. Whales are typically harpooned or blasted with high-powered rifles under the guise of cultural whaling. Holidays are observed with whaling contests and races. No celebration warrants animal suffering and death. After five Makah whalers illegally shot and harpooned a gray whale off Neah Bay in 2007, the animal gradually bled to death over nine hours. The Makah Nation dismissed all charges, as long as the offenders violated no laws for the next year. Federal prosecutors offered a plea deal that asked the tribal court to waive prosecution. As you know, the tribal judge ignored the federal plea deal, ordering the five whalers to instead stand trial in a sympathetic Makah courtroom. This is unacceptable -- for the Neah Bay whale and others who will suffer prolonged death at the hands of Makah killers. Please do not honor "treaty rights" to massacre whales. There is no rationale for "ceremonial and subsistence" whaling in the contemporary world. Please deny the Makah Nation's proposal to legally kill whales under their treaty.
e_Zeff_08-15-08.pdf	We are strongly opposed to any whaling activities by the Makah tribe on the North Olympic Peninsula. the Whales are magnificent creatures and should be protected. They are an asset to our area and should not be killed or harassed.
EPA_07-28-08.pdf	The EPA has reviewed the Proposed Authorization of the Makah Whale Hunt Draft Environmental Impact Statement (EIS) in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Section 309, independent of NEPA, specifically directs EPA to review and comment in writing on the environmental impacts associated with all major federal actions. Under our policies and procedures we evaluate the document's adequacy in meeting NEPA requirements. The EIS evaluates five alternatives considering various components of the hunt including the time when whale hunting would occur, the number of whales harvested, locations where hunting would be restricted, and the number of strikes that would be permitted. The EIS identifies Alternative 2 as the Proposed Action. Alternative 2 would allow hunting between January 1 through May 31, in the Makah Tribe's usual and accustomed hunting area west of Bonilla-Tatoosh line I, allow for a total of 5 whales harvested each year with no more than 20 whales harvested in five years. We have assigned a rating of LO (Lack of Objections) to the draft EIS. This rating and a summary of our comments will be published in the Federal Register. A copy of the rating system used in conducting our review is enclosed for your reference. If you have any questions or need additional information, please feel free to contact me at (206) 553-1601.
Friends of Animals_08-13-08.pdf	[Duplicate - same as e_Feral_08-13-08]
Griffith_06-20-08.pdf	After careful and thorough review of the draft EIS, I recommend the adoption of-Alternative 1, the No-action Alternative As you can see, I reside in proximity to the Makah reservation. I have attended the several information sessions, and I often meet and discuss the subject with both Tribal and community members. I attended many of the events prior to and following the 1999 Makah take. Further many years ago, I was active in the Sierra Club's national "Save the Whales" program of the 1950s. My understanding of the issues, background, actions, and consequences lends unusual substance to this recommendation. You should be aware of "where I come from": the NEPA always is the underlying statement of principle The MMPS, a comprehensive, hard-won statement, demands preservation in its entirety, no waivers or exceptions. The pending Makah request cannot be considered

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	favorably within these guides. The 1855 Treaty of Neah Bay is irrelevant. Six generations later it is another scrap of paper in the dustbin of history, along with dozens of other treaties and agreements published in a earlier and evolving World. Today's Makah tribe can no longer attach valid "cultural and subsistence" claims to the proposed hunt. The latter were refuted in earlier litigation and, in any event, contradict the status quo. The cultural claim is less easily dismissed. It may have limited significance to the larger fraction of the tribe now living in Port Angeles (now well integrated into the local economy). For those living on the reservation, I contend that a very small group is employing this action to reinvent a troubled Indian community. Note that several of the tribal elders have come forth to disassociate themselves, a sentiment that prevails among the Makah students in the local college.
Hasbrouck_07-07-08.pdf	Concerning the request of the Makah Indian Tribe to kill gray whales in the North Pacific, let my voice be heard for a definite and resounding NO! Today many of the Makah Tribe members are less Makah than I am, and I happen to be 1/16th! This is a barbaric and embarrassing so-called tradition, which should be laid to rest with all other bad traditions humans have had throughout history. We know now that the whale is a magnificent animal in every sense of the word, and all of the products from the whale have been replaced by technology and science. The portion of the Makah tribe members who believe that the killing of a whale will miraculously restore “pride and self-esteem, and help them refrain from drinking and taking drugs” – are having “magical” thinking. To rekindle the manhood they seek through destruction of an innocent animal will not do it; and in fact in the minds of most Americans killing whales is shameful, not prideful. Rekindling manhood comes with ideas for improving the Makah economy for a better life for all. This may involve an ironic turn of following the whales with ships and tourists. This would be a continuous cash flow and a prideful business. The Makah know the migratory patterns of the whales and should profit from their great knowledge. I plan on writing to my local editor to rally the troops to send letters about this request being just plain ‘wrong’; it is wrong and we all know it is wrong.
Haugland_07-07-08.pdf	My name is Rachel Haugland, and I am an incoming senior at Sequim High School in Sequim, Washington. This past year I have been participating fervently in a nation-wide competition called National History Day (NHD). In this competition, middle school and high school students from across the country make projects based on a theme in history. Students can participate in the categories of: historical papers, performances, documentaries, exhibits (display boards), and websites. This year's theme was conflict and compromise in history. Living only a couple hours from Neah Bay, my partner Olivia Boots and I decided to pursue the subject of Makah Whaling for our group documentary. We weren't entirely sure what to expect when we started the project. To tell the truth, I hadn't had a clue that the 2007 hunt had even occurred at the time. This being our fifth year competing in NHD, we were somewhat arrogant (as little as I'd like to admit it) about the whole thing. We knew the routine, and we knew what it took to make a good documentary. Most importantly was access to interviews, and the closeness of both the Makah and the environmental groups was more than convenient. However, neither of us ever anticipated that we could actually become passionate about the topic. As we progressed in our research, it became painfully obvious that the Makah have been taken advantage of time and time again by the colonialist views of not only the government, but also environmental groups. I'd like to take this time to share a little bit with you about what I've learned. I believe that I may have a unique point of view, coming from a third party, and being a mere high school student. No one told the Makah to stop whaling in 1926; they voluntarily stopped. Makah Paddler Darrel Markishtum explained to us, "when you have to go farther and farther out to fmd a whale, it becomes obvious that it's time to stop." The Makah have proven themselves to be able stewards of their resources, and as the DEIS proves, the Makah's proposed plan of action will have very minimal impact on the environment, and virtually no impact on the whale populations. The Makah have even agreed to not hunt a whale from the Pacific Coast Feeding Aggregation, where the loss of a whale could have an

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	impact. We took the time to contact Margaret Owens, the wife of one of the most outspoken antiwhaling protesters in our area. Listening to her arguments, it was quite easy to blow holes through them. Her first complaint was that Japan will call the United States hypocritical for supporting the Makah's hunt, but voting against their whaling. First of all, the United States government would really rather not have to grant the Makah whaling rights, but the fact of the matter is, they're held to the treaty Isaac Stevens signed in 1855, specifically stating the Makah's right to whale. Furthermore, Article VI of the constitution seals the deal, stating that Indian treaties are to be read as "the supreme law of the land." If Japan had treaties stating those very same words, then they would have a valid argument. Her second complaint was that by allowing the Makah to whale, other aboriginal groups would see this as an excuse for them to do the same. Again, this could not happen because no other aboriginal group specifically states the word "whaling" in their treaty. Margaret's last concern was that this hunt would weaken efforts to end commercial whaling in other countries. I very strongly disagree with this point. Because this hunt is of cultural value, as much as it is sustenance, the strong emotions tied to it would strengthen efforts to end commercial whaling. Although I believe the Makah should have the right to sell their whale meat and oil for economic reasons, it's obvious that this is an unlikely goal, whereas the nation-wide resistance to any form of commercial whaling is phenomenal. One of the most important things we have learned through this experience, however, is about the Makah people themselves. Researching the social values of their ancestors, it became clear that not only their economy and culture, but also their social structure, depended directly on the whale. When the lack of whales forced the Makah to stop whaling, their entire community saw a decline. The youth became disengaged in anything culturally related, leading to increased drug use, alcoholism, violence, crime, and overall care for the world. If you've taken a trip out to Neah Bay lately, the people are in pretty bad shape. The housing is mostly run-down. The people don't have a whole lot to live for anymore. As we talked to the families who were involved in the 1999 hunt, however, the positive changes it had incurred remained obvious. Whalers have to have the mindset of being completely one with nature, free of hate and all negative thoughts. They value their family and their culture, and it shows in the way they live their lives. Talking to Janine Bowechop at the Makah Cultural and Research Center (the museum from the Ozette dig), it was fascinating to see how both the Ozette findings and 1999 hunt sparked a revival of culture among the Makah people. However, those Makah not directly involved in keeping whaling alive have begun to fall into the same pattern of decline that affected their nation in the 1940's. When their rights were again taken away, many began to grow restless, such as the men who shot the whale in September. While these men should be persecuted to the full extent of the law, this is a painfully clear example of this social and cultural depression. Who is it that has the right to decide whether it is more important to save the lives of 4 whales a year, or an entire people? While I am aware that you may have heard many of these arguments countless times before, I'd really like you, and anyone else whose hands this letter falls into, to realize that I am not just blowing hot air here. I have done the research, and have a 23-page bibliography to show for it. You have done the biological research, and have a 909-page document to show for it. The U.S. Government has a constitutional responsibility to honor their word to these people. As a U.S. Citizen, the refusal of this right makes me fear what will become of my own rights. The fact that this is so painfully clear really makes me wonder how much integrity is left in our government. I pray that my words will not fall on deaf ears, and that this letter will get to the people who need to hear it. Because honestly, if, a 16 year-old, can see this and worry about my liberties being compromised, why is it our elected officials cannot? Thank you for your time, and I have included the 10-minute documentary that was the result of our research, along with our process essay and annotated bibliography. I hope you have time to look at both, and to consider what I have said.
Howells_08-12-08.pdf	It would help if the native whaling were to be allowed only with pre-European tools and boats - to allow them to use modern (European) weapons and boats is an insult to the tradition they wish to keep.

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Kennedy_06-11-08.pdf	Thank you for sending me the CD to view the request from the Makah Tribe for permission to resume the hunt of gray whales. After reading all very carefully I cannot. in good consciousness, agree with allowing the hunt to proceed. I do not believe any more whales should be taken. There seems to be no good reason or justification for killing the gray whale in any of the material! read. Although the Makah ancestors may have had to kill whales for survival, I find it offensive that a group of people want to kill a whale for reasons of "self esteem or pride" and particularly "to abstain from alcohol and taking drugs." I find the link between killing a magnificent animal unnecessarily and 'pride' hard to connect. In fact, I would think the opposite to be true in that the word "shame" comes more to mind. With this attitude we stand to lose more than a great whale, but our <'humanness" is also on the line. I think it would callous and a detriment to our civil society to allow this hunt to take place.
Kennedy_06-20-08.pdf	I am strongly opposed to the Makah whaling hunt. They do not hunt for subsistence or cultural tradition. They hunt commercially. All hunting of all whale should be stopped permanently.
Kennedy_07-07-08.pdf	Thank you for hearing my public comment about the proposed gray whale hunt. Research shows that the Northwest Gray Whale has low numbers, according to the scientists at the World Wildlife Fund. The numbers range from 100-200 whales. In addition to that, it seems whales and all marine animals are facing new challenges with the rudimentary beginnings of global warming already in place and as all the climatologists predict, things are only going to get a lot worse and within only 20 years a mass extinction (over half of all known species) of our animal and plant life. The new unrelenting digging for oil and gas feeding grounds of whales will be devastating. Also with the continuing frequent oil spills and pollution from pesticides and other chemicals, the whale populations are shown to have an increasing rate of cancers upon necropsy beached whales; even very young whales. I have to also mention the 'bycatch' problem which kills many whales every year, collisions with large ships, fishing apparatus, and, of course, the international hunting of whales from Norway, Japan and Russ , who flew in the face world opinion even after a moratorium was declared seventy years to bring our whales back from over hunting and the brink of extinction. Personally, I find that the intelligence the whale combined with the social bonds of the whale demonstrate this iconic animal as one to be revered and not sacrificed for the Makah's reasons of ~self-esteem, pride and a distraction against alcohol and/or drugs". I actually find this reasoning to be surprisingly immature and even offensive. I can speak of this as I have Iroquois lineage myself. The Indian Culture always revered life and nature, with animals at the top of the list, and only killed animals out of complete necessity, which no longer exists. The American Indians, as you probably know, found the American settlers somewhat amusing, I'm sure, at the concept of a man owning a tree! One also has to consider the sector of the Makah Tribe who are very against hunt and do not want it to take place in the name of their tribe. They have offered that the whale meat and blubber had been wasted and later found floating and caught by fishing nets. They have protested that they do not use whale products and do not like whale products. With all that is going on in our climate in combination with the old existing threats to whales, and the complete lack of justification for the Makah to take a whale, it is my public comment the hunt should not now or ever take place again. The last aerial footage of the whale being taken by the Makah was horrifically brutal; the Northwest Pacific waters turning red with the blood of this terrified, innocent animal who suffered an agonizing death for 27 minutes according to the anchor person. I believe the people of this country who have compassion for other living things should also have a "say" in what happens to our treasured wildlife - not just those who would kill and exploit. And as a last point, if we allow one subculture to resume old traditions, we must allow all subcultures within our culture to restore their traditions and whatever mayhem that would create.

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Lewinski_08-15-08.pdf	This is to tell you that we are against any form of killing sea mammals on the grounds that “it is cruel” and unnecessary. Let us hope that most people feel the same way.
Livingston_08-06-08.pdf	This treaty must be renegotiated. The "ceremony" of butchering beautiful creatures already in danger of extinction was tragic 150 years ago. Today it is indefensible. Depending on whale hunts for subsistence is not a 2008 reality ..... it's an excuse that hunters of many innocent creatures use to justify their sick form of entertainment.
Marks_06-25-08a.pdf	Thank you for the opportunity to comment on the proposed Makah whale hunt. I fully support the Tribe's request for Alternative 2 in the Draft EIS. I strongly support native treaty rights and especially the Makah right to harvest whales. I hope that you will proceed with all due haste to approve this request and grant the Tribe their authorization.
Marks_06-25-08b.pdf	Thank you for the opportunity to comment on the proposed Makah whale hunt. I fully support the Tribe's request for Alternative 2 in the Draft EIS. I strongly support native treaty rights and especially the Makah right to harvest whales. I hope that you will proceed with all due haste to approve this request and grant the Tribe their authorization.
Marks_06-25-08c.pdf	Thank you for the opportunity to comment on the proposed Makah whale hunt. I fully support the Tribe's request for Alternative 2 in the Draft EIS. I strongly support native treaty rights and especially the Makah right to harvest whales. I hope that you will proceed with all due haste to approve this request and grant the Tribe their authorization.
Mattoni-West_08-13-08.pdf	Treaty or no treaty-----Cultural heritage or no cultural heritage-----Is there not some creative way to celebrate the survival of the Makahs as a tribe without killing whales? Come on now-----The Makahs have made it to the 21st century, Why can't the Makahs help the whales and other endangered species make it thru the 21st also? Why not make December thru May a celebration of living, not killing?
McDermottLetter_071808.pdf	I was recently contacted by Friends of the Gray Whale about their concerns over the deadline for comment on Draft Environmental Impact Statement for Proposed Authorization of the Makah Whale Hunt (DEIS). I am told that the DEIS is a 900 page document with over 800 references. Although a 30 day extension was granted by NMFS, Friends of the Gray Whale contend that reviewing the DEIS simply takes more time than in past versions, and the organization feels that the shorter extension granted was therefore not sufficient. They request a new public comment deadline of Wednesday, October 8, 2008. I have enclosed a copy of their request for a 90 day extension for your information. Your review of their concerns would be most appreciated. Please direct your reply to my District Office at 1809 7th A venue, Suite 1212, Seattle, W A 98101.
McIver_05-16-08.pdf	I am writing to urge that the efforts to kill whales be revoked. The Makah and other tribes have been exploted and damaged and this may be ongoing, but the skills of the 19th century have no place in the 21st century. As skill on the football field does not equate to future success, whaling has no attendant merit. Use of the boats may be a skill to practice but the elder of the previous hunts indicated that the whale meat remained in the freezer until it was no longer viable. The whales are protected and that should stand before all other consideration. The Indian population is devastated by high blood pressure and diabetes. These health issues provoke a concern that perhaps there are other paths to wellness. The organic farming might be a preparation for life that would sustain and revitalize the culture. The current “right” to kill whales aggravated a disdain for the Makah and could be revised with other pursuits that include more mainstream thinking in 2008. It is my hope that perpetuating the environment and regard for the changes that affect us all will be sustained in place of past practices that were grounded in the past.
Moore_06-25-08.pdf	Whales are not indigenous to the WA west coast. Native peoples diets are furthered by those fish that are: salmon, cod-halibut.Fisheries dependent on the local fish ahould be supported in return for a whale – international treaty. If Makah do not support such a fisheries treaties – other tribes would. I expect most tribal elders of the Makah would support such a treaty.

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Nicoletta_07-02-08.pdf	The Makah should NOT be allowed to hunt gray whales. Whales should not be hunted and killed anytime or anywhere by any people. These are socially complex, intelligent mammals whose numbers worldwide have been diminished severely.
NWIFC_08-15-08.pdf	The Northwest Indian Fisheries Commission appreciates this opportunity to provide comments on the Draft Environmental Impact Statement for Proposed Authorization of the Makah Whale Hunt. As you may be aware the Commission is composed of twenty federally recognized Indian tribes with treaty-reserved rights to fish and hunt in Puget Sound or along the Washington coast. These fishing and hunting rights are key components of the culture, economies, and heritage of the Commission's member tribes, including the Makah Tribe. The proposed action crafted by the Makah Tribe (alternative 2) represents a careful and conservative proposal for the resumption of the Tribe's treaty reserved right to hunt whales. The Makah Tribe's proposal provides greater protection for Eastern North Pacific Gray Whales than would be required under the well-established "conservation necessity" principles for state regulation of Indian treaty rights (see discussion at DEIS 1-10-11) and assures that gray whales in the Pacific Coast Feeding Aggregation will continue to be functioning components of the ecosystem. C.f, DEIS at 1-19 (NMFS may not restrict the Tribe's exercise of its treaty right absent showing that MMPA's conservation purpose is not being met). The Commission notes that there are some who argue that the Makah Tribe's decision in the 1920's to stop whaling in order to conserve the species after overexploitation by non-Indian commercial whalers amounts to "abandonment" of its treaty-reserved right to take whales.C.f, DEIS at 1-33. The Tribe's application for a waiver details the historical and contemporary importance of whaling to the Tribe. See DEIS Appendix A at 8-9. The Tribe's decision to stop whaling in the 1920's does not reflect an abandonment of the tradition any more than a farmer' s decision to not divert water when the stream is dry reflects an abandonment of water right. Moreover, the raids by federal agents over the last 50 years searching for whale meat in the homes of Makah tribal members certainly indicates the federal government's belief that the Tribe had not abandoned its tradition. See DEIS at 1-32. Moreover, throughout the Draft the ongoing importance of whaling to the fabric ofMakah culture, ceremony and subsistence is amply demonstrated. The DEIS correctly notes that the tradition of whaling is not unique to the Makah Tribe and that other Pacific Northwest Indian tribes traditionally harvested marine mammals and have expressed relatively recent interest in doing so. See e.g., DEIS at 4-198. Accord United States v. Washington, 384 F. Supp. 312, 372 (W.D .. Wash. 1974). The connection of other treaty tribes to whaling continues to this day. See DEIS at 1-38 (ceremonial involvement of four canoes from various Washington Indian tribes in the landing of whale harvested by Makah Tribe in 1999). Whether or when any other Washington Indian tribe may seek to assert and exercise a treaty-reserved right to hunt whales is entirely speculative and cannot be determined in this NEPA process. While some may attempt to portray the Makah Tribe's request for a waiver as the "tip of the iceberg," the fact remains that the Makah Tribe is uniquely situated and is moving forward on its own. In addition, the evidence before the agency unequivocally indicates that there is no clear cause and effect relationship between granting a waiver and future requests for waivers. DEIS at 4-198 (no evidence that Alaska walrus waiver prompted requests for additional waivers). Accordingly, there is no current basis to assume that granting the Makah Tribe's request for a waiver will influence other tribes to seek to embark on the same pathway. Again, the Commission appreciates this opportunity to provide comments and encourages NOAA Fisheries to continue its efforts to work cooperatively with the Makah Tribe as it seeks to exercise its treaty rights, while assuring that legitimate conservation needs are met.
Oliver_07-07-08.pdf	Thank you for the opportunity to comment on the proposed Makah whale hunt. I fully support the Tribe's request for Alternative 2 in the Draft EIS. I strongly support native treaty rights and especially the Makah right to harvest whales. I hope that you will proceed with all due haste to approve this request and grant the Tribe their authorization.

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Owens_08-14-08.pdf	Please accept these two graphics in "the record" to accompany our e-mailed comments. We did e-mail these too, but they may have been too tiny to decipher. Hope it helps to have these larger versions, that hopefully help make some of our points clearer: - near shore feeding sites - returning whales - hunt locations at feeding sites - large numbers of campers on outer coast in April and May - actual long range of .50 cal. - actual migratory corridor - specific whales (adopted by PCPW) returning year after year to same areas - familial recruitment – whales #43 (mother) and #107 (calf) ATTACHMENT "A" "Whales, campers, and the .50 cal rifle" This graphic is designed to encourage NMFS/NOAA to acknowledge that there are real safety concerns with near-shore whale hunts. Camper data – ONP Resident whales – Cascadia Research Hunt Data – Observer's report (NMFS) Migratory corridor – (Green et al. 1995) ATTACHMENT "B" "Site fidelity, resident whales, and familial recruitment" All sighting data and ID's: Cascadia Research
Pierce_05-27-08.pdf	I must strongly object to allowing ANY tribe or group to kill a whale. I will list my reasons for objecting 1--Whales are Gods creatures. 2--Times and situations change. Yes, in 1855 there were many many whales, but times change. 3--If for religious reasons, other fish could be substituted just as churches have changed to grape juice instead of wine. 4--My biggest objection is that the last one taken in 1999 was left to rot---they didn't even eat it. That sickens me. 5--Strange that after 70 years, the tribe suddenly becomes very religious. It seems there are only a few rabble rousers that are pushing this. 6--All of society has to adjust to the changing ways of our world and the Indian tribes are no different, they are Americans and must abide by our laws. Please consider all of the above. I may not have expressed it well, but my feelings run deep.
Quinault_08-18-08.pdf	The Quinault Indian Nation ("Nation") submits these comments in support of the Draft Environmental Impact Statement ("DEIS") for proposed authorization of the Makah Tribe to resume limited hunting of eastern north Pacific gray whales in the coastal portion of the Tribe's usual and accustomed fishing grounds, off the coast of Washington State, for ceremonial and subsistence purposes. The Makah Tribe specifically reserved the right to hunt whales in its treaty signed with the United States in 1855. The Makah people have hunted whales since time immemorial. As a neighboring Tribe, the Nation fully supports the Makah Tribe in the exercise of its treaty whaling rights. Accordingly, we recommend approval of the preferred alternative analyzed in the DEIS authorizing a waiver of the Marine Mammal Protection Act for the Makah Tribe's hunt of gray whales.

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Reid_07-02-08.pdf	We are against the Makah whale hunts. It is not necessary for their diets. I think that they do it for the sport. I hope that they are not allowed to hunt whales ever again.
Renne_07-03-08.pdf	Please do not let the Makah tribes kill any more whales. The fact that it took hours for the whale to die is enough reason. If they are such good hunters, how could they let that poor whale suffer? I remember that last time they all went hunting, many of the Makah people said they didn't even like the taste of the whale meat. What are they going to do with 5 whales? My vote is NO, NO, NO!!!
Roberts_05-14-08.pdf	thanks so much for including public opinion. I just don't understand how we ever got to the point where the whale killing was sanctioned. If you follow international whaling, the Makah "exception" had terrible ripple effects all through the world. end result: more whales than ever being hunted. How proud am I to live in the state of Washington that sponsored the whole thing. the ocean is polluted with every known chemical and physical relentless barriers and threats of freighters and cruisers. It seems like a miracle that they continue to exist at all. I cannot any treaty that should be honored that includes killing whales. It's like the bible (Deuteronomy) suggesting that sons be stoned for disobedience. things change. mostly with the environment, things get worse and worse for the wild life. PLEASE take the opportunity to protect these beings. DO YOUR PART!
Rorabeck-Siler_08-07-08.pdf	I am writing to express my opinion about the Makah Tribe's request to resume whaling. There is no way of humanely killing a gray whale; therefore we should not even be considering the resumption of whaling, for the Makah Tribe or anyone else. Last September the five rogue Makah hunters demonstrated this well. The gray whale suffered in pain for over 10 hours before succumbing to death. This should be the only criteria considered; therefore Alternate I is the only choice, to not allow hunting, period. NOAA chose a staged photo of the Makah "hunters" in the traditional canoe to put on the front of this draft ElS. This photo is a misrepresentation of what has actually taken place on the water in 1999 and in 2007 I was there personally and witnessed the helicopter spotters, power boats and high-powered rifles and the overall lack of "traditional" and "cultural" ways. The gray whales face depleting food sources, depleting ocean conditions, and an increase in human obstacles in their marine environment. They do not need to also deal with an increase of humans shooting at them in the name of·"culture".
Schanzer_07-02-08.pdf	Thank you for allowing us to speak up on behalf of the Pacific Gray whales. This plea is in reference to curtailing the Makah tribe from slaughtering any more whales. Their past has shown your agency how irresponsible they have been in abiding by the moratoriums set and their use of powered technology and overseas sales to Japan contradicts their usual line of "Nation territory, traditions and customs". How has the temporary restriction on hunting affected their righ1B and culture? Maybe their profits went down but during the temporary ban surely there had been positive outcomes as well. For example: whales had a respite and mated more, ecotourism was increased and therefore those businesses and local economies prospered. Perhaps during this ban the Makah tribe found newer, positive ways to be enterprising. Our opinion serves to support the majesty of whales in our oceans for all cultures to enjoy and not just for a single one to exploit Please make this ban permanent.
Shane_05-21-08.pdf	I have lived and worked among the Makah and Qu:l..leute people for over 30 years. I am very supportive of their treaty rights. I do want them to be able to hunt whales but I want that experience to remain sacred and special so I would like the numbers of whales taken to remain very low. If ever there comes a time when people get complacent and the meat is allowed to be wasted or spoil, the public would rise up against the whole idea. I think the hunts should be carefully monitored as was the first one which was such a great success. Taking a whale or two per year would be perfect. I would not like my name attached to my comments in any publication.
Stroble_05-21-08.pdf	Thank you for sending a disk of the DRAFT Environmental Impact Statement for the Proposed Makah Whale Hunt. I have read it and appreciate the document In reviewing the various alternatives, I will have to go with ALTERNATIVE ONE, which essentially does NOT ALLOW ANY HUNTING OF WHALES BY THE MAKAH TRIBE. Although I can appreciate the position of SOME of the tribal members (not all),

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	there is more than one culture to consider here. Besides that of the Makahs, there is also the culture of a more humane and modem society that is sincerely troubled by the taking of whales for reasons that do not seem to me to be in any way essential. Attempting to revive the whale hunt is NOT going to bring back the "Old times• for native people. The reality is that this Is a different time and place with very different values. I believe the tribe would do themselves a great service to face this reality and find other ways to honor their past, rather than fruitlessly trying to revive it with a whale hunt. Certainly the idea of eating whale meat is NOT going to revive any kind of robust health, when many other factors are at work in the current trends toward obesity and disease. The method of hunting and the injured whales that are not actually taken make the hunt even more distasteful. Besides the cultures of the Makahs and many of the other people who live in the Northwest and have a very different set of values, there is also the culture of the whales themselves. Biologists are pretty much in agreement that indeed whales are intelligent beings who do share a common culture. I cannot find any truly good reason to allow this hunt and would like to as gently as possible communicate to the tribe, that the hunt is over and will not be allowed in this day. Perhaps there are other ways to compensate the tribe that I could support.
Tagland_06-16-08.pdf	This letter represents my objection to the proposal by the Makah Tribe to hunt and kill gray whales or any other whale they may suggest is their right to kill as result of a long cultural tradition and a treaty. The Makah Tribe's desire to kill up to 20 gray whales at a rate of five whales every year for four years is a preposterous request as would be a request to kill even one gray whale. In 1999 this tribe killed a gray whale, their first kill I believe in about 70 years. At that time I wrote letters in opposition to the Tribe's stand on their rights in this arena. I believe they have no rights to kill a whale in today's world. I have not read their 900 page Environmental-Impact Statement. Over the years I have read a few EIS's prepared by developers and found that to support their objectives they often made shallow, even devious statements some outright lies. I cannot imagine that 900 pages are required to justify whaling by an Indian tribe. Such a document will require a thorough analysis to insure that it substantially reflects the Makah Tribe's place in today's world and if it does I do not believe they can justify that a whaling tradition they relied upon many years ago is germane to the Tribe's existence in the United States in this century. More important than statements made in an EIS are the changes mankind has experienced, for example, in at]least the past 200 years. In the distant past the Indians, and particularly in this case the Makah Tribe, lived off the land. They lived in handmade structures using poles cut from trees and animal skins. A medicine-man provided medical care. They fought with nearby tribes to insure their survival. They killed deer, bear and other animals for food. They constructed a large canoe, rowed by Braves, found a whale at sea, killed it with great difficulty using spears made from tree branches, towed the whale to shore by rowing their canoe. The Tribe cut up the whale for food because at that time the nutrition received was essential to the survival oftheir people. At that time the Makah's were real Indians. Today the Makah's are not the Indians of Yore. The world has changed. In the early 1800's when the Makah's needed to kill a whale for their existence the blacks in America were slaves. Today it appears that an African-American may be our next President. Mankind moves on - we don't live in the past. What would be the reaction of the members of the United Nations ifthe Italians restored the Coliseum and reinstated Gladiator "games" for the entertainment of the spectators under the guise of an ancient cultural tradition? When today's Makah's kill a whale their large canoe is towed by a motor boat to the fishing area. They kill the whale with a .50 caliber rifle - more than one shot may be required. Any spears or harpoons are steel and are a secondary weapon in the killing. After killing the whale the large canoe and whale are towed to shore by motor boats. The dead whale is pulled up on the beach by a tractor. This is how they killed and acquired the whale in 1999 and killed their most recent victim. Tell me, where in this scenario is the ancient culture and tradition of a proud people there is none. Today the Makah Tribe are not the Indians of past- they are Americans. My ancestors lived in Norway they were pirates and plundered Europe but I am not a Viking I am an American. I am sure many of the members of the Makah Tribe do not have an Indian name and would be unable to survive off the land in the manner of their ancestors.

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	Keith Johnson, President of the Makah Whaling Commission, certainly has an American name. Members of the Tribe no longer live as the Indians did in the past. They buy food and clothes in stores, any alcoholic beverages come from State Controlled Stores, children are educated in an established school system, sickness is handled in hospitals. I am certain most of these people have a driver's license and a Social Security Number. Their homes are lit by electricity and heated by furnaces. Many Tribes operate casinos today – the financial benefit from this endeavor certainly lifts the Indian people a long way from the lifestyle their ancient traditions would enable them to experience. If the Makah Tribe desires to keep the whaling culture and tradition alive through songs and dances that is an excellent portrayal of their past bravery and skill and I support this action fully, but I do not support a return to whale killing. If a treaty permitting whale killing is still valid the tribe should be asked to accept a termination of the treaty in view of world changes which have essentially voided the applicability of the treaty. If the Makah's do not concur with this approach the terms of the treaty should be abrogated by Presidential Decree. In my opinion the members of the Makah Tribe fighting for the right to kill whales are mavericks, outside the main-stream oftoday's humanity, and if they will not accept where our nation's trends are going they should be confronted directly and dealt with harshly. Harmony between all the peoples of the United States must certainly be our goal. Adherence to achieving our main-stream objectives must be at the forefront of our national will. We as a nation need higher ideals than the Makah's profess. I have been told that some Makah's have said that to ameliorate some of the opposition to their proposal to kill whales whey would only kill migrating whales and would not harm those in residence. This reminds one of the felon out on parole who again stood before a judge charged with assault and robbery of an individual at Pikes Place Market. He plead for clemency because he never violated a resident of Seattle he only attacked tourists. It is my hope that in the resolution of this matter consideration be given to the substance of this letter. I request that a copy of this letter be provided to the Administrative Law Judge charged with considering whether or not the tribe should be granted a waiver from the Marine Mammal Protection Act to allow the hunt. If the Makah's are allowed to hunt whales will such a decision open the door to similar requests from other tribes? It is also my hope that Senator's Murray and Cantwell and Governor Gregoire share my opinions and will express same in this matter. Most certainly their opinion would have considerable weight in this matter.
Temlueull_06-21-08.pdf	According to today's Seattle Times ewspaper the Makah Indian Tribe would like to again hunt gray whales. I am totally against it. It is cruel – unnecessary and a waste. What can they possibly do with all that whale meat/blubber? According to "hearsay" they don't even have enough refrigeration facilities to store it and most goes to waste. It makes one sick!!!
Vittorio_07-03-08.pdf	I appreciate the opportunity to comment on the proposed gray whale hunt by the Makah Tribe. I have reviewed the online sites of the International Whaling Commission, the Marine Mammal Commission, the National Oceanic and Atmospheric Administration, the Bureau of Indian Affairs, The World Wildlife Fund, and carefully reviewed the materials sent to me. My conclusion and comment is two-fold: The first consideration in this decision is the new, and some of the old, threats to whale populations. For the first time in recorded history we stand at an ecological crossroads with global warming, including all of the ramifications of warming seas and the impact increased temperatures will have on our marine life. Whale populations are extremely vulnerable to increasing ocean temperatures and degradation of habitat. Just this week the top NASA scientist and climatologist, Dr. Jim Hansen, declared that global warming is already here and stated the consequences will be felt in many ways including mass extinction, collapse of the ecosystem, and warming, rising seas. Already there is evidence of disruption of whale migratory patterns in search of food. Also, for very important consideration, is the new urgent quest in finding offshore oil and gas in feeding grounds. In addition, scientists have stated that industrial chemicals and run-off pesticides are making our oceans a literal 'chemical cocktail', accumulative in whale blubber and evidenced by cancers in even very young beached whales. In general, for all species of whales, the international hunting of whales (increasing every year) and whales being

COMMENTER	COMMENT
	caught as a "by-catch" product is devastating as well. In particular, and specifically, I have come to learn that the target whale here, the Western North Pacific gray whale's numbers are estimated to be very low. The gray whale has the longest migration of all whales at 12,000 miles per year, always in peril of killer whales who hunt the calf and the mother, in addition to all the above threats which plague all species of marine mammals. In summary, whales are facing extreme challenges for future survival. The second part of my comment and conclusion is the "justification" that the Makah Tribe is offering for the hunting of gray whales in the North Pacific. In their application the Makah have expressed their reasoning for hunting the gray whale primarily would be for "pride, self-esteem, and a reason to abstain from alcohol and drug use." The latter reason given to kill a whale may be considered by people as offensive. This serious taking of a marine mammal and all of the carnage involved with doing that, should not be a temporary distraction from substance abuse. I do understand pride in culture but certainly, in the name of fairness, if America were to change her laws to allow and protect all of the subculture traditions and rituals in this diverse country, we would have to make legal and allow populations of people to resume cock fighting, dog fighting, and animal sacrifice, just to mention a few. It is no longer 1855, the year the Neah Bay Treaty was signed to allow the hunt of the gray whale. Since this time, aside from the real threat of driving these animals to extinction thus declaring a moratorium, we have learned much of the behavior, intelligence, family orientation, and even the nobility these animals demonstrate. I do realize the unemployment problem causing economic hardship in some of the Indian Tribes, which nods to the subtle, but somewhat obvious idea, that the Makah Indian Tribe could turn their economy around; to instead honor the whale that helped them to survive in 1855, and perhaps embark in a business venture of whale watching tours. The Makah are certainly in the right region of the world for the popular and profitable business of ecotourism, with the advantage of their great knowledge of the gray whale and the migratory patterns. I am also aware of the Makah Tribe members who are totally against the resuming of whale hunts and have protested. They do not use or like whale products and have claimed that much of the whale meat is wasted, as in the past they have retrieved whale meat and blubber in fishing nets. As you realize my comment is NOT to allow the gray whale hunt to take place for all the above reasons. I would like to add that I have a great respect for American Indian culture, but I think most would agree that we all come from a subculture, however, needs and times change, we move on, and while still having pride in our heritage, realize what once may have been necessary no longer applies or works to better our lives in this brave new world.
Voight_07-07-08.pdf	Now retired, I have worked as a lineman for some 25 years from Fairbanks to San Diego, Detroit to Portland. During this period I lived likje a hobo in a camper with a dog as a hiking partner. Of all the wonderful wildlife experiences, none approaches the time (in the late 90's) my dog and I had a close (50') encounter with a gray whale near Greenbank on Whidbey Island. Without going into detail here the whale sat offshore in a shallow inlet and made eye contact with us and subsequently charged us playfully as we stood on shore. A man couldn't ask for a more spiritual encounter with another living creature. I will cherish those minutes forever. Although having previously considered the issue of whaling, I felt obligated to uphold the treaty rights of US tribes. Having lived in areas and around those (native and white) who live a subsistence life, I have also accommodated legitimate harvest of wildlife. I have also unfailingly supported the legitimate rights of native people. Nonetheless, the pro-whaling faction of the Makah tribe revulses me. They remind me of a bunch of Alabama rednecks, Idaho NRA members. Men lacking self-confidence needing the prove their masculinity with others' blood. I still understand their anger, bitterness, spite and being a thoughtful, deliberative man am able to overlook their (native) weaknesses, as their culture is shattered. But combined with the sacred life of whales and the unnecessary harvest for subsistence, I advocate rescinding this treaty right. This said, I believe I understand this is not likely or even the issue at hand. Science though does demand that the population be sufficient to certainly withstand any harvest. This brings of Japanese Norwegian Russian whaling. Any whaling by

COMMENTER	COMMENT
	these countries (non-tribal) should trigger serious sanctions by the US people. How disgusting, vicious for such wealthy, supposed civilized people to do such things.
Whichello_08-13-08.pdf	I wish to express my outrage with the proposed NMFS allowance of Makah whale hunting and harassing. It is as reasonable to me as a statement of how many slaves I might have as my ancestral right. As whales, porpoises, and the great apes are recognized as intelligent, communicating animals, and as our American culture deems killing them as wrong, I think it biased to exempt any group from these recognized norms. We disagree with these actions on the part of Iceland and Japan; why would we be so hypocritical as to grant such a "right" to a group in our own country? And it is certain that those who take part in this "right" with modem weapons and disregard for the safety and laws of others, reap a sad harvest of disdain, dislike, and division.
Wiley_05-27-08.pdf	I have read the Draft EIS and other materials included in the May 9, 2008 release from your office and wish to submit the following comments. I am also included a column written by Judith Pine as guest columnist in the May 20, 2008 Seattle P-I. My letter and feelings basically say amen to her position. The Executive Summary of the EIS says: "The Tribe's proposed action stems from the 1855 Treaty of Neah Bay, which expressly secures the Makah Tribe's right to hunt whales." The United States government has abrogated many treaties with the Indians but this, and probably many earlier ones, seem so clear cut that it is difficult to understand why there is any question about honoring it and allowing the Makah's to hunt on their "usual and accustomed fishing grounds." I strongly support their rights and urge NOAA to act in a manner that will fully honor our government's valid treaty with the Makah tribe. The Makah's well reasoned request of February 11, 2008 voluntarily sets limits on their treaty rights which seem very reasonable and generous. I feel that the alternative selected by NOAA should clearly be the one that most nearly accepts and honors this offer.

Attachment 3: 1993 Monitoring Plan

Items in the first column are verbatim from the 1993 monitoring plan, though not all are included in their entirety. The second column describes research undertaken by NMFS and others to address the research activity identified in the first column.

(1) Monitor the status of the gray whale and habitats essential to its survival.	
1.1 Conduct a biennial population survey to include: 1.11 **A survey of the southbound migration for comparison with historical data in the winters of 1993/1994, 1995/1996, and 1997/1998 to assess trends and the level of recovery.**	These surveys occurred (Described in Rugh et al. 1999).). Laake et al. (2009) describe the entire NMML time series and Durban et al. (2010, 2011) detail the most current surveys conducted by SWFSC.
1.12 **Carry out research as needed to determine any potential biases in the estimation of procedures (e.g., offshore distribution, tails of the migration, night-time migration rates).** Research will be conducted to **investigate potential sources of bias in the current survey methodology** and to improve estimation of the correction factors. Currently identified research areas are outlined below.	See below.
Night vs. day rate of passage: **Experiments with a thermal sensor, which allows an observer to detect whale blows at night and day, will be conducted to improve measurement of passage rates of whales during evening and daylight hours.**	This research was conducted (Perryman et al. 1999)
Double-count: The sensitivity of the double-count correction factor to changes in the parameters used in the matching algorithm needs to be studied. The current variance estimate does not include uncertainty in matches and the true variance is likely much larger than the estimated variance. The logistic regression model contains passage rate and distance offshore as covariates that increase the probability of detecting a whale pod (Buckland et al. 1993a). This may indicate that	This research was conducted and is described in Rugh et al. (1999)

the algorithm is more likely to find a match when the distance between whale pods decreases. **Further research is needed on the development of a matching algorithm.**	
Offshore distribution: The aerial survey provides an empirical estimate of the distribution of the offshore distance that whales are travelling. It is possible to use this empirical distribution as a prior distribution to construct an estimator of the probability of missing a whale pod using distance sampling (Buckland et al 1993b). **In the planned aerial surveys, tracklines will be centered closer to Granite Canyon and GPS will be used to obtain more accurate distance measurements than have previously been available.** With this alternative estimation scheme, double-count data will be used to estimate the probability a whale is missed close to shore (< 0.75 nm). Matches between observers are more certain for whales within 0.75 nm because they occur less frequently.	Aerial surveys were conducted and are described in Rugh et al. (1999)
1.2 Estimate population productivity using: 1.21 Data obtained from life history studies, as may be appropriate, such as proportion of mature females that are pregnant taken in subsistence hunts. **A research project has been initiated to reanalyze the past pregnancy rate data** in light of the area and month in which the animals were captured, to determine if the apparent inter-annual decline is real, or an artifact of sampling (see section 4.2). This project is being conducted jointly between SWFS Scientists and Russian scientists closely familiar with the data. These data will be supplemented with information on the length frequency distribution of animals during the northbound migration, using photogrammetric techniques (see section 1.22).	*Joint project with Russian scientists was completed but couldn't locate report.* SWFSC completed photogrammetric studies of whales in the northbound migration. These studies are described in Rugh et al. (1999).

1.22 Data obtained from survey of northbound migration in the spring of 1994 for comparison with cow-calf counts from the early 1980 and the pregnancy data from the Russian subsistence harvest. **The Southwest Fisheries Science Center will conduct a shore-based visual survey of north migrating cows and calves, from 15 March to May 31, 1994. The study essentially will replicate the 1980 and 1981 surveys conducted by Poole (1984a).**	Shore-based northbound calf counts occurred in every year from 1994 through 2012 (Perryman et al., 1999; Perryman and Weller, 2012) and are described in Rugh et al. (1999) and elsewhere.
1.3 Conduct research as needed to determine the dependence of the population on specific areas for feeding and breeding.	See details below.
1.31 **Determine the importance to breeding success of optimum habitat within the calving lagoons along the west coast of Baja California, Mexico.** While it may never be possible to definitively determine the degree of dependence of gray whales on the coastal lagoons of Baja California, recent sightings of newborn calves during the southward fall migration from central California to the U.S.-Mexican border raise question as to necessity of the coastal lagoons as calving and calf-rearing areas for gray whales. It would appear that the lagoons may be preferred habitats for females with calves, but the benefits to calf survival would need to be assessed both inside and outside the lagoon systems. It is assumed that the protected lagoon waters, their lack of predators, and high concentrations of female-calf whales within the lagoons are advantageous to calf survival during the first few months of the calves' lives. One approach to testing this assumption would be to compare calf mortality within lagoon habitats to that outside the lagoon areas along the migration route. For example, one could compare, by radio-tagging the mothers, the survivorship of calves born during migration with those born or newly-born within any of the lagoon systems in Baja California. Looking at calf stranding rates or surveys of calf abundance are too fraught with bias and error to allow valid comparisons.	Dr. Bruce Mate received a grant to radio tag gray whales in the Mexican breeding lagoons during 1996-1999, but received permission from the Mexican government to tag whales in only one lagoon for one year (Mate 1999). Several studies have been conducted in the lagoons since 1999 (Urban et al. 2002; Urban et al. 2007), including a tagging study by Mate (2006).

1.32 Determine the status of benthic amphipod standing stock within the population's summer feeding range in the Bering and Chukchi Seas. **Preliminary information available at the 1990 IWC Comprehensive Assessment of gray whales indicated that the prey resource for gray whales was showing signs of over utilization. This preliminary observation should be followed up with a comprehensive status assessment. This may have been done, or be in progress. The task group should contact benthic ecologists specializing in this topic at the University of Alaska to determine the availability of this information, and if action is required on the part of NMFS.**	Some studies have been done of gray whale prey status in northern feeding areas (e.g., Moore et al. 2003; Grebmeier et al. 2006; Coyle et al. 2007; Pyenson and Lindberg 2011), though there has been no comprehensive assessment of the status of gray whale prey in northern feeding areas.
(2) Continue monitoring the level and frequency of gray whale mortality through small take and commercial fishery exemptions, stranding programs and other activities.	
2.1 Monitor the annual number of strandings by age and sex classes along the west coast and Alaska through the existing stranding networks. Through the regional stranding network coordinator, NMFS' Office of Protected Resources is the recipient of reports from the regional stranding networks throughout the United States. **Once implemented, the gray whale research and monitoring plan will recommend that NMFS regularly solicit and review stranding records for gray whales in those regions in which they occur, and identify any unusual changes in the regional stranding rates.**	Through its stranding network, NMFS has continued to monitor gray whale strandings. These are reported in the stock assessment reports.
2.2 Estimate the number of animals incidentally killed by age and sex classes by fisheries in California, Oregon, Washington, and Alaska. Amendments to the Marine Mammal Protection Act require that incidental takes of marine mammals, including gray whales, be reported to the NMFS by fishermen and other individuals that incidentally "take" them. These records are compiled and reviewed by	This information is reported in the stock assessment reports.

the NMFS' Office of Protected Resources, and any trends in the rate of takes by specific vessels, fisheries, or other sources are assessed and mitigation actions recommended.	
2.3 Monitor the number of animals legally killed and taken under small take exemption authority of the MMPA. As part of this research/monitoring plan, NMFS' Office of Protected Resources will monitor, assess, and report the number, age and sex composition of all gray whales taken under Section 101 (a)(5) of the MMPA.	This information is reported in the stock assessment reports.
(3) Evaluate the results of status determinations for gray whales based on recently developed assessment techniques.	
3.1 Complete the report that presents information on abundance and trends in abundance, based on data that includes estimates from the southbound migration in the winter of 1992/1993. The estimated annual rate of increase of the eastern Pacific gray whale population is 3.3% (CV = 0.4%) over the period 1967/68 -1987/88 (Buckland and Breiwick in press) and the current population estimate is 20,869 (CV = 4.4%), based on the 1987/88 shore count data (Buckland et al. 1993a). The most recent shore count of the southbound migration was made December 1992 –January 1993 and these data will be analyzed to provide an abundance estimate for 1992/93 as well as an updated annual rate of increase.	NMFS has completed a number of reports on gray whale abundance since 1993, including Laake et al. (2009), which included a retrospective analysis of the entire record of southbound counts. Moore et al. (2013) provides updates on counts through 2011.
3.2 Complete the report on status that includes: 3.21 Historical estimates of abundance based on standard back-calculation models. Several researchers (Reilly 1981; Lankester and Beddington 1986; Cooke 1986; Butterworth et al. in press) have demonstrated that gray	It is not possible to reconcile the records of commercial gray whale harvest, the observed growth rate, and the assumption that gray whales were at carrying capacity in 1846, prior to the commencement of commercial hunting (Butterworth et al. 2002). Instead of seeking to estimate a pre-exploitation carrying capacity, Punt and Wade (2012) applied Bayesian analysis to the population

whale population trajectories which pass through a current population estimate and utilize the available historic commercial catch data are inconsistent with the commercial extinction of the stock at the end of the 19th century and with the observed rate of increase of the stock. Cooke (1986) employed a simple back-calculation model using a range of current population sizes and net recruitment rates and demonstrated the problem that others have encountered: all combinations of parameters imply an 1846 population level lower than the current level. Cooke suggested four possible explanations for these results: i) historical catches were underestimated; ii) the recent net recruitment rate or population size has been overestimated; iii) the population was already at a low level prior to 1846; or iv) the recent population increase is not a result of a simple density dependent recovery from previous exploitation. An extensive review of aboriginal whaling for gray whales of the east Pacific stock by Mitchell and Reeves (in press) suggest that the early aboriginal kill may have been on the order of 100% more than documented. This alone, however, does not resolve the above mentioned inconsistency. Butterworth et.al. (1990) determined that a model which incorporates an additional response delay in recovery from exploitation produced unrealistic population oscillations. Consistent results can be obtained if any of the following adjustments are made: 1) the carrying capacity is allowed to increase by a factor of 3 from 1846 to 1988, or 2) the historic commercial catch from 1846 to 1900 is increased by a factor of 1.5 and the annual aboriginal catch prior to the commercial fishery is at least 400. Results appear to be relatively insensitive to values assumed for the biological parameters of the population model (natural mortality rate, age at first parturition, age at recruitment and MSY level) but sensitive to assumptions about data inputs (current population size accuracy and male:female sex ratio assumed for catches).	trajectory to conclude the ENP stock is at the current carrying capacity of its habitat.

3.22 A Bayesian synthesis approach to evaluating the status of the eastern stock of North Pacific gray whales. Raftery et al. (1992) have developed a Bayesian synthesis approach for making inferences from a deterministic population model with many inputs and outputs. Their approach consists of defining a joint prior, or, in their terminology, a pre-model distribution, on the model inputs and outputs for which there is evidence independent of the model. By sampling from the pre-model distribution and using the population dynamics model, a post-model distribution for the parameters is obtained from which inferences can be drawn. They employ the SIR (sampling importance resampling) algorithm to evaluate the posterior (post-model) distribution. Some of the benefits of Bayesian synthesis methodology are 1) reduction in variance of model parameters, 2) joint and marginal probability density functions for all model inputs and outputs are provided, 3) contributions to variance by each factor can be estimated, and 4) new questions of interest can be formulated and answered after the primary analysis is complete. The Bayesian synthesis method is currently set up for bowhead whales and is programmed in the S language. Givens and Punt (pers. comm.) are rewriting the S code in FORTRAN and this should be available in January 1994. Using the available historical catch series and our knowledge of gray whale biological parameters, the Bayesian synthesis program developed for bowhead whales can be modified for use with gray whales.	Punt and Wade (2012) applied a Bayesian analysis to the ENP gray whale abundance estimates to conclude the stock is at the current carrying capacity of its habitat.
(4) Continue monitoring, through participation in the IWC Scientific Committee, the magnitude and composition of the subsistence harvest of gray whales by Russians.	
4.1 Continue participation in IWC Scientific Committee, the SC's subcommittee on Protected Stocks and reviews by the SC on the status of gray whales.	NMFS scientists have continued to participate in the IWC scientific committee gray whale reviews.

4.2 Continue cooperative research with the Russians concerning seasonal and geographic factors that may have biased the apparent downward trend in pregnancy rates of animals taken for subsistence purposes. A research project has been initiated to reanalyze the past pregnancy rate data in light of the area and month in which the animals were captured, to determine if the apparent inter-annual decline is real, or an artifact of sampling. This project is being conducted jointly between SWFS Scientists and Russian scientists closely familiar with the data. The analyses may point to the need for additional research, including collection and analysis of data from future subsistence fishery takes.	*Joint project with Russian scientists was completed but couldn't locate report.*
(5) Monitor the levels of contaminants in gray whales, including organochlorines (e.g., PCBs, chlorinated pesticides) and heavy metals.	
5.1 Collect tissue samples from stranded animals along the west coast and from the Russian subsistence harvest and analyze for contaminant levels. Tissue samples from stranded gray whales will be analyzed for toxic chemical contaminants to assess the distribution of contaminants among potential target tissues, to begin to assess trends in contaminant levels, and in the case of concentrations of chlorinated hydrocarbons in blubber for comparison to concentrations in apparently healthy free ranging whales.	There have been a number of studies of contaminant levels in gray whales (e.g., Krahn et al. 2001; Tilbury et al. 2002; Fossi et al. 2012).
5.2 Refine the method for collecting biopsies from free ranging animals during the northbound and southbound migrations analyze tissues collected for contaminant levels. The continuation of developmental studies is needed to optimize the dart method for collecting biopsy samples from gray whales including the need to sample southbound whales.	Biopsy sampling of gray whales is a methodological staple of most research programs. Existing equipment (Larsen bolts and sampling tips) works very well with gray whales. Contaminant level studies on gray whales have been conducted by a number of investigators (see 5.1)

Biological Report on the Eastern North Pacific (ENP) Gray Whale Stock

Prepared by the West Coast Region of the National Marine Fisheries Service to support the analysis of the proposed waiver and regulations authorizing a limited hunt of ENP gray whales by the Makah Indian Tribe.

March 2019

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Introduction

This biological report analyzes in part the waiver of the Marine Mammal Protection Act (MMPA) take moratorium and accompanying regulations proposed by the West Coast Region of the National Marine Fisheries Service (NMFS) in response to a request by the Makah Indian Tribe (Tribe) to resume limited hunting of gray whales (*Eschrichtius robustus*) from the Eastern North Pacific (ENP) stock in the coastal portion of the Tribe's usual and accustomed fishing area (U&A; Figure 1) for ceremonial and subsistence purposes. The *Federal Register* Notice announcing the proposed waiver and regulations addresses all applicable statutory requirements; key elements of the regulations are summarized in Appendix 1. This biological report provides supplementary information analyzing three specific requirements of the MMPA found in Section 101(a)(3)(A) that the proposed waiver must:

1. Have due regard to the distribution, abundance, breeding habits, and times and lines of migratory movements of the marine mammal stock potentially subject to take;
2. Be supported by a finding that the taking is in accord with sound principles of resource protection and conservation as provided in the purposes and policies of the MMPA; and
3. Be based on the best scientific evidence available.

The following discussion addresses each of these statutory requirements, focusing on the ENP stock of gray whales because the Tribe specifically requested an MMPA waiver for this stock. A feeding aggregation of the ENP stock known as the "Pacific Coast Feeding Group" (PCFG) may also be taken during a hunt so we address those whales as appropriate in this report. Further, because NMFS has determined that the PCFG may warrant consideration as a stock in the future (Carretta *et al.*, 2017), we have included a description of that issue in Appendix 3 of this report and summarized some of the many past and ongoing research and monitoring activities and assessments addressing the ENP gray whale stock in Appendix 4.

1. Distribution, abundance, breeding habits, and times and lines of migratory movements of the marine mammal stock

The statute describes four factors relevant to the biological characteristics and status of a marine mammal stock that must be considered in proposing a waiver. In addition to these four factors, this report addresses the status of the ENP gray whale stock relative to its optimum sustainable population (OSP) level[1] and also describes the stock's feeding ecology. We included these biological characteristics because they are also relevant to determining whether the proposed

[1] The MMPA defines OSP as "the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem in which they form a constituent element." 16 U.S.C. § 1362(9). NMFS regulations further define OSP as: "[A] population size which falls within a range from the population level of a given species or stock which is the largest supportable within the ecosystem [known in biological terms as carrying capacity, abbreviated as K] to the population level that results in maximum net productivity [known as the maximum net productivity level, or MNPL]." 50 C.F.R. § 216.3.

waiver is in accord with sound principles of resource protection.

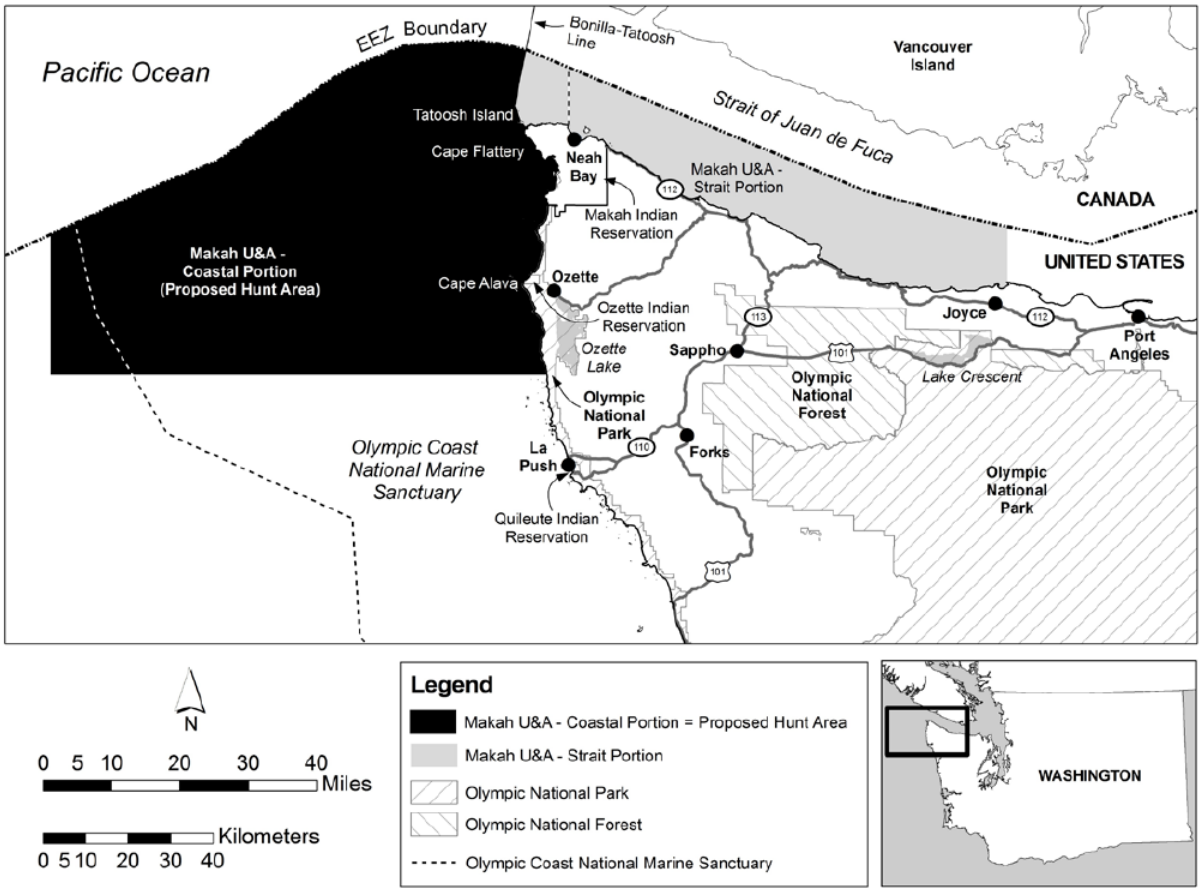

Figure 1. Location of proposed hunt area within the Makah U&A.

a. Distribution

ENP gray whales generally migrate seasonally along the coast of North America between a summer range as far north as the Chukchi and Beaufort Seas and a winter range as far south as the Baja California Peninsula and Gulf of California in northwestern Mexico (Rice *et al.*, 1984; Urbán-Ramírez *et al.*, 2003; Figure 2). While most ENP whales migrate north of the Aleutian Islands/Alaska Peninsula, a feeding aggregation known as the "Pacific Coast Feeding Group" (PCFG) generally remains south of the Alaska Peninsula throughout the summer to feed (Darling, 1984; Calambokidis *et al.*, 2002; Gosho *et al.*, 2011; Calambokidis *et al.*, 2014). Not all PCFG whales spend every year in the PCFG area. In addition to these PCFG whales, there are also 'straggler' or 'transient' gray whales (International Whaling Commission [IWC], 2012a; Calambokidis *et al.*, 2014) that are only seen feeding in the PCFG area in a single year (presumably using northern feeding grounds in other years).[2]

[2] The NMFS stock assessment report currently defines the PCFG consistent with the International Whaling Commission definition (IWC, 2011a,b,c), as gray whales observed in at least two years between June 1 and November 30 in the eastern North Pacific between 41° N. latitude and 52° N. latitude (excluding areas in Puget Sound).

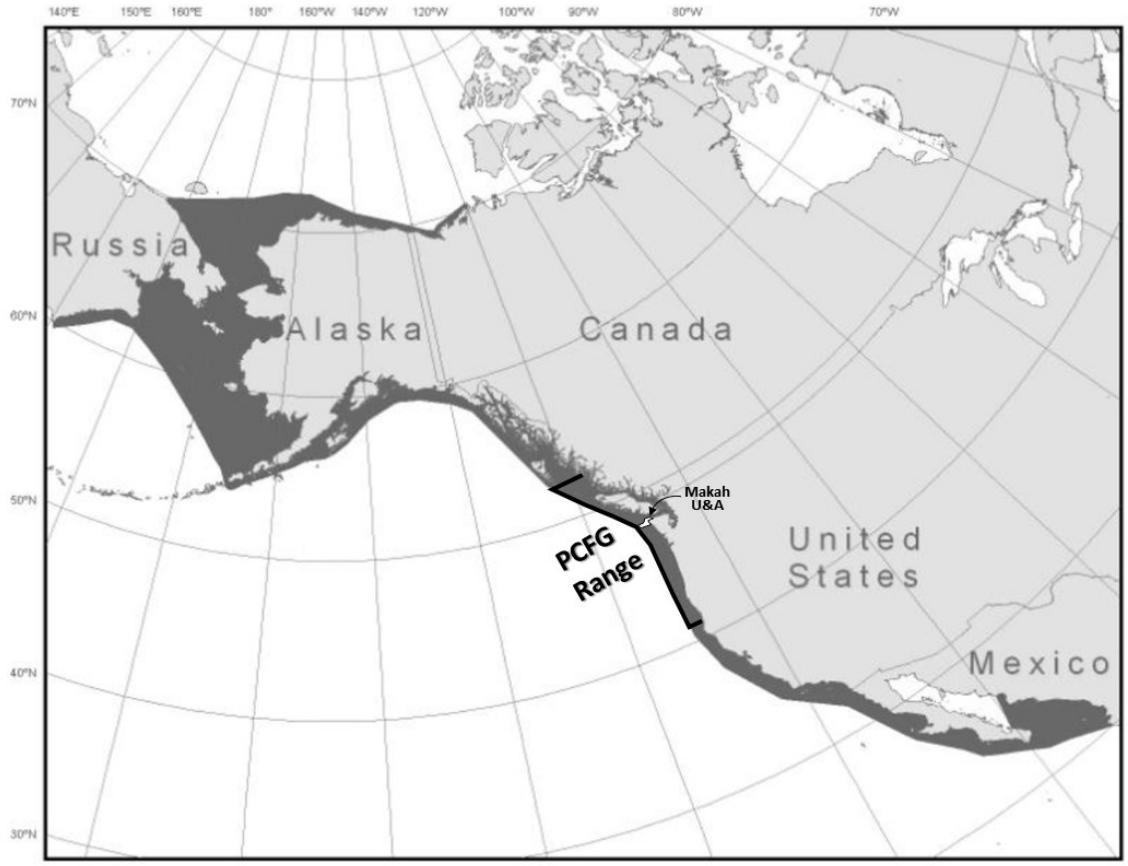

Figure 2. Approximate distribution of the Eastern North Pacific stock of gray whales (shaded area) and PCFG summer range (adapted from Carretta *et al.*, 2017).

The bulk of the ENP population forages in a summer/fall range north of the Aleutian Islands in areas commonly referred to in the literature as the northern seas (Nerini, 1984; Gardner and Chávez-Rosales, 2000) and also referred to as primary, principal, traditional, northern, or summer feeding grounds (e.g., Braham, 1984; Nerini, 1984; Swartz, 1986; Darling *et al.*, 1998; Moore *et al.*, 2000; Dunham and Duffus, 2002; Findlay and Vidal, 2002). In addition, sizeable aggregations of gray whales (up to 400 animals) have been reported during the late spring and summer off southeast Alaska, especially near Kodiak Island (Moore *et al.*, 2007; Gosho *et al.*, 2011). These sightings are north of the PCFG's defined range and south of the primary summer range used by most ENP whales. Little is known about these southeast Alaska whales except that there appears to be some consistency in their occurrence and some have been sighted further south in the PCFG area (Moore *et al.*, 2007; Gosho *et al.*, 2011). The discussion that follows focuses on the northern foraging areas used by the vast majority of the ENP population.

ENP whales usually arrives in the Bering Strait by the end of May (Yablokov and Bogoslovskaya, 1984). Whales are distributed as far east as the Canadian Beaufort Sea (Rugh and Fraker, 1981), as far west as the Eastern Siberian Sea along the coastal shelf of Siberia and near Wrangel Island (Berzin, 1984; Reilly, 1984; Miller *et al.*, 1985; IWC, 2006), along the north and south coasts of the Chukotkan Peninsula (Berzin, 1984; Miller *et al.*, 1985), at shoals in the northeastern Chukchi Sea near Barrow, Alaska (Moore *et al.*, 2000), and in the northern Bering and

southern Chukchi Seas in areas between the Bering Strait and St. Lawrence Island (Moore *et al.*, 2003).

The primary factor influencing distribution and habitat selection appears to be availability of prey (Moore, 2000; Clarke and Moore, 2002). The overall abundance of the gray whale population also probably influences distribution in the northern portion of the summer range (and elsewhere) because, as the ENP gray whale population increases, the range may expand as individuals forage more widely for food resources (Moore *et al.*, 2007). Rugh *et al.* (2001) proposed that the week's delay in southward migration timing after 1980 may have been due to a wider distribution of the population as their search for food covered increasingly greater areas, making the trip south longer. This effect, of a larger population leading to a wider dispersal, was also noted by other authors (Yablokov and Bogoslovskaya, 1984; Stoker, 2001).

Whales in the northern portion of the summer range exhibit constant and extensive local migrations between feeding areas; they do not stay in one area for the entire season (Yablokov and Bogoslovskaya, 1984; IWC, 2006). Long-term shifts in the summer range have also been described recently and are thought to be related to the operation of two major oceanic climate cycles: the Arctic Oscillation and the Pacific Decadal Oscillation. These two cycles generally occur in the North Pacific every 10 to 30 years, last 30 to 40 years, and have distinct warm and cool phases caused by changes in sea surface pressure and sea surface temperature (Mantua, 2002; Mantua and Hare, 2002).

The Bering Sea (northern Bering and southern Chukchi Sea) was once considered the primary gray whale feeding ground (Braham, 1984; Moore *et al.*, 1986; Kim and Oliver, 1989; Moore *et al.*, 2000). During the late 1970s to early 1980s, it was characterized by cold climate conditions with extensive seasonal ice cover and high benthic productivity (Grebmeier *et al.*, 2006). Time-series studies from the Chirikov Basin (between St. Lawrence Island and the Bering Strait) show that in 1980, Ampeliscid amphipods were the primary prey items of gray whales, sampled at record-high densities from the 1970s to mid-1980s (Stoker, 1981; Yabolokov and Bogoslovskaya, 1984; Grebmeier *et al.*, 1989; Highsmith and Coyle, 1990). The amphipod prey base declined by 30% between 1986 and 1988 (Highsmith and Coyle, 1992; Sirenko and Koltun, 1992). This reported decline in benthic biomass did not have an immediate observable effect on gray whale abundance. A subsequent gray whale mortality event in 1999/2000, coupled with observations of emaciated whales, led scientists to conduct aerial surveys of the Chirikov Basin in 2002 to compare distribution and relative abundance with the 1980s data (Moore *et al.*, 2003). Sighting rates of gray whales in the Chirikov Basin were 3 to 17 times lower than they had been in the 1980s (Moore *et al.*, 2003; Grebmeier *et al*,. 2006). Benthic productivity of the prey base had declined precipitously, and only the southern Chukchi Sea supported dense aggregations of whales (Moore *et al.*, 2007).

The Bering Sea is now characterized by warmer conditions with less sea ice cover and lower benthic productivity than in the 1970s (Grebmeier *et al.*, 2006). Gray whales have responded by foraging in other areas (Moore *et al.*, 2003; Moore, 2005; Moore *et al.*, 2007). Observers are now seeing larger feeding aggregations in different parts of the northern portion of the summer range, north of the Bering Strait in the south-central Chukchi Sea and just north of St. Lawrence Island in the northern Bering Sea (south of the Chirikov Basin), an area that was previously recorded as devoid of gray whale feeding (Clarke and Moore, 2002; Moore *et al.*, 2003).

Scientists reported at the 2006 IWC Scientific Committee meeting that a large proportion of

17 satellite-tagged whales fed extensively in the Chukchi Sea; six whales retained their tags for more than 100 days, and all six spent most of their time in the Chukchi Sea (IWC, 2006). Stafford *et al.* (2007) noted that gray whales were once rare visitors to the Beaufort Sea, but their numbers have been increasing since the mid-1990s. In 2003/2004, these researchers deployed acoustic recorders in the Beaufort Sea and unexpectedly detected gray whale calls throughout the winter near Barrow, Alaska. Additional analysis revealed that there was sufficient ice-free space for gray whales to surface and breathe, so it is unlikely that calls came from animals that were entrapped in the ice (Stafford *et al.*, 2007). These studies support the possibility that gray whales are altering their foraging habits in the Arctic. Observers have also documented feeding that has not been seen previously in the southern portion of the summer range, such as near Kodiak Island and in the Gulf of Alaska (near Sitka) (Moore *et al.*, 2003, 2007; Gosho *et al.*, 2011).

In a general sense, gray whales using the PCFG area exhibit a migratory pattern similar to that of whales in the larger ENP stock, spending winter months in the waters near the Baja California Peninsula and Gulf of California in northwestern Mexico. The difference is that PCFG whales do not make the full migration north each year, stopping instead to spend the summer and fall months feeding off the west coast. Not all PCFG whales are seen every year during the feeding season in the PCFG area. The following discussion describes the migratory movements of this subset of the ENP stock.

Individual whales can be identified by distinguishing physical characteristics, and researchers began conducting photo-identification studies of gray whales off the west coast in the 1970s. From 1998 to the present, NMFS has funded and collaborated with Cascadia Research Collective (Cascadia), the Makah Tribe, and other researchers to conduct photo-identification surveys of gray whales, primarily in the range of the PCFG. Within this range there are several survey areas, so designated for research purposes. Figure 3 shows the location of key survey areas associated with the PCFG range and Makah U&A, and Figure 4 identifies the specific survey areas within and near the PCFG range.

From the photographs of all researchers participating in the Cascadia project, 1,638 unique whales have been identified from southern California to Kodiak, Alaska (Calambokidis *et al.*, 2017). Of those 1,638 whales, 793 individual whales were identified at least once in the PCFG seasonal range (i.e., June 1 to November 30 between northern California and northern British Columbia). Of the whales sighted during 1996 to 2015, approximately 48% were identified at least twice in the PCFG seasonal range.

The photo-identification efforts collectively have demonstrated that some PCFG whales remain for extended periods in the PCFG areas and that some of the whales return to the same general feeding areas in later years, though not necessarily every year (Darling, 1984; Calambokidis *et al.*, 1994; Calambokidis *et al.*, 2017). The studies also demonstrate that many of the gray whales photo-identified were not re-sighted in subsequent years, that new individuals were photographed every year, and that some whales inhabited different areas in different years (Darling, 1984; Calambokidis *et al.*, 1994; Calambokidis *et al.*, 2017).

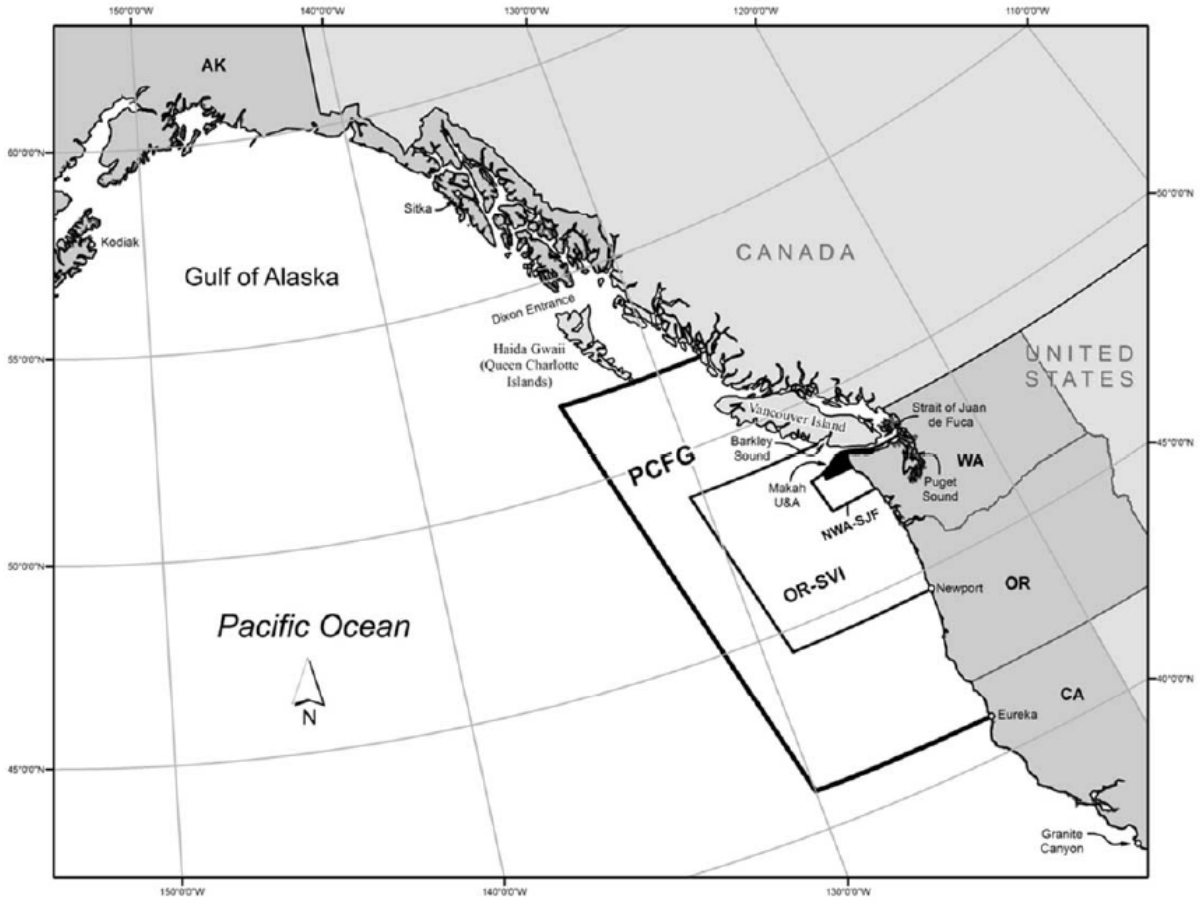

Figure 3. Location of Makah U&A and adjacent survey areas within the PCFG range.

Of the 793 whales identified in the PCFG seasonal range since 1996, 750 animals were first seen prior to 2015 (and so had the opportunity to be seen at least twice) (Calambokidis *et al.*, 2017). Approximately 52% of these animals (388 whales) have never been re-sighted, which demonstrates that many of the newly seen whales did not return in a subsequent year. However, a number of whales have been sighted during the summer in the PCFG range in each consecutive year after their first sighting. For example, 9.3% (70 whales) of the 750 whales were seen in every summer after their initial identification, including 5 whales that were seen in all 20 years since 1996. The remaining 39% (292 whales) were seen more than once but not in every year.

Many whales have an intermittent sighting history, some of which may be explained by sightings in areas adjacent to the PCFG range. For example, some whales were seen in Kodiak and southeast Alaska in years that they were not seen in the PCFG range (Calambokidis *et al.*, 2014; Calambokidis *et al.*, 2017). In addition, Calambokidis *et al.* (2012) reported on one PCFG whale (seen multiple summers in the PCFG range) that was later sighted in the summer at one of the most distant Arctic feeding areas near Barrow, Alaska. The extensive inter-year movement of whales partially explains the gaps in the observations for some whales and the disappearance of others from the PCFG. It appears that many whales are only part of the PCFG temporarily.

Individual Survey Areas (Area Code) North to South	Combined Survey Areas		
	Makah U&A*	OR-SVI	PCFG
Coastal Waters			
Kodiak Alaska (KAK)			
Southeast Alaska (SEAK)			
Northern British Columbia (NBC)			
Western Vancouver Island (WVI)			
Southern Vancouver Island (SVI)			
Strait of Juan de Fuca (SJF)			
Northern Washington Coast (NWA)	Proposed Hunt Area		
Grays Harbor (GH+)			
Oregon Coast (OR)			
Southern Oregon (SOR)			
Northern California (NCA)			
Central California (CCA)			
Inland Waters			
North Puget Sound (NPS)			
Puget Sound & Hood Canal (PS)			

Figure 4. Survey areas within and near the PCFG range (* The Makah U&A includes both the NWA and SJF survey areas. The proposed regulations would allow hunting in only the NWA portion of the Makah U&A).

Whales seen in the PCFG range exhibited a wide range of movement across and within years. The 143 whales seen in 9 or more years provide a useful example. None of those whales was seen exclusively in a single region, and 67.1% were seen in at least four of the nine survey areas from 1996 to 2015 (Calambokidis *et al.*, 2017). However, whales did regularly visit the same regions across years, with 94.4% seen in at least one of the regions during 6 or more of the years they were seen. Of the 143 whales, 65.7% were seen in a particular region two-thirds or more of the years they were seen. Southern Vancouver Island (SVI) was the region with the maximum number of years seen for 65 of the 143 whales, which in part reflects the larger amount of survey effort in SVI (Calambokidis *et al.*, 2004; Calambokidis *et al.*, 2017). Thus, some whales regularly visit particular regions, but they use other regions as well. Calambokidis *et al.* (2004) and Calambokidis *et al.* (2017) also showed that whales seen in more years appeared in more regions.

Within-season movement of photo-identified and re-sighted whales in the summer feeding period can be extensive (Calambokidis *et al.*, 2017). For each survey area examined, movements were greatest between adjacent areas with less movement to distant areas (Calambokidis *et al.*, 1999; Calambokidis *et al.*, 2004; Calambokidis *et al.*, 2017). This pattern demonstrates that whales do focus on specific areas within the summer season, but they will move in search of food, most likely to neighboring areas.

There have been examples of large-scale movements within a year. One whale, originally photo-identified in a southeastern Alaska survey area around September 1999, was re-sighted far south about a month later in a northern California survey area (Calambokidis *et al.*, 2004). Another whale moved in the opposite direction; researchers originally identified it off southern Vancouver Island during June-July 2003, it swam at least 1,104 nautical miles (2,045 km) in 34 days or less, and it reappeared off Kodiak on August 9, 2003 (Calambokidis *et al.*, 2004). Within-season and between-year movements of gray whales likely relate to changes in productivity and prey availability.

Scordino *et al.* (2014) reported fewer gray whale sightings in the Makah U&A in June (compared to later in the summer and fall) and noted that those observations, along with available information on movements of satellite-tagged PCFG whales, suggests the possibility that whales that feed in the PCFG range may feed farther north (e.g., off Alaska) in the spring and early summer before heading south to the PCFG feeding grounds later in the year.

Similar findings of variable whale movements were reported by Scordino *et al.* (2011) during annual research surveys conducted by the NMFS Marine Mammal Laboratory and the Makah Tribe within the Makah U&A during summer and fall 1993 to 2009. Researchers assessed the site fidelity of individual whales by examining minimum residency time and annual capture histories from photographs. These researchers observed that, on average, individual whales using the Makah U&A are observed for a small portion of the June to November feeding season. Most gray whales were seen in only 1 year, and individuals sighted in multiple years averaged periods of 2.2 years between sightings in the Makah U&A. The sighting histories of individual whales did not suggest that gray whales exclusively use the Makah U&A during the summer/fall feeding season. Scordino *et al.* (2011) concluded that their results suggest that most gray whales sighted in the Makah U&A do not have strong fidelity to this area. Calambokidis *et al.* (2014) found that of the whales sighted in regions from NCA to NBC, depending on the region, from 35.5 to 58.8% of whales seen in at least 1 year were seen at some point within the Makah U&A, while from 41.3 to

78.9% of the whales seen in at least 2 years were seen at some point within the Makah U&A.

Based on photo-identification studies, about 28% of ENP gray whale sightings in the Makah Tribe's U&A during the migration period of December 1 through May 31 are PCFG whales (IWC, 2018).[3] During the summer feeding period, roughly half of gray whales sighted in the U&A are PCFG whales (Calambokidis *et al.*, 2017). For purposes of the proposed regulations, even though the data would suggest only half of the whales would be PCFG whales, we took a conservative approach and assumed that all gray whales encountered in the Makah Tribe's U&A between June 1 and November 30 will be a PCFG whale.

In summary, sightings and photo-identification data show a continuum of gray whale distribution in the PCFG area during summer and fall feeding periods from at least the southernmost survey area in northern California to northern British Columbia, and possibly further north to Southeast Alaska (near Sitka) and Kodiak Island (Calambokidis *et al.*, 2003; Calambokidis *et al.*, 2004; Moore *et al.*, 2007; Gosho *et al.*, 2011; Calambokidis *et al.*, 2017) and south to central and southern California. Although some gray whales return to the same general feeding area in at least some later years, photo-identification data have demonstrated large-scale movements and variability in gray whale distribution and habitat use within season and between years. These movements and variability are likely due to shifts in prey availability, the opportunistic and diverse nature of the species' feeding ecology, and the ability of gray whales to respond rapidly to changes in prey and to explore alternate feeding areas throughout their range (Darling *et al.*, 1998; Dunham and Duffus, 2001; Moore *et al.*, 2003; Moore, 2005; Moore *et al.*, 2007). This flexibility, coupled with the location of the PCFG area in the midst of the migration route for the entire ENP herd, provides an obvious and natural mechanism for new whales to join the PCFG. However, the evidence for maternally directed site fidelity and the regular, annual return of specific whales to the PCFG underscores the complexity of recruitment processes supporting this feeding aggregation of gray whales.

Distribution in the Winter Range

Gray whales occupy a large winter range, extending along the west coast as far north as Point Conception and the Channel Islands in central California (near Santa Barbara) and south to Cabo San Lucas (Reilly, 1984; Jones and Swartz, 2002; Urbán-Ramírez, *et al.*, 2003), where most investigators have concentrated their observations (Findlay and Vidal, 2002). Findlay and Vidal (2002) also reported that some of the population migrates farther south, around the tip of the peninsula and into the Gulf of California. A few isolated sightings of gray whales over the years have also occurred in more southern localities along the Pacific coast of mainland Mexico and at the oceanic Revillagigedo Islands (Findlay and Vidal, 2002). In contrast, there is evidence that some whales do not migrate as far south as Mexico (Herzing and Mate, 1984; Swartz, 1986; Swartz *et al.*, 2006), and Shelden *et al.* (2004) hypothesized that females that give birth north of Mexico may instead congregate near California's Channel Islands until their calves are large enough to

[3] Scientists at the Cascadia Research Collective compile photo-identification data to estimate a "PCFG mixing rate," i.e., the estimated proportion of gray whales expected to be PCFG animals during the winter/spring migratory period in the Makah hunt area. This estimate, typically published in a Cascadia report every 1 to 2 years, can and will vary based on new photo-identification data. For example, the 2015 Draft Environmental Impact Statement (DEIS) (NMFS 2015) analysis relied on a mixing rate estimate of 40% based on information that was current at the time (Calambokidis et al., 2014), but that has since been updated with new sighting data (Calambokidis et al, 2017; IWC, 2018).

migrate north.

As in the summer range, gray whales in the winter range often aggregate in specific areas of the ocean, particularly near and within coastal lagoons and bays of Baja, including Lagunas Guerrero Negro, Ojo de Liebre (Scammon's Lagoon), San Ignacio, Bahia Magdalena, Bahia Almejas, and Santo Domingo Channel (Urbán-Ramírez *et al.*, 2003). The whales segregate spatially and temporally, such that their distribution, gross movements, and timetable of lagoon occupation differ for each age-sex group (Jones and Swartz, 1984; Urbán-Ramírez *et al.*, 2003; Swartz *et al.*, 2006). Females with calves concentrate within the interiors of lagoons or lagoon nurseries and shift to the lagoon inlets and coastal waters occupied by the single whales without calves (i.e., oestrus females and mature males) when those whales depart for the northward migration (Jones and Swartz, 1984; Swartz *et al.*, 2006). Although there is repeated use of some lagoons, whales move among and between lagoons and spend some amount of the winter in waters outside of lagoons (Urbán-Ramírez *et al.*, 2003).

The aggregating behavior of the whales and their within-season movement between different areas on the wintering grounds relate to both reproductive and feeding activities, although some literature reports that whales mostly fast throughout the winter and rely on reserves of body fat to carry them through the winter period. On a longer-term basis, evidence indicates that distribution and habitat use within the wintering range varies according to environmental conditions. Recent studies have attributed shifts in the winter range to the El Niño Southern Oscillation, a multi-year climatic cycle occurring irregularly in the tropical Pacific every 2 to 7 years and lasting 6 to 18 months. When El Niño events occur, driven by low atmospheric pressure between Tahiti and Australia, sea surface temperatures warm and biological productivity drops near Baja. Whales shift farther north in their distribution, such as during the 1998 wintering season. When El Niños subside (and La Niñas occur), the sea surface temperatures are cooler near Baja (e.g., the 1989 and 1999 calving seasons), the biological productivity is higher, and whales shift south in their distribution (Gardner and Chávez-Rosales, 2000; Sánchez-Pacheco *et al.*, 2001; Urbán-Ramírez *et al.*, 2003; Swartz *et al.*, 2012). The observation of this shift led Gardner and Chávez-Rosales (2000) to conclude that environmental conditions may be more important factors in determining breeding locations than site fidelity.

Distribution in the Migration Corridor

The distribution of gray whales in the migration corridor is described below under Subsection 1.e., "Times and Lines of Migratory Movements."

b. Abundance

ENP gray whale stock abundance

Estimates of ENP gray whale population size (i.e., abundance) before commercial exploitation vary. Henderson (1984) estimated that the original population was between 15,000 and 20,000 whales. Reilly (1981) estimated that there may have been 24,000 gray whales before 1846. Scammon (1874) proposed that the population numbered about 30,000 whales from 1853 to 1856. After the heavy exploitation of gray whales, especially from 1855–74, the abundance may have dropped to only a few thousand animals (Henderson 1984). Since then, the ENP gray whale population has recovered to approximately 27,000 whales today (Durban *et al.*, 2017). NMFS has

conducted systematic shore-based surveys to estimate gray whale population size since 1967. The survey methods and data have been reviewed and accepted by the IWC Scientific Committee and the IWC.

Table 1 lists updated abundance estimates of the ENP gray whale population (Laake *et al.*, 2012; Durban *et al.*, 2015; Durban *et al.*, 2017). Population estimates are always subject to a certain level of uncertainty, and this is represented by the coefficient of variation (CV); a lower CV indicates a higher certainty that an estimate reflects the actual population size. Even though researchers provide point estimates, confidence statistics like the CV should be considered when reviewing abundance estimates and their precision. For example, the point estimate of the most recent abundance was 26,960 whales, but we can only be relatively certain that the true abundance in 2015/2016 was somewhere between 24,000 and 30,000 whales (using rounded figures for the 95% confidence interval [see description of Statistical Intervals in Table 1]).

Gray whale population estimates rely on the assumptions that all whales migrate as far south as Carmel, California, when observers are studying the southward migration, and that most whales will pass offshore within view of the observers. It has not been demonstrated that the entire gray whale population migrates past Carmel every year (Laake *et al.*, 1994; Rugh *et al.*, 2005), illustrating the importance of obtaining a long time-series of estimates across years from which to determine the trend in population size.

PCFG Abundance

The PCFG does not exhibit traits of a closed population whose abundance is determined solely based on births and deaths of member animals. Instead, it appears to have complicated dynamics that likely include whales with the following characteristics (Weller *et al.*, 2013):

- Whales that use the PCFG range based on learning "local knowledge" from their mothers
- Whales that use the PCFG range on an almost annual basis
- Whales that use the PCFG range intermittently over the years
- Whales that used the PCFG range once but never returned (i.e., transients)
- Whales that use the PCFG range for long periods of time in a given season
- Whales that use the PCFG range for short periods of time in a given season
- Whales that use large expanses of the PCFG range in a given season
- Whales that use small expanses of the PCFG range in a given season
- Whales that travel in and out of the PCFG range in a given season
- Whales that use the PCFG range but are not sighted (e.g., they occur in areas not surveyed or are otherwise missed by surveyors)

A particular whale may exhibit several of these characteristics during its lifetime. It is also likely that in any given year the assemblage of whales found in the PCFG range exhibit all of these characteristics, thereby underscoring the difficulty in deriving "true" abundance estimates for the PCFG.

More than 30 years ago, Darling (1984) made a rough estimate that in addition to 35 to 50 whales off Vancouver Island, "[a]pproximately 75 whales summer off Oregon each year (B.R.

Table 1. Gray whale population estimates from southbound sightings 1967/68 to 2015/16.

Year	Population Estimate	Statistical Interval*
1967/1968	13,426	10,952 - 15,900
1968/1969	14,548	12,267 - 16,829
1969/1970	14,553	12,186 - 16,920
1970/1971	12,771	10,743 - 14,799
1971/1972	11,079	9,060 - 13,098
1972/1973	17,365	14,642 - 20,088
1973/1974	17,375	14,582 - 20,168
1974/1975	15,290	12,773 - 17,807
1975/1976	17,564	14,603 - 20,525
1976/1977	18,377	15,495 - 21,259
1977/1978	19,538	16,168 - 22,908
1978/1979	15,384	12,972 - 17,796
1979/1980	19,763	16,548 - 22,978
1984/1985	23,499	19,400 - 27,598
1985/1986	22,921	19,237 - 26,605
1987/1988	26,916	23,856 - 29,976
1992/1993	15,762	13,661 - 17,863
1993/1994	20,103	17,936 - 22,270
1995/1996	20,944	18,440 - 23,448
1997/1998	21,135	18,318 - 23,952
2000/2001	16,369	14,412 - 18,326
2001/2002	16,033	13,865 - 18,201
2006/2007	19,126	16,464 - 21,788
Data above from Laake et al. (2012); Data below from Durban et al. (2015 and 2017)		
2006/2007	20,750	18,860 - 23,320
2007/2008	17,820	16,150 - 19,920
2009/2010	21,210	19,420 - 23,250
2010/2011	20,990	19,230 - 22,900
2014/2015	28,790	23,620 – 39,210
2015/2016	26,960	24,420 – 29,830

* Data reported in this column depict Confidence Intervals (1967/8–2006/7; Laake *et al.*, 2012) and Highest Posterior Density Intervals (HDPI) (2007/8–2010/11; Durban *et al.*, 2015 and 2017). Both are terms used commonly by researchers to describe the precision of a point estimate, depending on their method of statistical inference. For example, within a Bayesian statistical framework HDPIs indicate that there is a relatively high probability (signaled by 95th percentile as an interval of certainty) that the true abundance estimate in 2010/2011 falls between 19,230 and 22,900 gray whales. In general, narrower intervals indicate more precise point estimates. Sources: Laake *et al.* (2012); Durban *et al.* (2015 and 2017).

Mate [Oregon State University], pers. comm., 1979), so it is likely there are at least 100 in the British Columbia-Washington-Oregon area." Since then, it has become possible to develop more refined estimates using mathematical models referred to as 'mark-recapture' estimators based on the photo-identification data collected annually in the range of the PCFG during June 1 to November 30. Since 1977, these data presently identify 793 gray whales that have been seen at least once in the range of the PCFG during June 1 to November 30 and assigned unique identification numbers in the Cascadia catalog (Calambokidis *et al.*, 2017). Of these, 750 were sighted before 2015 and therefore had an opportunity to be re-sighted. Calambokidis *et al.* (2017) reported that 362 of these whales have been re-sighted (and therefore fit the definition for the PCFG) while 388 (52%) were seen in only one year.

A particular whale may exhibit several of these characteristics during its lifetime. It is also likely that in any given year the assemblage of whales found in the PCFG range exhibit all of these characteristics, thereby underscoring the difficulty in deriving "true" abundance estimates for the PCFG. More than 30 years ago, Darling (1984) made a rough estimate that in addition to 35 to 50 whales off Vancouver Island, "[a]pproximately 75 whales summer off Oregon each year (B.R. Mate [Oregon State University], pers. comm., 1979), so it is likely there are at least 100 in the British Columbia-Washington-Oregon area." Since then, it has become possible to develop more refined estimates using mathematical models referred to as 'mark-recapture' estimators based on the photo-identification data collected annually in the range of the PCFG during June 1 to November 30. Since 1977, these data presently identify 793 gray whales that have been seen at least once in the range of the PCFG during June 1 to November 30 and assigned unique identification numbers in the Cascadia catalog (Calambokidis *et al.*, 2017). Of these, 750 were sighted before 2015 and therefore had an opportunity to be re-sighted. Calambokidis *et al.* (2017) reported that 362 of these whales have been re-sighted (and therefore fit the definition for the PCFG) while 388 (52%) were seen in only one year.

A closed population is one whose dynamics result solely or primarily from births and deaths within the population, while an open population is one that also experiences immigration and emigration. Calambokidis *et al.* (2004) first proposed that it was more appropriate to use open population models than closed population models to estimate abundance of gray whales in the PCFG survey areas because it appeared that there was immigration and emigration within the group. More recent modeling has confirmed this conclusion. Calambokidis *et al.* (2012) used a variety of open- and closed-population estimators to calculate the annual abundance of PCFG whales.

Table 2 displays the estimates from the most recent analysis (Calambokidis *et al.*, 2017) for the PCFG, and also shows abundance estimates for the smaller Makah U&A areas within the PCFG range, for 1996 to 2015. The trend shows that the PCFG increased from approximately 38 animals in 1996 to 243 animals in 2015, and has been relatively stable since 2002 and recently increasing. The number of uniquely identified whales sighted in a given year has ranged from 45 whales in 1996 to 232 whales in 2013.

c. OSP Status

The OSP status of a marine mammal stock involves assessing its abundance relative to its carrying capacity. *See* footnote 1. As described above under Subsection 1.b "Abundance," the pre-

exploitation abundance of ENP gray whales has been estimated to be between 15,000 and 30,000 animals. Alter *et al.* (2007; 2012) used estimates of genetic diversity to infer that North Pacific gray whales (both Western North Pacific [WNP] and ENP stocks) may have numbered approximately 96,000 animals over 1,000 years ago. Alter *et al.* (2007) noted that carrying capacity could have declined over time and, if it has, then ENP gray whales may be reduced from historical numbers but may have reached a new, lower carrying capacity today. In response to a petition to designate the ENP as depleted, NMFS noted in reference to Alter *et al.* (2007) that an estimate of stock abundance 1,100–1,600 years ago is not best available science to inform current decision making (75 FR 81225, December 10, 2010). The 2007 NMFS stock assessment report (SAR) for ENP gray whales (Angliss and Allen, 2007) reported the findings and uncertainties of Alter *et al.*'s (2007) analysis, and noted that NMFS relies on current carrying capacity in making MMPA determinations because ecosystems change over time, and with those changes the carrying capacity of the ecosystem also changes. (This is distinguishable from a situation in which a species habitat has undergone or is undergoing changes as a result of human activity that could result in a carrying capacity below what is necessary to sustain the species over the long term, as for example in the case of the polar bear (Marine Mammal Commission, 2015)).

The most recent SAR (Carretta *et al.*, 2017) addresses the OSP status of the ENP stock. It reports that Punt and Wade (2012) estimated the ENP population was at 85 percent of carrying capacity (K) and at 129% of the maximum net productivity level (MNPL), with an 88 percent probability that the population is above MNPL[4] and therefore within the range of its OSP. The SAR notes that even though the stock is within OSP, abundance will fluctuate as the population adjusts to natural and human-caused factors affecting carrying capacity (Punt and Wade, 2012). It is expected that a population close to or at carrying capacity will be more susceptible to environmental fluctuations (Moore *et al.*, 2001). The SAR also observes that the correlation between gray whale calf production and environmental conditions in the Bering Sea may reflect this (Perryman *et al.*, 2002; Perryman and Weller, 2012). The SAR concludes that the population has nearly doubled in size over the first 20 years of monitoring and has fluctuated for the last 30 years around its average carrying capacity, a pattern consistent with a population approaching K (Carretta *et al.*, 2017).

d. Breeding Habits

Gray whale breeding and calving are seasonal and closely synchronized with migratory timing. Sexual maturity is attained between 6 and 12 years of age (Rice 1986; Rice and Wolman, 1971; Bradford *et al.*, 2010). The reproductive cycle of female gray whales lasts approximately 2 years and includes copulation, pregnancy, lactation, and a resting period after reproduction (Yablokov and Bugoslovskaya, 1984). A calf therefore can be produced every other year. The reproductive cycle is tied to annual migrations and environmental conditions favorable for the early development of calves (Swartz, 1986; Swartz *et al.*, 2006). Both male and female gray whales are thought to be promiscuous breeders and copulate repeatedly with more than one mate (Jones and Swartz, 1984). Mating behavior is observed during most seasons (Gilmore, 1960; Rice and Wolman, 1971; Jones and Swartz, 1984; Swartz, 1986; Berta and Sumich, 1999). Taylor *et al.* (2007) estimated the generation length of gray whales at 19-23 years.

[4] Punt and Wade (2012) also estimated that MNPL for the ENP population was 66 percent of carrying capacity. See footnote 1 for the NMFS regulations' description of OSP, K, and MNPL.

Table 2. Population abundance estimates for gray whales in the PCFG and Makah U&A survey areas. (Source: Calambokidis *et al.*, 2017)

Year	PCFG (NCA-NBC)		Makah U&A (NWA-SJF)	
	N	Nmin	N	Nmin
1996	38	36	18	16
1997	80	72	32	28
1998	126	117	40	33
1999	145	133	38	28
2000	146	135	41	25
2001	178	167	53	43
2002	197	185	48	33
2003	207	193	53	41
2004	216	202	58	45
2005	215	194	62	52
2006	197	180	70	63
2007	192	171	71	56
2008	210	195	84	78
2009	208	191	86	77
2010	200	184	80	65
2011	205	192	79	68
2012	217	208	88	80
2013	235	224	91	82
2014	238	222	100	88
2015	243	228	105	88

Female gray whales come into estrous primarily during a 3-week period from late November to early December, which coincides with the onset of the southward migration from the summer feeding grounds to wintering grounds (Rice and Wolman, 1971; Shelden *et al.*, 2004). At this time, ENP whales are known to congregate in nearshore areas of the summer feeding range at or near the top of the migratory corridor, possibly for mating (Swartz *et al.*, 2006). The mean conception date is approximately December 5 (Rice and Wolman, 1971). Mating occurs throughout the southward migration in the migratory corridor. Females that have not successfully bred may enter a second estrous cycle within 40 days (Rice and Wolman, 1971), such that a few females may breed as late as the end of January while present on the winter grounds (Jones and Swartz, 1984). Estrous females and mature males in the second breeding cycle have been observed in Baja lagoons at highest densities near lagoon inlets and in adjacent coastal waters (Swartz *et al.*, 2006). The gestation period lasts approximately 13.5 months (or approximately 418 days) (Rice *et al.*, 1984), so newly pregnant females can calve about a year later during the winter.

Some gray whales in the ENP calve in the shallow, protected lagoons of Baja Mexico (often referred to in scientific literature as birthing lagoons, calving lagoons, or breeding lagoons), starting around December 26 and ending approximately at the beginning of March (Swartz and Jones, 1983;

Sánchez-Pacheco, 1998), with a median birth date around January 27 (Rice and Wolman, 1971). Since the late 1970s and early 1980s, calf sightings have increased near Carmel, California (Shelden *et al.*, 2004) and scientists currently believe that perhaps one-quarter to one-half of the calves are born north of Carmel (well north of the Baja lagoons) during the southward migration (Shelden *et al.*, 2004). Shelden *et al.* (2004) propose that some mothers that reach parturition along the southward migration may winter with their calves in the Southern California Bight, near the Channel Islands, until the calves are large enough to return north.

Calves are approximately 15 feet (4.6 m) long and weigh 1,000 pounds (454 kg) at birth (Rice, 1986). The sex ratio of calves is 1:1 for the ENP gray whale. The mothers' rich milk is more than 50% fat and nourishes the calves for several weeks while they prepare for the long northward migration to summer feeding areas. Calves are weaned and become independent by 6 to 8 months of age while on the summer feeding ground (Rice and Wolman, 1971; Calambokidis *et al.*, 2010). Gray whale calves are approximately 28 to 30 feet (8.5 to 9.1 m) long before migrating southward (Rice, 1986).

NMFS' Southwest Fisheries Science Center has conducted a number of calf surveys (Perryman *et al.*, 2017). Data from these surveys, including calf counts, corrected calf estimates (accounting for non-watch hours and for calves missed), and calf production indices (calf estimate/total population estimate) are summarized in Table 3.

The calf estimates and calf production index in the ENP indicate that the gray whale population experienced periods of decreased production from 1999 to 2001 and 2007 to 2010. The 1999 to 2001 period coincides with an unusual mortality event that resulted in numerous stranded gray whales in 1999 and 2000 (Gulland *et al.*, 2005). Although calf production dipped from 1999 to 2001, it seems to have recovered during 2002 to 2006. Perryman *et al.* (2011) noted the high inter-annual variability in calf production between 1995 and 2011, but found no sign of a positive or negative trend over that time period. They did find a significant linear correlation between average ice cover in the Bering Sea and northbound calf estimates the following spring. Their results explain roughly 70% of the inter-annual variability in calf counts and suggest that a late retreat of seasonal ice may limit access to prey for pregnant females and reduce the probability that existing pregnancies will be carried to term.

Additional evidence of changes in calf production comes from observations at the Mexican calving lagoons. Annual cow-calf counts by Urbán-Ramírez *et al.* (2010) in two of the lagoons (San Ignacio and Ojo de Liebre) closely reflect the variability seen during the 1994 to 2010 period monitored by Perryman *et al.* (2011), including the steep decline in 1999 to 2001 coincident with the unusual mortality event (Table 1; Gulland *et al.*, 2005). The data for Laguna Ojo de Liebre also suggests that there was a significant rebound in cow-calf pairs during 2002 to 2006 (nearly 900 pairs in 2004) followed by another decline to low counts (less than 200 pairs) in 2010 (Urbán-Ramírez *et al.*, 2010). More recently, Swartz *et al.* (2012) reported that maximum counts of cow-calf pairs in Laguna San Ignacio during 2011 to 2012 were 175 to 232% higher than the 2007 to 2010 average counts, and that more females appear to be using this lagoon (including females that gave birth elsewhere). These authors speculated that increasing numbers of cow-calf pairs might be a result of new, mature females replacing those that were lost during the 1999 to 2000 unusual mortality event. Swartz *et al.* (2012) also noted that observations of healthy "fat" calves and few "skinny" adults in Laguna San Ignacio in 2011 and 2012 suggests that gray whale females have

found adequate prey resources during recent summers.

Table 3. Summary of gray whale calf counts off Piedras Blancas, California, 1994 to 2016. (Sources: Perryman *et al.*, 2011; Perryman *et al.*, 2017)

Year	Calf Counts	Corrected Estimate (standard error)	Calf Production Index (%)[1]
1994	325	945 (68.21)	4.70
1995	194	619 (67.20)	3.02
1996	407	1,146 (70.70)	5.47
1997	501	1,431 (82.00)	6.80
1998	440	1,388 (92.00)	6.57
1999	141	427 (41.10)	2.18
2000	96	279 (34.80)	1.55
2001	87	256 (28.56)	1.56
2002	302	842 (78.60)	5.25
2003	269	774 (73.56)	4.65
2004	456	1,528 (96.00)	8.85
2005	343	945 (86.90)	5.28
2006	285	1,020 (103.30)	5.51
2007	117	404 (51.20)	2.11
2008	171	553 (53.11)	3.10[a]
2009	86	312 (41.93)	1.20[a]
2010	71	254 (33.94)	1.33
2011	246	858 (86.17)	4.09[a]
2012	330	1,167 (120.29)	5.10[b]
2013	311	1,122 (104.14)	4.87[b]
2014	429	1,487 (133.35)	6.41[b]
2015	404	1,436 (131.01)	4.99[a]
2016	367	1,351 (121.38)	5.01[a]

[1] Values reported in Perryman *et al.*, (2011) except as follows:

(a) index values based on updated ENP abundance estimates by Durban *et al.* (2017).

(b) index values based on a value derived via linear regression of population estimates from Table 1.

e. Times and Lines of Migratory Movements

The discussion above under Subsection 1.a., "Distribution," describes the migratory range of ENP gray whales, which is also illustrated in Figure 1. The following discusses the timing of the migrations and distance from shore.

Fall/Winter – Characteristics and Timing of the Southward Migration

The onset of the southward migration is difficult to define (Rugh *et al.*, 2001) and is typically associated with the primary breeding period. Timing may be influenced by several environmental variables, including the extent of ice coverage, availability of food resources, and photoperiod (Rugh *et al.*, 2001; Clarke and Moore, 2002; Swartz *et al.*, 2006). It is also related to how widely the whales are distributed for foraging (Rugh *et al.*, 2001). Most whales migrate out of northern seas sometime around mid-October to November, but some have been seen swimming south near Point Barrow as early as mid-August, and some have been seen along the Chukotkan Peninsula as late as mid-December (Rugh *et al.*, 2001).

The southward migration is generally grouped into two phases by age, sex, and reproductive status (Rice and Wolman, 1971). The first migrant phase consists of near-term pregnant females, followed by non-pregnant females and mature males. The second migrant phase consists of immature whales of both sexes (Swartz *et al.*, 2000; Swartz *et al.*, 2006). Poor weather conditions and widely scattered offshore distribution of gray whales make it difficult to survey whales migrating through the area (Green *et al.*, 1995; Shelden *et al.*, 2000; Rugh *et al.*, 2001), but some studies are available. Shelden *et al.* (2000) reported observations of gray whales off the coast of Washington and in the Strait of Juan de Fuca near Port Angeles in early to mid-November. Observational studies also support the presence of southbound gray whales off the coast of Washington in December (Pike, 1962; Darling, 1984; Shelden *et al.*, 2000; Calambokidis *et al.*, 2009) and January (Calambokidis *et al.*, 2009). Using data from surveys at other locations, along with measured travel speeds of migrating gray whales, Rugh *et al.* (2001) calculated January 5 as the peak of the southward migration past Tatoosh Island.

The most routine observations of the gray whale migration have been in California (Rugh *et al.*, 2001). Data from shore-based stations have shown a 1-week shift in timing of median dates of southbound migrants (from January 8 to January 16) after 1980. This might have been due to an oceanographic regime shift in the northern portion of the summer range. The shift caused extreme ice retreats and may have expanded the distribution of gray whales on the feeding grounds and increased the distance of the southward migration (Miller *et al.*, 1994; Hare and Mantua, 2000; Rugh *et al.*, 2001; Moore *et al.*, 2003; Shelden *et al.*, 2004; Moore, 2005). Concurrent with these findings, southbound calf sightings have increased near San Diego (southern California) and Carmel (central California) since 1980; the 1-week delay in the southward migration has meant that calving has occurred farther north than the Baja lagoons during the southward migration (Shelden *et al.*, 2004). Gray whales generally reach these wintering grounds starting in late December or early January and reach maximum densities in February. There is also recent evidence that not all gray whales migrate south for the winter. Mate *et al.* (2010) satellite tagged a whale that remained off the northern California and southern Oregon coasts throughout the winter.

Spring – Characteristics and Timing of the Northward Migration

In mid-February, as the southward migration comes to an end in California and Mexico, the northward migration begins. The northward migration to summer feeding areas occurs in two generally grouped phases according to age, sex, and reproductive condition (Poole, 1984; Swartz, 1986; Swartz *et al.*, 2006). The first migrating phase consists of newly pregnant females, followed two weeks later by adult males and non-pregnant females, then by immature whales of both sexes another week later (Swartz *et al.*, 2006).

The first phase of northbound migrants passes the coast of central California from early February to early April (Poole, 1984; Gilmore, 1960); the waters of Oregon in mid-February through April (Herzing and Mate, 1984); and the central Washington coast during February, March, and April (Wilke and Fiscus, 1961; Calambokidis *et al.*, 2009). At Unimak Pass, Alaska, phase one of the migration passes the last week of April, indicating an approximate lag of four to five weeks between Oregon and Alaska (Hessing, 1981; Herzing and Mate, 1984).

The cow-calf migrants in the second migrating phase travel more slowly than the whales in the first migrating phase to accommodate nursing and calves (NMFS, 2001), and they have been reported to follow the first phase by seven to nine weeks (Herzing and Mate, 1984). The predominantly cow-calf pair migrants in the second phase of the northward migration have been sighted passing through the waters off central California from early April to late May (Poole, 1984; Perryman *et al.*, 2011) and passing by Oregon from late April to May, peaking in mid-May (Herzing and Mate, 1984). During the Tribe's 2000 hunt in coastal waters of their U&A, Gearin and Gosho (2000) noted that most of the whales observed during the hunt (April 17 to May 29) were large individual whales and not pairs. Whales observed in the vicinity of the hunt did not appear to be milling or feeding but instead exhibited migratory behavior in terms of their dive duration and movements. Further north, Herzing (1981) observed cow and calf pairs passing Unimak Pass, Alaska, from May through mid-June, peaking on June 4.

Taking both migration phases into account, northbound whales of all ages and both sexes are present off the Washington coast from late February through June. There are no direct observations that establish the timing of either phase of the northward gray whale migration through the Makah Tribe's U&A nor are there any published estimates based on observations from other areas (as Rugh *et al.* [2001] calculated for the southward migration). Given the available observational data, it is reasonable to estimate that migrants in the first phase of the northward migration would be in the project area from March through early May, and migrants in the second phase would be in the project area from roughly early May until June.

Migratory Distribution Relative to Shore (Location and Width of the Migratory Corridor)

The migratory distribution of gray whales relative to shore (i.e., location, width, and extent of the migratory corridor) varies based on environmental conditions (such as bottom topography, climate, and water depth), migration season and phase, and use of the migratory corridor (such as feeding, breeding, or migrating). Generally, gray whales migrate closer to shore where the continental shelf is narrow, such as near Granite Canyon, California, and distribute farther offshore where the continental shelf is broader, such as near the Channel Islands, California (Shelden *et al.*, 2004). There is also evidence that northbound whales travel closer to shore during spring than do southbound whales in fall and winter (Herzing and Mate, 1984; Green *et al.*, 1995; Calambokidis *et al.*, 2009). During the 1999 and 2000 Makah hunts (in April and May), gray whales were sighted or

pursued an average of 1.0 mile (1.6 km) from shore (Gosho, 1999; Gearin and Gosho, 2000).

In the Makah Tribe's U&A, northbound whales tend to travel closer to shore than southbound whales. Although there is considerable variability in these sightings, the best available information indicates that:

- Northbound whales likely migrate within 23 miles (37 km) of shore (averaging 5 to 7 miles [8 to 11 km] offshore) and many whales travel close to shore where their presence can be difficult to detect (Pike, 1962; Green *et al.*, 1992; Green *et al.*, 1995).
- Southbound whales have been reported migrating up to 27 miles (43 km) from shore (averaging 9 to 16 miles [14 to 26 km] offshore), with the possibility that some whales may travel far offshore so as to take a more direct route to and from the central coast of Vancouver Island (Pike, 1962; Green *et al.*, 1992; Green *et al.*, 1995).

f. Feeding Ecology

Gray whale feeding ecology is relevant to understanding their role in the ecosystems of which they are a part. Gray whales use various feeding techniques, including (1) suction feeding, also called benthic feeding or bottom feeding, which allows them to feed on crustaceans that live burrowed in (infauna) and just above (epifauna) the sea floor; and (2) engulfing or skimming prey in the water column and on the sea surface. This broad foraging capability allows gray whales to feed on a wide variety of prey throughout their range (Nerini, 1984; Darling *et al.*, 1998; Dunham and Duffus, 2001; Moore *et al.*, 2003; Moore *et al.*, 2007; Budnikova and Blokhin, 2012).

Gray whales regularly consume benthic prey (Nemoto, 1970; Nerini, 1984), often creating furrows or pits and leaving a tell-tale plume of mud in the water column (Johnson and Nelson, 1984; Nerini, 1984; Kvitek and Oliver, 1986; Weitkamp *et al.*, 1992). Excavation of bottom sediments by feeding gray whales may play a role in maintaining the benthic habitat in some areas, though its relative importance is not clear. Some investigators hypothesize that gray whale benthic feeding may help maintain the substrate (Johnson and Nelson, 1984; Oliver and Slattery, 1985), or otherwise have an important influence on the benthic community (Nelson and Johnson, 1987; Grebmeier *et al.*, 1989). Excavated sites also trap woody debris, which affects benthic productivity (Oliver and Slattery, 1985). Gray whale excavation has been proposed as a major source of disturbance and part of a cycle of exploitation, recolonization, succession, and maturing of the prey community (Nerini, 1984; Oliver *et al.*, 1984; Oliver and Slattery, 1985).

Conversely, some investigators have proposed that the growing gray whale population has reached carrying capacity and that the population's overexploitation of benthic amphipods in the Bering Sea may have led to a decrease in amphipod abundance during a documented period from 1986 to 1988 (Highsmith and Coyle, 1992). It has further been suggested that gray whale foraging can lead to localized loss of amphipod or other prey communities, forcing whales to forage elsewhere (Highsmith and Coyle, 1992; Weitkamp *et al.*, 1992; Feyrer, 2010; Feyrer and Duffus, 2011). In the Makah U&A, gray whales may be feeding on both pelagic and benthic prey (Lindsay, 2013; Scordino *et al.*, 2014).

Gray whales excavating the benthos may also make food available for surface-feeding seabirds. As the whales stir up the benthos, particularly in shallow waters, feed rises to the surface. Observations in the Bering Sea suggested this association (e.g., Grebmeier and Harrison, 1992), but no similar observations have been made in the Makah Tribe's U&A. When gray whales die,

decomposing whale carcasses also deliver large pulses of organic material to the seafloor. This material may serve as islands of habitat for unique assemblages of deep-sea macrofauna (Dahlgren *et al.*, 2004; Goffredi *et al.*, 2004). Barrett-Lennard *et al.* (2011) speculated that the frequent occurrence of gray whale carcasses (as a result of predation by killer whales) in shallow waters and beaches near Unimak Pass, Alaska, may affect the structure of bear and shark populations that scavenge on the remains. These authors also report on an apparent shallow water carcass-storing behavior that may promote the development and cultural transmission of specialized feeding behaviors by the area's killer whale population.

Although gray whales are consistently characterized as benthic feeders in the literature, they also feed on pelagic prey, including mysid crustaceans, crab larvae, herring eggs and larvae, sandlance, ghost shrimp, and euphausiids (Murison *et al.*, 1984; Nerini, 1984; Oliver *et al.*, 1984; Weitkamp *et al.*, 1992; Duffus, 1996; Darling *et al.*, 1998; Benson *et al.*, 2002; Dunham and Duffus, 2002; Stelle *et al.*, 2008; Newell, 2009; Brownell *et al.*, 2010; Feyrer and Duffus, 2011; Lindsay, 2013; Scordino *et al.*, 2014). They feed in the water column by making short dives and random movements in kelp beds and within the surf zone of rock and islets (Murison *et al.*, 1984; Nerini, 1984; Darling, 1998). When they skim feed on the sea surface, they move along the surface, biting down on plankton streams along the tide line (Darling *et al.*, 1998).

Some scientists have proposed that whales primarily feed on benthic prey in higher latitudes and switch to pelagic prey in lower latitudes (Nerini, 1984), or that prey are in primary, secondary, or tertiary feeding grounds with pelagic prey occurring further south in the range (Kim and Oliver, 1989). Others have proposed that whales select pelagic prey first when available because it is easier to obtain than benthic prey (Dunham and Duffus, 2001). Dunham and Duffus (2001) hypothesize that pelagic prey concentrate in the water column, making a relatively easy filter-feeding target, and that the distribution of pelagic prey is not as patchy or unpredictable as benthic prey.

Rather than exhibiting strong regional or prey-type preferences, whales probably exhibit highly plastic and opportunistic foraging behavior using a variety of prey resources, both benthic and pelagic, within a given feeding area (Darling *et al.*, 1998; Dunham and Duffus 2001, 2002; Fadeev, 2011; Feyrer and Duffus, 2011; Vladimirov *et al.*, 2012). After 26 years of observations off the southwest coast of Vancouver Island, some researchers noted that whales could be observed feeding in discrete pockets of habitat over short time frames, depending on prey availability. Over longer time frames, however, virtually all of the southwest coast study area was used by feeding gray whales (Darling *et al.*, 1998; Dunham and Duffus, 2001). Darling *et al.* (1998) proposed that gray whales are attuned to natural patterns of abundance and absence occurring within a prey assemblage and that different prey species play equal roles over a season or several years.

Over the years, researchers have observed gray whales aggregating in particular areas to feed where prey densities are high, especially in areas of benthic prey densities in the northern seas (e.g., Berzin 1984; Yablokov and Bogoslovskaya, 1984; Clarke and Moore, 2002; Moore *et al.*, 2000; Moore *et al.*, 2003; Highsmith *et al.*, 2007). The term 'feeding aggregation' has been used in scientific literature to describe these concentrations of feeding whales (e.g., Berzin, 1984; Calambokidis *et al.*, 2002). Areas where whales congregate to feed on a regular basis have been referred to as 'feeding grounds' or 'feeding areas' (e.g., Berzin, 1984; Calambokidis *et al.*, 2002; Moore *et al.*, 2003; Calambokidis *et al.*, 2004).

The best available information indicates that feeding aggregations (the whales) and feeding

areas (the prey) are dynamic, with both small- and large-scale changes over time and space. Gray whales change location and habitat to exploit the optimum prey species at any one time, based on abundance, density, size, caloric content, and predation pressure. Such factors may vary by season and year, depending on environmental variability and the population dynamics of prey (Darling *et al.*, 1998; Clarke and Moore, 2002; Moore *et al.*, 2007).

2. Accordance with sound principles of resource protection

The purposes and policies of the MMPA include maintaining marine mammals as "a significant functioning element in the ecosystem of which they are a part," "maintain[ing] the health and stability of the marine ecosystem," and "obtain[ing] an optimum sustainable population keeping in mind the carrying capacity of the habitat." 16 U.S.C. § 1361. Thus, we consider effects of the proposed regulations on both the ecosystem and the affected stock. As described in Appendix 1, the proposed regulations would result in no more than 25 ENP gray whale deaths over 10 years, of which no more than 16 would be PCFG whales. No more than 8 of the PCFG whale deaths would be females. If PCFG abundance fell below 192 whales, all hunting would stop. The discussion below examines the effect the proposed regulations would have on (1) the functioning of ENP gray whales as a significant element of their ecosystem, and the related health and stability of that ecosystem; (2) the status of the ENP gray whale stock relative to its OSP range; and (3) the status of PCFG whales relative to their abundance during a recent 15-year period of stability and to a theoretical OSP range of the group, which is calculated as if they were in fact a stock. (By "theoretical OSP range" we mean a range that is between the carry capacity of the PCFG area during the summer feeding period and a level below carrying capacity that that is analogous to its MNPL [see footnote 1]).

a. Effect of the proposed waiver and regulations on the role of ENP gray whales in their marine ecosystem, and on the health and stability of that ecosystem

For the reasons detailed below, the proposed waiver and regulations are unlikely to have an appreciable effect on the role of ENP gray whales in their ecosystem or on any of the ecosystems of which the whales are a part.

Ecosystem Scale

In section 2(2) of the MMPA, Congress finds that marine mammal "species and population stocks should not be permitted to diminish beyond the point at which they cease to be a significant functioning element in the ecosystem of which they are a part" (16 U.S.C. §1361(2)). Section 1361(6) further provides that "the primary objective of [marine mammal] management should be to maintain the health and stability of the marine ecosystem" (16 U.S.C. §1361(6)). The MMPA does not specify a geographic scale for identifying marine mammal ecosystems. Pursuant to the court's direction in *Anderson v. Evans* (2004), the DEIS examined the impact of the Makah Tribe's proposed hunt on the relevant "local" area, which the court defined as "the Strait of Juan de Fuca and the northern Washington coast" (i.e., the Makah U&A). *Anderson v. Evans*, 350 F.3d 815, 832 (9th Cir. 2003), *opinion amended and superseded on denial of reh'g*, 371 F.3d 475 (9th Cir. 2004). This aspect of the court's ruling in *Anderson* was based on the court's application of the NEPA regulation 40 C.F.R. 1508.27 (a) regarding local impacts. The relevant scale of inquiry under NEPA

as defined by the *Anderson* court does not necessarily define the scale of inquiry under the MMPA. In addressing application of the MMPA to the Tribe's proposed hunt, the *Anderson* court noted that a goal of the MMPA is to ensure that marine mammals do not cease to be a functioning element in the ecosystem. The court observed that the failure to subject the hunt to review under the MMPA would mean there is no assurance that the Tribe's take "will not threaten the role of the gray whales as functioning elements of the marine ecosystem." *Anderson*, 350 F.3d at 841. However, the relevant geographic scale of the ecosystem under the MMPA was not an issue before the court.

Because of their long migration route, ENP gray whales occupy multiple large marine ecosystems at different times. For this reason, the analysis first examines the effect of the proposed hunt regulations on ENP gray whales as a functioning element of any of the large marine ecosystems outside of the area where the hunt would take place. (That is, removing whales from one portion of the migratory range may affect the whales' role in another portion of the migratory range if the removals are great enough.)

The analysis next examines the effect of the proposed hunt regulations on ENP gray whales as a functioning element of the ecosystem in which the hunt takes place. The coastal portion of the Makah Tribe's U&A is located within what oceanographers call the California Current System (Sherman and Alexander, 1989) or Province (Longhurst, 1998), a part of the North Pacific Gyre that moves cool ocean waters south along the western coast of North America, beginning off British Columbia, flowing southward past Washington, Oregon and California, and ending off Baja California. Within that province, scientists regularly study and predict physical and biological features and processes in the northern California Current ecosystem, which is generally described as extending from northern California to Vancouver Island (e.g., Field *et al*., 2001; Field *et al*., 2006; Hickey and Banas, 2008; Sydeman and Elliott, 2008; Harvey *et al*., 2017; Wells *et al*., 2017), though some studies extend only to the U.S.–Canada border in the north because of differing management regimes between the two countries (Field *et al*., 2001; Field *et al*., 2006). For purposes of the MMPA analysis, we took a precautionary approach of examining the impact of the proposed waiver and regulations on the smaller northern California Current ecosystem. This area also corresponds to the seasonal range of the PCFG. The following discussion considers the role of ENP gray whales in the northern California Current ecosystem because it is the smallest recognized marine ecosystem of which they are a part.

The following discussion also describes the effects of the proposed regulations on the environment of the northern Washington coast (the coastal portion of the Makah U&A). Our analysis under NEPA considered impacts at this scale, consistent with the court's ruling in *Anderson* v. *Evans*.

Effect of the proposed waiver and regulations on the relevant ecosystems

Large Marine Ecosystems

The entire range of the ENP gray whale stock is vast and crosses many large marine ecosystems, including the Pacific Central American Coast, California Current, Gulf of Alaska, and Bering and Chukchi Seas (Longhurst, 2006; Sherman and Alexander, 1989). These ecosystems are unlikely to be affected by the removal of up to 25 whales over 10 years from the Makah Tribe's U&A, for several reasons. First, the ENP gray whale stock numbers between about 24,000 and 30,000 individuals, with a point estimate of about 27,000. Also as described previously, the stock is

likely at or near the carrying capacity of its habitat. The potential impact of the requested waiver on the ENP stock would thus be the annual removal of less than one tenth of one percent of the population. This level of removal, which is an order of magnitude less than the natural variability of the population, would have a negligible effect on the functioning of ENP gray whales as an element of these large ecosystems, or on the health of the ecosystems themselves.

Northern California Current Ecosystem and Northern Washington Coast

The proposed waiver and regulations will also not result in gray whales ceasing to be a significant functioning element of the smaller northern California Current ecosystem or the environment of the northern Washington coast for two reasons. First, these habitats are shaped by dynamic, highly energetic, large-scale processes and the role of ENP gray whales in structuring these habitats is limited. Moreover, the proposed regulations are likely to result in a negligible decrease in the numbers of whales present in the northern California Current ecosystem or the northern Washington coastal environment. The analysis supporting these conclusions is based on the analysis in the DEIS (Section 4.3, Marine Habitat and Species, and Section 4.4.3.2, Alternative 2), and discussed further below.

The DEIS (Section 3.3, Marine Habitat and Species) contains a detailed discussion of the California Current ecosystem in general and the northern Washington coast in particular, including the physical and biological elements of the pelagic and benthic environments. The northern California Current ecosystem and northern Washington coastal environment are dynamic, shaped by large-scale processes including currents, undercurrents, and eddies; seasonal wind patterns, storms, and mixing; coastal upwelling; freshwater runoff; and variable climate patterns such as El Niño. The biological composition and productivity of these areas is diverse, variable, and patchily distributed owing to the dynamic physical processes, which vary across a spectrum of temporal and spatial scales. The variability of these processes results in variable biological productivity of both benthic and pelagic organisms.

Direct effects of hunt-related activities associated with the Tribe's requested waiver (such as operating motorized vessels and towing a carcass onto the shore) would potentially disturb the pelagic, benthic, and nearshore environments, but any disturbance would be short-term and localized. The magnitude of any such disturbance would also be extremely small in the northern California Current ecosystem or the northern Washington coastal environment, which are large areas characterized by constant, highly energetic, and large-scale physical disturbances as described above. For these reasons, we conclude that direct effects of hunt-related activities are unlikely to affect the gray whales' ecosystem or the functioning of gray whales in that ecosystem, at any scale considered.

In addition to these direct effects, the DEIS considers whether the Tribe's requested waiver and alternatives may have indirect effects resulting from the removal of migrating or summer-feeding whales (either because hunting actually kills whales that would have used the area or causes them to avoid the area). Such indirect effects would result if gray whales played a role in structuring the ecosystem in the northern California Current or the northern Washington coastal environment, and if the proposed hunt resulted in the removal of a sufficient number of whales to alter that role (either because whales were killed or avoided the hunt area).

ENP gray whales have been observed feeding benthically in the northern California Current and northern Washington coastal environment within (Calambokidis *et al.*, 2002), but most feeding

observed in the Makah Tribe's U&A is pelagic feeding, probably in kelp (Gearin, 2009, pers. comm.). The consumption of pelagic prey by gray whales is not likely a significant factor in structuring pelagic communities relative to the highly variable and energetic oceanographic and climatic processes characteristic of the project area. As discussed in more detail in the DEIS, the physical features and ephemeral, seasonal, interannual, and interdecadal physical oceanographic processes largely control the abundance, distribution, and species composition of pelagic prey in the region.

Gray whale consumption of benthic and epibenthic prey is also not likely a significant factor in structuring these communities in the northern California Current or northern Washington coastal environment. Soft-bottom subtidal habitats support a rich diversity of infaunal invertebrates, including amphipod crustaceans, echinoderms, and polychaete worms, as well as highly motile epibenthic invertebrate species (such as Dungeness crab). Community structure and species composition in benthic habitats in this ecosystem are principally determined by the frequency and magnitude of physical disturbances (Sebens, 1987), intense intra- and inter-specific competition and predation (Connell, 1978; Paine 1969; Robles and Desharnias, 2002), and highly variable recruitment dynamics (Gaines and Roughgarden, 1985; Menge and Sutherland, 1987; Roughgarden *et al.*, 1988). These habitats and the organisms that inhabit them are subjected to intense physical agitation and disturbance (Proctor *et al.*, 1980; Airamé *et al.*, 2003) from wind, waves, tides, temperature, desiccation, sediments, and sand scouring. The infauna that inhabit this environment are opportunistic colonizers adapted to these high-energy environments and exhibit strong seasonal variability and spatial patchiness (Richardson *et al.*, 1977; Oliver *et al.*, 1980; Hancock, 1997).

ENP gray whales play a limited role in structuring either the pelagic or benthic communities in the northern California Current ecosystem, including the northern Washington coastal environment. These communities are shaped by dynamic, highly energetic, large-scale processes. Moreover, the proposed limited waiver would likely result in the removal of a tiny fraction of the overall ENP gray whale stock. Each year most of the ENP gray whale stock passes through the Makah Tribe's U&A on its northward migration. While many whales pass through without stopping to feed, many also stop along the way and feed opportunistically (Calambokidis *et al.*, 2004). Thus, even if a Makah hunt removed a disproportionate number of whales that would have spent the summer feeding in the Makah Tribe's U&A, it is unlikely that background levels of predation or benthic disturbance would be perceptibly changed by the proposed waiver and the removal of a tiny fraction of the overall ENP gray whale stock.

Even if PCFG whales in the Makah U&A during the summer feeding period did play a significant role in structuring the northern California current ecosystem or northern Washington coastal environment, the proposed regulations would allow for the removal of at most 16 PCFG whales from a total population of 243 animals. In addition, every year there are many whales feeding in the Makah U&A that are not PCFG whales (that is, whales that are seen in only one year and not seen again) (Calambokidis *et al.*, 2014). These whales play a similar role in structuring the ecosystem of the northern California current and northern Washington coast.

While it has been suggested that a tribal hunt could cause PCFG whales to abandon the U&A area to forage elsewhere, as described below and in the DEIS (Section 4.4.3.2.3, Change in Distribution or Habitat Use), there is no credible information to indicate this would occur.

Based on the foregoing discussion, we conclude that the proposed waiver and regulations would

not cause ENP gray whales "to cease to be a significant functioning element in the ecosystem of which they are a part." To summarize:

- Gray whales annually traverse five large marine ecosystems;
- Average annual removal by Makah hunters of up to 2.5 ENP gray whales from a population of approximately 27,000 individuals would not have an appreciable effect on the functioning of ENP gray whales in any of these large marine ecosystems or on the ecosystems themselves;
- The northern California current ecosystem is the smallest recognized marine ecosystem that encompasses the area of the proposed hunt;
- ENP gray whales play a limited role in structuring the northern California current ecosystem, which is shaped by dynamic, highly energetic, large-scale ecosystem processes;
- There will continue to be approximately 27,000 ENP gray whales migrating along the coast through the northern California current ecosystem, thus the functioning of ENP gray whales in that ecosystem will not change;
- At the scale of the northern Washington coast (the coastal portion of the Makah U&A), PCFG whales play a limited role in structuring the habitat, which is shaped by dynamic, highly energetic, large-scale ecosystem processes;
- There are likely to continue to be non-PCFG whales in the Makah Tribe's U&A and the rest of the PCFG range during the summer/fall feeding period;
- The number of PCFG whales that may be killed in a hunt under the primary strike limits (a maximum of 16 whales over the 10 years of the regulations) does not reduce the population to abundance levels below those observed since 2002 (i.e., below a total population estimate of 192 whales or a minimum population estimate of 171 whales). The additional protection afforded by the abundance thresholds will ensure that the proposed waiver and regulations do not result in reducing the number of ENP gray whales in the Makah U&A during the summer/fall feeding period to levels below those observed during the period of stable abundance since 2002;
- There is no evidence to suggest that a hunt, as carried out under the proposed regulations, would cause gray whales to abandon the Tribe's U&A as a summer feeding area.

b. Effect of the proposed waiver and regulations on the status of the ENP gray whale stock relative to OSP and on the presence of ENP gray whales in the PCFG feeding area

For the reasons detailed below, the proposed waiver and regulations are unlikely to have an appreciable effect on the ENP gray whale stock's abundance and its status relative to OSP. They are also unlikely to reduce the abundance of ENP gray whales in the PCFG feeding area to levels below those observed during the period of stable abundance since 2002.

The proposed waiver and regulations would result in a maximum of 3 ENP gray whale strikes/deaths per year.[5] Three animals represent 0.011 percent of the population of 27,000 animals. This very small level of mortality is also a small fraction of the annual variability in the stock's abundance (~16,000-27,000 animals since the mid-1990s). This small number of removals would

[5] As described in Appendix 1 and in the *Federal Register* notice proposing the waiver and regulations, the proposed regulations would allow for a maximum number of strikes that would vary from 2 in odd-year hunting seasons (July-October) to 3 strikes in even-year hunting seasons (December through following May).

not have an appreciable effect on ENP abundance or OSP status. Moreover, any portion of the IWC quota (IWC [Schedule], 2012b) for ENP gray whales that is not harvested by the Makah Tribe is likely to be harvested by Russia's Chukotkan hunters, based on recent practice and as articulated in a joint U.S-Russia monitoring agreement (Fominykh and Wulff, 2018). Thus, the proposed waiver and regulations are unlikely to have a net effect on ENP gray whale stock abundance or OSP status.

Although researchers have not been able to discern if the PCFG is within its theoretical OSP range (Punt and Moore, 2013), we can make some provisional conclusions about OSP parameters for this group. The most recent population estimate of 243 whales in 2015 is the highest abundance estimated for the PCFG. Since that time we have not seen the PCFG react in a way that would suggest it had exceeded carrying capacity (such as a rapid population decline). Therefore, it is reasonable to conclude that carrying capacity for this group must be at least 243 animals. As noted previously (see footnote 5), Punt and Wade (2012) concluded that MNPL for the ENP population was 66 percent of carrying capacity. If the same is true for the PCFG, then the lowest possible MNPL level for the PCFG would be 160 whales. The 192-whale abundance threshold we selected for cessation of a hunt is well above this level and is closer to the level obtained if one assumed that carrying capacity is 290 animals (i.e., a value our model projects the PCFG could achieve by 2028 if it continues to grow). Therefore, we conclude that the proposed waiver and regulations are unlikely to contribute to reducing the population to levels below those observed since 2002.

The proposed waiver and regulations are unlikely to have an appreciable effect on the distribution of ENP gray whales, either through disturbance or mortality of migrating whales or PCFG whales. Even-year hunts and training exercises conducted from December through May would encounter mostly migrating whales that must pass through the ocean portion of the Makah U&A during their lengthy north- and southbound transits. These whales are slow but steady swimmers that often exhibit directed swimming and predictable breathing and dive patterns (Jones and Swartz, 2002). Whales travelling at 3–5 miles per hour (5–8 km per hour) would be able to transit the widest north-south portion of the Makah U&A (approximately 33 miles or 53 km north-south) in nine hours or less (see Appendix 5). During migration, gray whales generally remain close to shore (especially where the continental shelf is narrow) and the best available information indicates that most northbound and southbound whales migrate within 27 miles (43 km) of shore (Pike, 1962; Green *et al.*, 1992; Green *et al.*, 1995). Some researchers have suggested that gray whales may alter their migration distance from shore in response to vessels and other human activity (Rice, 1965; Hubbs and Hubbs, 1967; Wolfson, 1977; Schulberg *et al.*, 1989; Mate and Urbán-Ramirez, 2003), however the ENP population has also demonstrated a tolerance and resiliency to human activities as reflected by the successful recovery of the population from over-exploitation (Moore and Clarke, 2002).

During even-year hunts, adverse weather conditions in the Makah U&A in winter and early spring coupled with shorter periods of daylight would keep most hunts and training exercises close to shore and of shorter duration than during the summer. Hunts also would be localized and have only a few vessels associated with the hunt (generally 5 or less). Chukotkan hunters typically use a similar number of motorized vessels to pursue individual whales but use significantly more harpoons and bullets—approximately 9 harpoons and 70 bullets per whale in recent years (IWC, 2016). Since the 1950s, Chukotkan hunters have landed, on average, over 100 ENP gray whales per year (Borodin *et al.* 2012), and an average of 126 whales per year during the past decade (IWC,

2016). During that decade the majority of whales have consistently been killed in the Chukotsky region with no apparent change in the distance offshore that whales are killed (IWC, 2016). Given these considerations, as well as the extremely limited number of whales that could be harvested during an even-year hunt, it is reasonable to expect that most of the roughly 20,000 ENP whales would be subject to little or no hunting pressure in the Makah U&A. Those animals subject to hunting and hunt training activities would experience them as temporary and localized nearshore events within the vast area of the Pacific Ocean. It is therefore reasonable to expect that whales traveling through the Makah U&A during the migration season are unlikely to change their migration patterns and avoid the area.

Odd-year hunts during July through October would likely encounter whales exhibiting feeding behavior, including milling in small, localized areas close to shore and typically within 3 miles (5 km) of shore (Brueggeman *et al.*, 1992; Darling, 1984; Sumich, 1984; Mallonée, 1991; Dunham and Duffus, 2001; Scordino *et al.*, 2011). Some animals have been seen clustering relatively far offshore (12–16 miles or 19–26 km) but these sightings are considered unusual (Calambokidis *et al.*, 2009). During summer hunts and training exercises most whales would be found in the PCFG range from northern California to northern Vancouver Island, within which the Makah U&A is a relatively small portion (less than 5 percent of the coastline in the PCFG range). Whales are known to focus on specific areas within this range but also move extensively in search of food (Calambokidis *et al.*, 1999; Calambokidis *et al.*, 2004; Calambokidis *et al.*, 2014). Odd-year hunts would result in fewer whales being pursued or struck (1 or 2 per year) than in even-year hunts (up to 3 per year). The proposed regulations would also limit the number of approaches on PCFG whales.

As noted above, despite hundreds of whales being hunted and killed in Chukotkan hunts (many of which are killed during the summer months) there has not been a discernible change in the availability and location of hunted whales (IWC, 2016). Although the proposed regulations allow for over 350 approaches on gray whales each year, most of these approaches would likely involve paddle-driven canoes that, compared to the motorized vessels used in Chukotkan hunts, have much less speed and maneuverability to pursue and maintain close contact with approached whales. Given these considerations, as well as the extremely limited number of whales that could be harvested under the proposed regulations, it is reasonable to expect that those animals exposed to hunting and hunt training activities within the Makah U&A would experience a hunt-related encounter as a temporary and localized nearshore event within the expansive PCFG range between northern California and northern Vancouver Island. As a result, it is unlikely that PCFG whales would abandon the Makah U&A.

Through hunt-related mortality, the proposed regulations may reduce the abundance of PCFG whales, thereby reducing the distribution of ENP gray whales in the PCFG feeding area, depending on the rate at which new whales recruit to the PCFG. Genetic simulations indicate that a plausible range of external recruitment is greater than 1 and fewer than 10 whales per year, with 4 whales per year being most consistent with empirical data (Lang and Martien, 2012). Over the 10 years of the regulations, that would result in 40 new animals immigrating into the group, which is more than 2 times as many animals as the maximum of 16 that could be struck and killed under the regulations.

Under the proposed regulations, Makah hunters could approach 3,530 whales during hunts and training exercises over the 10 years of the regulations. Gray whales throughout the North Pacific are subject to a considerable number of vessel approaches each year, including whale-watching operations in the U.S., Canada, and Mexico, and pursuit by Chukotkan hunters in Russia. Such approaches are likely to elicit a range of reactions from whales showing no response to whales showing more pronounced and aberrant behaviors that may include diving, fluke slapping, or changing direction. Such reactions are generally short-term and of a low impact and not likely to disturb and disrupt the migration, breathing, nursing, feeding, breeding, or sheltering behavior of marine mammals (NMFS, 2004), including PCFG gray whales.

3. References—Best Scientific Information Available

The MMPA requires that the notice of a hearing before an administrative law judge on a proposed waiver and regulations contain a statement describing the evidence before the agency that forms the basis for the regulations. The proposed waiver and regulations rely on all of the citations included in the 2015 DEIS, which are incorporated here by reference. The documents and studies cited below are of particular relevance.

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Appendix 1: Key Elements of Proposed Hunt Regulations

Element	Management Response	Rationale
I. Waiver Period	10 Years	From (NMFS 2015; Draft EIS): *"By adopting regulations with a set termination date, we would assure that the most up-to-date information regarding the status of the PCFG as a population stock would be considered after not more than 10 years. We selected 10 years because it allows a reasonable amount of time for NMFS to develop additional information about stock structure."*
II. Hunt Seasons	Even-numbered year = Dec-May Odd-numbered year = Jul-Oct	Removing June and November from odd-year hunts is expected to reduce the likelihood of encountering WNP whales during a time when they would typically be feeding in the WNP and so absent from the Makah U&A.
III. ENP Strike Limits	Maximum 3 strikes in even years, 2 strikes in odd years, subject to PCFG Strike Limits below (so a maximum of 25 strikes over 10 years).	These limits are based on the desire to keep the 10-yr probability of striking a WNP low (~6% estimated by Moore and Weller (2018)), and to limit strikes on PCFG whales.
IV. Landing Limits	Maximum of 3 landed whales during even-year hunts, 1 landed whale during odd-year hunts.	Limiting landings to 1 per odd-year hunt is intended to minimize mortality of PCFG whales.
V. WNP Strike Provision	If a WNP is struck then hunting would cease unless and until NMFS determines that measures have been taken to ensure no additional WNP gray whales are struck. For example, if a WNP were struck in an even-year hunt then future hunts could be restricted to odd-year (summer) hunts; or if a WNP were struck in an odd-year hunt then hunting may need to cease. Maximum of 1 WNPs struck over 10 years.	WNP strikes are not authorized. WNPs are not expected to be encountered in odd-year hunts and there is only ~6% chance of striking a WNP if the maximum of 15 even-year strikes are taken over 10 years (Moore and Weller, 2018). Therefore, we presume that all struck and lost whales would be ENP gray whales (some percentage of which would be PCFG whales; see "VII. PCFG Proportions for Unidentified Struck and Lost Whales" below).

Element	Management Response	Rationale
VI. PCFG Strike Limits	A maximum of 16 strikes over 10 years, no more than 8 of which may be females. Note - Catalog matches will be used where possible, otherwise accounting based on PCFG encounter probability during month of strike.	Strike limits result in 16 strikes expected on PCFG whales over 10 years and were based on a 40% encounter probability in even-year hunts and 100% in odd-year hunts. (A 40% value based on Calambokidis *et al.* (2014) was analyzed in the 2015 DEIS, however more recent data yields a 28% encounter probability estimate (IWC, 2018)). The female limit is based on concern over impacts to matrilineal fidelity to the PCFG area and the latest genetic data indicating a 50:50 sex ratio (A. Lang, pers. comm., 10/17/17). Dr. Jeff Moore's risk analysis/projections—based on the recent 14-yr period of stability—indicate that the PCFG could grow by 4.6 whales/yr (see Appendix 2 of this report). This rate of growth is consistent with the Lang and Martien (2012) genetic analysis indicating recruitment to the PCFG could be ~4 whales/yr. Therefore, the harvest of 1.6 PCFG whales/yr is not expected to exceed estimated recruitment levels.
VII. PCFG Proportions for Unidentified Struck and Lost Whales	28% PCFG in even-year hunts; 100% PCFG in odd-year hunts; and 50% PCFG females in any hunt Note—The 28% and 50% values could change based on new information.	It may not be possible to identify all whales that are struck and lost whales; flowchart "IX. Accounting for ENP and PCFG Whales" displays how such whales will be accounted for. For example, a struck and lost whale in an even-year hunt would currently count as 0.28 against the 16-whale PCFG Strike Limit and 0.14 (i.e., 0.28 encounter rate times 0.5 sex ratio) against the 8-female PCFG Strike Limit. A struck and lost whale in an odd-year hunt counts as 1.0 against the 16-whale PCFG Strike Limit and 0.5 against the 8-PCFG female Strike Limit.

Element	Management Response	Rationale
VIII. PCFG Stop-hunt Triggers	Prior to each hunting season, NMFS will review the most recent series of N and Nmin estimates reported for the PCFG* for years 2002 and later and use that data series to forecast PCFG abundance (N and Nmin) during the next hunting season. Hunting will not be authorized if the reported or forecasted N is ≤ 191 PCFG whales OR the reported or forecasted Nmin is ≤ 170 PCFG whales. * Reports by Calambokidis *et al.* typically contain PCFG abundance estimates that are 2 years behind the year the report is released, e.g.: Report Year — Estimates 2012 — 1998–2010 2013 — 1996–2011 2014 — 1996–2012 2017 — 1996–2015	During the recent 14-year stable period (2002–2015), 2007 had the lowest estimated PCFG abundance; N = 192 whales with an associated Nmin = 171 whales (Calambokidis *et al.* 2017). The PCFG has increased markedly since this low point and currently is estimated at N = 243 whales (Nmin = 228). Using these 192/171 stop-hunt triggers is intended to manage hunting so that it does not contribute to reducing the population to levels below those observed during the period of stable abundance since 2002.

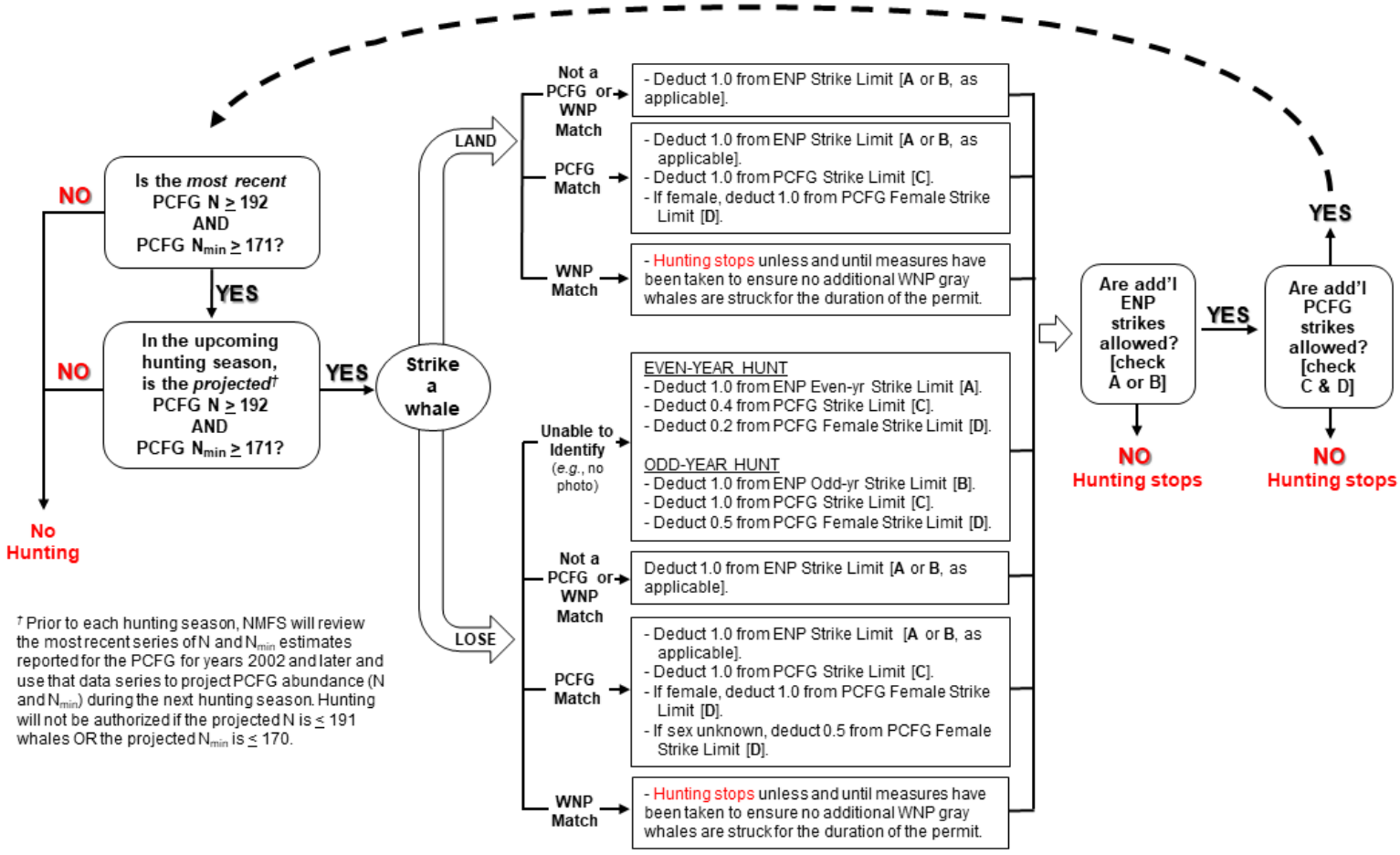
IX. Accounting for ENP and PCFG Whales

NMFS Proposed Hunt Regulations

A	B	C	D
ENP Even-yr Strike Limit	ENP Odd-yr Strike Limit	PCFG 10-yr Strike Limit	PCFG Female 10-yr Strike Limit
3	2	16*	8**

* Unidentified struck and lost whales in even-year hunts count against the PCFG 10-year strike limit in proportion to PCFG presence during the month of strike (currently 0.4 for Dec-May; values may change based on new information). In odd-year hunts such whales count as 1.0.

** Female PCFG whales are currently estimated to be 50% of PCFG whales (A. Lang, pers. comm.), so unidentified struck and lost whales currently count as 0.5 PCFG females in odd-year hunts and 0.2 PCFG females in even-year hunts (i.e., 0.5 X 0.4). These values may change based on new information.



† Prior to each hunting season, NMFS will review the most recent series of N and N_{min} estimates reported for the PCFG for years 2002 and later and use that data series to project PCFG abundance (N and N_{min}) during the next hunting season. Hunting will not be authorized if the projected N is ≤ 191 whales OR the projected N_{min} is ≤ 170.

Element	Management Response	Rationale

X. References for Appendix 1

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Appendix 2: Forecasting Abundance Estimates for the Pacific Coast Feeding Group (PCFG)

In October 2017, Dr. Jeff Moore[6] developed a model for forecasting PCFG population size and N_{min} estimates for the period 2016 – 2028. The forecast begins one year after that of the most recent survey estimate. The terminal forecast year marks the end of the proposed decade-long hunt period. The model is based on population size estimates from 2002 to 2015 (Calambokidis *et al.* 2017). The year 2002 was used as a starting point for estimating model parameters because this approximately marks the beginning of a decade-long period during which the PCFG population size was fairly stable. Before 2002, PCFG numbers were increasing rapidly. Including pre-2002 data in the model would inflate estimates of the population's more recent and current growth rate and thus likely overestimate population growth and abundance during the forecast period.

A key model assumption is that population processes underlying the data from 2002 to 2015 will be the same during the forecast period. This implies that PCFG gray whales will encounter a similar environment (with similar variation) during the next decade as during the previous one, that there will be no catastrophic events or other circumstances that cause radically different population dynamics from what has been observed in the past decade. Another important model assumption is that the population follows a stochastic exponential population-growth process. This contrasts with assuming a density-dependent process, whereby the annual population growth rate would be expected to slow as the population gets larger and approaches some carrying capacity. However, even with these assumptions, because past population size estimates from 2002 to 2015 are not perfectly accurate (so we don't know exactly how much the population changed from year to year), and because the annual percentage change in the true population size varies from year to year, there is substantial uncertainty in what the population will do over the next decade and beyond. This uncertainty is captured by the model and reflected in the forecasts. The true uncertainty is greater but unquantifiable (because we don't know, for example, the likelihood of a catastrophic event or significant changes to PCFG habitat). Of course, if future survey estimates become available (e.g., during the forecast period), then uncertainty in the forecasts becomes moot.

The exponential growth model is $N_t = N_{t-1}\lambda_t - M_t$. Population size ($N$) in year t is given by the product of N for the previous year multiplied by the annual rate of change (λ_t), minus hunting mortality for the year (M_t). A value of λ less than or greater than 1 implies natural population decline or increase, respectively. The subscript t on λ denotes that the annual rate of change is not constant, but rather that it varies from year to year (i.e., is stochastic) according to a lognormal distribution: $\log(\lambda_t) \sim \text{Normal}(\mu, \sigma)$. Annual hunt mortality is fixed at zero for the first few years of the projection period (because there was no hunt from 2016 to 2018), and after that it is treated as a Poisson process: $M_t \sim \text{Poisson}(\theta)$, where $\theta = 1.6$ is the mean or expected annual hunting mortality, based on the expectation that 16 PCFG animals would be susceptible to strike over the 10-year period (see Appendix 1 of this report).

[6] Research biologist and leader of the California Current Marine Mammal Assessment program with the Marine Mammal and Turtle Division of the NMFS Southwest Fisheries Science Center.

A bootstrap simulation approach was used to estimate model parameters and forecast population size. The approach consists of repeating the following steps many thousands of times, with one repetition referred to as an iteration, or *i*. For each *i*:

- Draw random values for each N_t (for the years 2002 to 2015) from the distributions for these population estimates (random values were drawn assuming a multivariate normal process and using the variance-covariance matrix for the estimates in Calambokidis *et al*., 2017, provided to Jeff Moore by Andre Punt through pers. comm.).
- Use the randomly drawn N_t to estimate the λ_t (i.e., $\lambda_t = N_t/N_{t-1}$), from which μ and σ^2 are estimated as the mean and variance, respectively, for the $\log(\lambda_t)$.
- Given μ and σ^2, and θ, generate a population forecast using the exponential growth model above, where in each forecast year *t*, random λ_t and M_t are drawn from their respective distributions.

This process generates many thousands of plausible population trajectories (a subset of which are depicted for illustration as the gray lines in Figure 1). These are summarized to forecast the expected population size from 2016 onward (i.e., the mean population size across trajectories in each year *t*), represented by the red (or blue) solid lines in Figure 1. The 20th percentile value at each *t* (*i.e.*, the value for which 20% of the N_t estimates are smaller) represents $N_{\min,t}$.

At the time of writing this document, the population has been forecasted from 2016 to 2028 because 2015 is the most recent survey estimate. However, if new survey estimates are generated in the future, the model will be updated, forecasts will be revised, and the forecast period will be shortened (for example, if a new publication provides survey estimates through 2019, the model would be re-run and the forecast period would be from only 2020 to 2028 rather than 2016 to 2028).

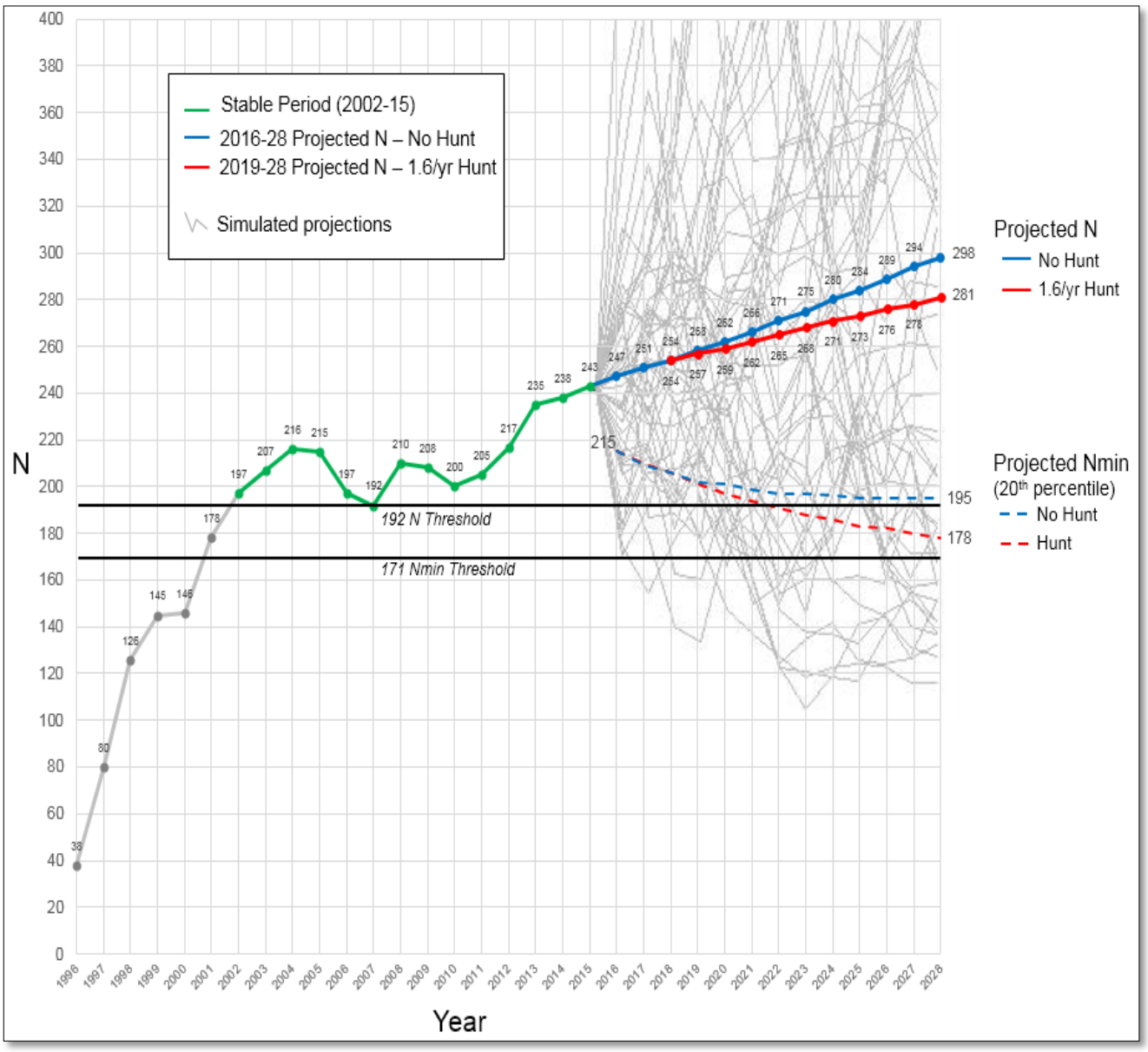

Figure 1. Historical and forecasted estimates for PCFG population size (historical values are from Calambokidis *et al*. 2017[7]). Green depicts point estimates for the survey period (2002 to 2015) used to parameterize the forecasting model. Solid red and blue lines show expected forecast values under a scenario of hunting or no-hunting, respectively. Dotted red and blue lines show corresponding N_{min} estimates. Gray lines are a subset of population trajectories from individual iterations of the bootstrap simulation model and are shown to illustrate the range of uncertainty in what the population might actually do. Solid black horizontal lines depict threshold values that would trigger an end to the hunt: if new survey or updated forecast estimates for N_t fell below 192 (the lowest point estimate for 2002 to 2015) or if $N_{min,t}$ fell below 171 (the lowest N_{min} for the same time period).

[7] Calambokidis, J., Laake, J., and A. Perez. 2017. Updated analysis of abundance and population structure of seasonal gray whales in the Pacific Northwest, 1996-2015. Paper SC/A17/GW/05 presented to the Scientific Committee of the International Whaling Commission.

Appendix 3: Status of the Pacific Coast Feeding Group of Eastern North Pacific Gray Whales

The U.S. Marine Mammal Protection Act (MMPA) directs NMFS to complete stock assessment reports (SARs)[8], which, among other things, serve to identify marine mammal "population stocks," the fundamental unit of legally-mandated conservation under the MMPA. The MMPA provides general guidance on preparing SARs, and more detailed guidance is contained in agency "Guidelines for Assessing Marine Mammal Stocks" (GAMMS), which undergo public review and comment, including by the Marine Mammal Commission, and are periodically updated. The most recent GAMMS (NMFS, 2016) includes a section on "Definition of Stock," which describes a stock as an MMPA management unit that identifies a demographically independent biological population. "Demographic independence means that the population dynamics of the affected group is more a consequence of births and deaths within the group (internal dynamics) rather than immigration or emigration (external dynamics)" (NMFS, 2016, p. 3).

NMFS scientists develop SARs according to the GAMMS. Section 117 of the MMPA requires that the SARs be reviewed by regional scientific review groups (SRG) and made available for public comment and review. 16 U.S.C. § 1386. The Marine Mammal Commission routinely reviews and comments on the SARs during the public comment period (e.g., Carretta *et al.*, 2017; 80 FR 50599, August 20, 2015). This statutory process is the appropriate mechanism for designating population stocks of marine mammals under the MMPA and NMFS will continue to rely on it to consider the best available scientific information and to identify stocks and their population parameters.

The first SAR in 1995 (Small and DeMaster, 1995, p. 75) stated that "gray whales have been reported feeding in the summer in waters off Southeast Alaska, British Columbia, Oregon, and Washington." The 2005 SAR was the first to refer to such whales as a "Pacific coast feeding aggregation." The International Whaling Commission (IWC) in 2011 referred to this feeding aggregation as the "Pacific coast feeding group" (PCFG) and defined it as gray whales observed (i.e., photographed) in multiple years between 1 June and 30 November in the PCFG area (between 41°N and 52°N) (IWC, 2011). NMFS has used the term 'PCFG' since the 2012 SAR (Carretta *et al.*, 2013), which was the first SAR to report various population metrics for such whales (e.g., minimum abundance estimates and levels of potential biological removal (PBR)). In their comments on the 2012 SAR, the Alaska SRG recommended NMFS not recognize the PCFG as a

[8] SARs take many months to finalize after scientific review and public comment, thus the citation (based on lead author and publication year) might cite a year that is different from the year contained in the report title. For example, Carretta *et al.* (2017) is titled "U.S. PACIFIC MARINE MAMMAL STOCK ASSESSMENTS: 2016," and is referred to as the 2016 SAR. In addition, because the SARs are published as a collection of individual stock reports by region, the report for an individual stock within that collection might be updated, or it might repeat the text unchanged from a previous SAR, or it might not be included at all. For example, the ENP gray whale stock report that appears in the Pacific 2016 SAR (published in 2017 as Carretta *et al.* (2017)) first appeared in its present form in the 2014 SAR, which was published in 2015 as Carretta *et al.* (2015). However, the ENP gray whale stock report was not included in the most recently published SAR (2017 SAR, published in 2018 as Carretta *et al*. (2018)), because the Pacific 2017 SAR included only individual reports that had been revised that year.

separate stock, and (consistent with views expressed by the Pacific SRG) also recommended that NMFS not refer to this group as a "prospective stock" (Alaska SRG, 2012; p. 16). In 2012, the Pacific SRG assumed responsibility for reviewing the gray whale SAR. In 2014 the Pacific SRG deliberated whether a PBR should even be calculated for the PCFG since it is not a separate stock under the MMPA and doing so would set a precedent for reporting an "informational PBR." Ultimately the SRG recommended that a separate PBR be calculated for the PCFG "for informational purposes only as the evidence was not persuasive enough at that time for the SRG to recommend that it be considered a separate stock" (Pacific SRG, 2014; pp. 6–7). The SAR for Eastern North Pacific (ENP) gray whales was last updated in July 2015 and the SRG reviews since then have not recommended a change in the status of the PCFG (Carretta *et al.*, 2016; Carretta *et al.*, 2017).

During the NEPA process associated with the Makah Indian Tribe's waiver request, we engaged the SAR process to further evaluate PCFG whales, which included convening a Task Force of agency scientists (Weller *et al.* 2013) specifically tasked with providing advice on the primary question: Is the PCFG a 'population stock' under the MMPA? The DEIS notes that this question has immediate management implications, including how future SARs will address gray whale stock structure in the North Pacific, and how to interpret any new information in the context of the Makah Tribe's waiver request. The Task Force reviewed all available information regarding the demographic independence of the PCFG. The Task Force framed their task as follows:

> *"That is, if the PCFG experiences little external recruitment then it would be considered demographically independent and should be recognized as a stock. If most of the recruitment into the PCFG were external, however, then it would not be considered demographically independent and would not be recognized as a stock. The [Task Force] concurred that the resolution of the existing photo-identification data in combination with uncertainly[sic] surrounding the accuracy of assigning whales as external or internal recruits prevent this question from being fully resolved. Increased genetic sampling in tandem with increased photo-id effort over both space and time may be the only way to better address this question."*

The Task Force reviewed the available genetic information and noted that various studies had found differences in mitochondrial DNA (mtDNA) between PCFG whales and whales from northern feeding areas, indicating some level of demographic independence. At the same time they noted the lack of support for differences in nuclear DNA between PCFG whales and the rest of the ENP and concluded "it is most likely that PCFG animals are interbreeding with animals coming from other areas." The Task Force "agreed that the critical issue for additional research to address was better determining the levels of internal versus external recruitment in the PCFG" as that was the key to determining the demographic independence of the PCFG.

After reviewing the best scientific information available from photo-identification, genetics, tagging, and other studies, the Task Force applied the GAMMS guidance to conclude that there is a substantial level of uncertainty in the strength of the lines of evidence supporting demographic independence of the PCFG. Consequently, the Task Force was unable to provide definitive advice

as to whether the PCFG is a population stock under the MMPA and the GAMMS guidelines. The Task Force report was reviewed during the SAR process which, since 2012, has continued to result in NMFS finding that the PCFG is a feeding group that "may warrant consideration as a distinct stock in the future" (Carretta *et al.*, 2017).

Subsequent to the Task Force findings and in response to our 2015 DEIS, the U.S. Marine Mammal Commission (MMC) acknowledged the uncertainty surrounding the status of PCFG whales and, consistent with recommendations by other commenters, supported the precautionary approach in the DEIS of including alternatives that separately manage impacts to the PCFG and analyzing impacts to the PCFG, in a sense treating it as if it were a population stock. Specifically, the MMC recommended that we adopt a hunt management scheme that would "keep [the PCFG] within its OSP [optimum sustainable population level] or some proxy for OSP" (MMC, 2015). While it is not known whether the PCFG is within a theoretical OSP (Punt and Moore, 2013), the analysis in the DEIS considers how the alternatives might affect the OSP status of the PCFG.

NMFS will continue to review and evaluate the stock structure of North Pacific gray whales through the SAR process. That process includes taking into account other recent efforts to comprehensively assess the Pacific-wide stock structure of gray whales. For example, between 2014 and 2018 the IWC has convened five workshops on this matter. Although the IWC does not have a stock identification practice equivalent to that which NMFS utilizes domestically, the overarching objective of these workshops has been to develop a series of range-wide stock structure hypotheses, using all available data sources (e.g., photo-identification, genetics, tagging), that can be tested within a modelling framework. At the most recent and fifth workshop (IWC, 2018) the IWC scientists concluded that two hypotheses (3a and 5a) were the most plausible stock structure scenarios and would form the reference cases for further IWC analysis:

- Hypothesis 3a assumes that whilst two breeding stocks (Western and Eastern) may once have existed, the Western breeding stock is extirpated. Whales show matrilineal fidelity to feeding grounds, and the Eastern breeding stock includes three feeding aggregations: PCFG, Northern Feeding Group, and Western Feeding Group.
- Hypothesis 5a assumes that both breeding stocks are extant and that the Western breeding stock feeds off both coasts of Japan and Korea and in the northern Okhotsk Sea west of the Kamchatka Peninsula. Whales feeding off Sakhalin include both whales that are part of the extant Western breeding stock and remain in the western North Pacific year-round, and whales that are part of the Eastern breeding stock and migrate between Sakhalin and the eastern North Pacific.

Neither scenario conflicts with NMFS' current characterization in the SAR of an ENP gray whale stock that includes the PCFG.

References for Appendix 3

Alaska Scientific Review Group (SRG). 2012. Minutes of the Twenty-fifth Meeting of the Alaska Scientific Review Group. 31 January - 01 February 2012, Anchorage, AK. Available at: https://www.fisheries.noaa.gov/national/marine-mammal-protection/scientific-review-groups#alaska-scientific-review-group.

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Carretta, J., and 15 co-authors. 2017. U.S. Pacific Marine Mammal Stock Assessments: 2016. NOAA-TM-NMFS-SWFSC-577.
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Appendix 4: NMFS Research and Monitoring Activities Addressing North Pacific Gray Whales and the ENP Gray Whale Stock

Since eastern North Pacific (ENP) gray whales were removed from the U.S. List of Endangered and Threatened Wildlife and Plants in 1994 (59 FR 31094, June 16, 1994), NMFS has continued to research, monitor, and evaluate the population structure and status of North Pacific gray whales. Table 1 below details some of the many past and ongoing scientific assessments, which are presented in the context of the recommended or potential research and monitoring activities identified in the NMFS 1999 gray whale status review (Rugh *et al*., 1999a). Items in the first column (including references therein) are reproduced verbatim from the 1999 status review, though not all are included in their entirety. The second column describes activities undertaken by NMFS and collaborators to implement the research and monitoring elements identified in the first column.

Table 2 summarizes scientific and related publications pertaining to gray whales authored by NMFS scientists during 2013 to 2017.

TABLE 1. Research and monitoring activities identified in the NMFS 1999 gray whale status review, and a summary of their implementation since 1999.	
6.1) Abundance and trends in abundance	**Implementation update**
6.11) Granite Canyon, California: NMML [the NMFS Marine Mammal Laboratory] frequently conducts full-season counts of gray whales during the southbound migration past this shore station in central California (Shelden *et al*., in press). This has proven to be an optimal site both logistically (easy access in an area with a relatively mild climate) and biologically (where most of the gray whale population passes close to shore each year). The census conducted at Granite Canyon has provided a long-term, consistent monitoring of stock abundance and trends (since 1968). Although this stock is not considered to be at risk, the continuation of the seasonal counts will provide an ideal opportunity to study a large cetacean population as it approaches carrying capacity. The Granite Canyon census is considered to be a low risk investment as it is a system that has been well tested. Further testing is needed to improve corrections for pod-size estimates, continue studies of observer performance, and increase the accuracy of statistical variances within the observation data.	The Granite Canyon surveys have continued and are described in more detail in Laake *et al*. (2009), Laake *et al*. (2012), Durban *et al*. (2015), and Durban *et al*. (2017). These sources also describe improvements in corrections for pod-size estimates and observer performance. The most recent (2015/16) estimate of 26,960 (95% highest posterior density interval = 24,420-29,830) represented a 22% (5,970 whales) increase in the five years since the 2010/11 estimate of 20,990 (Durban *et al*. 2017).

TABLE 1. Research and monitoring activities identified in the NMFS 1999 gray whale status review, and a summary of their implementation since 1999.	
6.12) Point Vicente, California: Every year, ACS/LA [American Cetacean Society – Los Angeles Chapter] volunteers conduct full season counts of both the southbound and northbound migrations past Point Vicente, near Los Angeles (Schulman-Janiger, 1999a). These counts have been collected consistently since 1984 and are beneficial to time-series analyses; however, only a portion of the population passes this site during the southbound and northbound migrations.	These surveys have continued to operate annually since the 1999 NMFS status review (http://acs-la.org/GWCensus.htm). The 2017/18 survey marked the project's 35th consecutive full season and documented the ninth highest southbound gray whale count, third highest southbound gray whale calf count, ninth highest northbound gray whale count, and seventeenth highest northbound gray whale calf count.
6.13) Yaquina Head, Oregon: A volunteer from Oregon State University conducted counts of gray whales at Yaquina Head, near Newport, Oregon, in the 1998/99 season (Mate and Poff, 1999). This site was also used for counts of the southbound and northbound migrations in 1978-81 (Herzing and Mate, 1984).	Gray whales were only counted at Yaquina Head as reported in Rugh *et al*. (1999a).
6.14) Other sites: NMFS has no plans for systematic counts at locations other than Granite Canyon since this has proven to be the best site for shore-based counts.	N/A
6.141) Cape Sarichef, Alaska: Cape Sarichef, on the west edge of Unimak Island, is an ideal location for studying the gray whale migration in and out of the Bering Sea. This site was used for gray whale counts during several southbound and northbound migrations in the 1970s (e.g., Rugh, 1984). However, the U.S. Coast Guard no longer maintains a facility there, making it logistically impractical to conduct research.	As noted, this was an impractical site for abundance surveys. However, research has occurred on killer whale predation around the Aleutian Islands, particularly Unimak Pass (Durban *et al*., 2010; Barrett-Leonard *et al*., 2011).

TABLE 1. Research and monitoring activities identified in the NMFS 1999 gray whale status review, and a summary of their implementation since 1999.	
6.142) Narrow Cape, Kodiak Island, Alaska: Narrow Cape, on the south side of Kodiak Island, is an accessible site with a good view of the migratory corridor in the area, but gray whales also migrate on the north side of Kodiak Island, so the portion of the population passing Narrow Cape each year is unknown. No full-season counts have been conducted from this site.	Systematic counts of gray whales have not been conducted near Kodiak Island; however, some opportunistic gray whale research has occurred (Moore *et al.* 2007; Gosho *et al*., 2011). In 2015, SWFSC undertook a Collaborative Large Whale Survey (CLaWS) from 9 July through 9 November aboard NOAA Ship Reuben Lasker (Weller *et al*., 2017). The survey was a collaborative effort between SWFSC and AFSC, with particular effort dedicated to finding, photographing and biopsy sampling gray whales off Kodiak Island. Additional research on killer whale predation around the Aleutian Islands, particularly Unimak Pass has also been conducted (Durban *et al*., 2010; Barrett-Leonard *et al*., 2011).
6.15) Stock assessment: NMFS conducts an assessment of the Eastern North Pacific stock of gray whales at least every 3 years (Hill and DeMaster, 1998); the stock assessment is currently being updated. The International Whaling Commission (IWC) conducts comprehensive assessments of stocks before harvest quotas are set (IWC, 1998b); the next gray whale assessment will be in 2003.	NMFS has produced a stock assessment report (SAR) for ENP gray whales in every year since 1999 (except for 2004) and updated abundance estimates and other population parameters for the stock when they become available. For example, the most recent ENP stock abundance estimate (for 2015/16) is 26,960 whales (Durban *et al*., 2017) which we expect to be reported in the 2018 SAR. In addition, the IWC continues to set catch limits for "gray whales from the Eastern stock in the North Pacific" as a single group (IWC, 2012) and convened a series of workshops beginning in 2014 to review the range-wide status and structure of North Pacific gray whales (IWC, 2014; 2015; 2016; 2017). A final workshop held in March 2018 (IWC, 2018) identified two scenarios for gray whale stock structure as the most plausible; neither scenario conflicts with NMFS' current characterization in the SAR of an ENP gray whale stock that includes the Pacific Coast Feeding Group.

TABLE 1. Research and monitoring activities identified in the NMFS 1999 gray whale status review, and a summary of their implementation since 1999.	
6.16) Stock identification and discreteness: Genetic analysis may provide information on the degree of genetic variety within the Eastern North Pacific gray whale stock as well as determine differences between this stock and the Western North Pacific (Korean) stock (e.g., Rosel and Kocher, 1997). Genetic discreteness of summering populations may be a factor in management decisions (Darling *et al*., 1998), specifically with regard to the whales in northwestern Washington where Makah Indians are whaling.	A number of studies on stock identification have been completed since 1999 by NMFS and other scientists, including: Ramakrishnan and Taylor (2000); Ramakrishnan *et al*. (2001); Steeves *et al*. (2001); LeDuc *et al*. (2002); Frasier *et al*. (2011); Lang *et al*. (2011a,b); Lang and Martien (2012); D'Intino *et al*. (2012); Bickham *et al*. (2013); Weller *et al*. (2013) [NMFS Task Force Report]. The NMFS Task Force Report specifically considered the question of "the discreteness of summering populations . . . in northwestern Washington." Also, NMFS issued updated *Guidelines for Preparing Stock Assessment Reports Pursuant to Section 117 of the Marine Mammal Protection Act* [GAMMS] in 2016, including clarifications regarding "demographic independence" and "reproductive independence" when identifying stocks under the Marine Mammal Protection Act (MMPA) (NMFS, 2016). In 2015, prompted by observations of western North Pacific (WNP) whales in U.S. waters, NMFS issued the first stand-alone WNP gray whale SAR (Carretta *et al*., 2016). The latest SARs continue to identify two stocks (WNP and ENP) of gray whales (Carretta *et al*., 2017a).
6.2) Population health and viability	**Implementation update**
6.21) Calf counts	
6.211) Granite Canyon, California: The whale counts conducted by NMML at Granite Canyon during the southbound migration include counts of calves (Shelden *et al*., in press).	These counts have continued (see 6.11, above).

TABLE 1. Research and monitoring activities identified in the NMFS 1999 gray whale status review, and a summary of their implementation since 1999.	
6.212) Piedras Blancas, California: During the past several years, the NMFS Southwest Fisheries Science Center (SWFSC) has conducted shore-based counts of gray whale calves during the northbound migration (Perryman *et al.*, 1999b). Sighting rates at Piedras Blancas are compared to abundance estimates made by NMML during the southbound migration.	These counts have continued (e.g., Perryman *et al.*, 2002; Perryman *et al.*, 2011; Perryman and Weller, 2012; Perryman *et al.*, 2017). The 25-year (1994-2018) data set serves as an excellent foundation upon which to examine the inter-play between changing environmental conditions and gray whale population dynamics (Perryman *et al.*, 2017).
6.213) Point Vicente, California: The ACS/LA chapter includes calf counts in their ongoing effort at Point Vicente. The results show the percentage of calves seen during both the southbound and northbound migrations (Schulman-Janiger, 1999b).	These counts have continued (see 6.12 above).
6.214) Baja California Sur: Counts of calves will continue to be a part of the studies of gray whales in Baja California Sur (*e.g.*, Urbán *et al.*, 1997).	These counts have continued (*e.g.*, Urban *et al.*, 2010; 2011; 2015; 2016; 2017; 2018).
6.22) Condition index: Photogrammetric studies conducted by the SWFSC help provide data on number of pregnant whales, proportion of sightings with calves, and lengths and other dimensions of whales. Dimension data can indicate animal health as a function of fat reserves (Perryman and Lynn, 1999).	Additional photogrammetric studies of gray whales have been conducted by Peryman and Lynn (2002) and Sumich and Show (2011). Beginning in 2015 SWFSC has been using drones to collect aerial images, suitable for photogrammetry, of gray whales, particularly mother-calf pairs, as a routine part of their calf production survey (6.212; see https://swfsc.noaa.gov/MMTD-CHLHP/)
6.23) Biological sampling	
6.231) Harvest: Data from harvested whales can help establish pregnancy rates and indicate health of individuals (e.g., Reilly, 1992, Blokhin, in press c).	Russia reports these types of data to the IWC Scientific Committee (*e.g.*, Blokhin *et al.*, 2017).

TABLE 1. Research and monitoring activities identified in the NMFS 1999 gray whale status review, and a summary of their implementation since 1999.	
6.232) Natural mortality: Samples from stranded whales may provide information on biological parameters, including reproductive condition, age, length, contaminant loads, stock discreteness, types of parasites or diseases, and cause of death (e.g., Heyning and Dahlheim, in press).	Stranded gray whales are regularly assessed by NMFS' stranding network and results reported in the SARs (e.g., Carretta *et al.*, 2017a) and associated reports on *Sources of Human-related Injury and Mortality for U.S. Pacific West Coast Marine Mammal Stock Assessments* (*e.g.*, Carretta *et al.*, 2017b). In addition, investigators perform necropsies (e.g., see www.cascadiaresearch.org) and take samples for analysis, including contaminant concentrations (Krahn *et al.*, 2001; Mendez *et al.*, 2002; Ruelas-Inzunza and Paez-Osuna, 2002; Rueles-Inzunza *et al.*, 2003; Ylitalo, 2008; Ylitalo *et al.*, 2018).
6.3) Distribution and habitat use	**Implementation update**
6.31) Baja California Sur: Proposed studies include photo-identification of individual whales, radio-telemetry, and satellite-tagging. Results will provide information on persistence and consistency of use of certain lagoons. There was an intense study in 1980-85 that involved several of the lagoons (*e.g.*, Jones and Swartz, 1984). A multi-dimensional study over another 5-year period would provide a valuable comparison to the previous research.	NMFS has partially funded and participated in recent photo-identification studies to match whales in the calving lagoons with WNP gray whales (Weller *et al.*, 2012). Gray whales have been satellite tagged in the lagoons, providing information about migrations (see 6.331 below). Genetic analysis and photo identification have revealed some level of site fidelity to calving lagoons (Goerlitz *et al.*, 2003; Alter *et al.*, 2009). Recent telemetry studies in the lagoons include those reported by Mate and Urban (2005), and Jiminez (2017).
6.32) Washington State: Photo-identification studies conducted by Cascadia Research Collective and the NMML (e.g., Calambokidis and Quan, 1999, Gosho *et al.*, 1999a and 1999b) provide information on how often individual whales are found in areas around northwestern Washington. This research will help answer questions about the "resident" vs. "transient" whales in the area where Makah Indians hunt whales.	Cascadia Research Collective has continued to conduct and coordinate multi-institutional photo-identification studies extending from northern California to southern British Columbia, with support from NMFS (*e.g.*, see Calambokidis *et al.*, 2017). In addition, the Makah Tribe and NMFS have conducted photo-identification surveys in the Makah U&A, including the proposed hunt area (Scordino *et al.*, 2011, 2013, 2014).

6.33) Migration and foraging	
6.331) Satellite tagging: Satellite tagging of gray whales would provide information on the timing and location of whales during their northbound migration and where they spend time feeding.	A number of projects by NMFS and other researchers have deployed satellite tags on North Pacific gray whales, revealing valuable information about their migrations and stock structure (Mate and Urban-Ramirez, 2003; Mate and Urban, 2005; Mate *et al*., 2010; Mate *et al.*, 2011; Mate *et al*., 2015; Ford *et al*., 2013; Jiminez ,2017, and see https://swfsc.noaa.gov/MMTD-GrayWhale-tracking/).
6.332) Distribution information: Distribution data may be collected from a variety of marine mammal surveys, such as the NMML cetacean surveys across southern Alaska, observations on fisheries research cruises, records collected in the Platforms of Opportunity Program, etc.	The shore-based surveys and the tagging studies cited above have provided information on distribution during migration. In addition, there have been a number of studies of gray whale distribution on northern feeding grounds, as described below, and in the area between San Diego, CA and Kodiak Island, AK (Weller *et al*., 2017).
6.333) Migratory timing: Migratory timing can be documented through shore-based observations at sites used in the past, such as Point Vicente, Granite Canyon, and Yaquina Head (Rugh *et al*., 1999a and 1999b).	As described above, these surveys are ongoing.
6.34) Summer distribution: Aerial and/or vessel surveys may provide information on current gray whale use of historic feeding grounds in the Bering and Chukchi Seas. Oceanographic sampling could document potential changes in prey production and availability (e.g., Grebmeier and Barry, 1991).	NMFS researchers have been involved in a number of aerial surveys of large whales in the Bering, Beaufort, and Chukchi seas (e.g., Clarke *et al*., 2013; Friday *et al*., 2016; Clarke *et al*., 2017).
6.4) Anthropogenic concerns	**Implementation update**

6.41) Contaminant loads: Contaminant loads are documented by the NMFS Northwest Fisheries Science Center (NWFSC) from samples collected from strandings and biopsies (Tilbury *et al*., 1999).	NMFS and other researchers have continued to investigate contaminants in sampled gray whales (Krahn *et al*., 2001; Mendez *et al*., 2002; Ruelas-Inzunza and Paez-Osuna 2002; Rueles-Inzunza *et al*., 2003; Ylitalo, 2008). Approximately 25 recent gray whale tissue samples were recently evaluated by NMFS' NWFSC (Ylitalo, *et al*., 2018).
6.42) Oil spills and post-spill monitoring: There is a need for an oil-spill response protocol to minimize the effects of oil spills on gray whales. To develop this protocol, experimental designs are needed to minimize impacts of oil spills and better understand the risks to gray whales relative to different locations and intensities of oil spills.	NOAA's Office of Response and Restoration has recently partnered with the Pacific States/British Columbia Oil Spill Task Force (formed in 1988) to incorporate its oil spill data into NOAA's Environmental Response Management Application (ERMA), an online mapping tool that integrates both static and real-time data, such as Environmental Sensitivity Index (ESI) maps (including gray whales), ship locations, weather, and ocean currents, in a centralized system for environmental responders and decision makers. In the vicinity of the proposed Makah whale hunt, Washington State has maintained a year-round rescue tugboat at Neah Bay since 2008 to aid disabled vessels and thereby prevent oil spills.

6.43) Noise: Peter Tyack (Woods Hole Oceanographic Institute) and Chris Clark (Cornell University) have recently conducted and will probably continue to conduct acoustic studies relative to the response of large cetaceans, including gray whales, to Low Frequency Active (LFA) underwater transmissions (Tyack and Clark, 1998).	When evaluating impacts on marine mammals under the MMPA and Endangered Species Act (for WNP gray whales), NMFS frequently assesses and requires research on activities that produce acoustic impacts that may affect gray whales. For example, in 2012 and 2013 we issued MMPA letters of authorization (NMFS, 2012 and 2013) to the U.S. Navy for training activities along the West Coast that allow for limited harassment of gray whales. As part of those authorizations, the Navy is also required to invoke various mitigation measures, including lookouts, mitigation zones, and a stranding response plan. Seismic activities can have a significant impact on WNP gray whales (Weller *et al*., 2002 and 2006) and the International Union for Conservation of Nature's (IUCN) Western Gray Whale Advisory Panel has established a Noise Task Force that meets regularly to conduct the following: • Review and analyze noise predictions and estimated WNP gray whale densities in the feeding area for the proposed period of the seismic survey; • Develop recommendations for mitigating the impacts of the seismic survey on the whales; • Develop recommendations for monitoring underwater sound and gray whale distribution and behavior during the survey to both minimize any impact on gray whales in "real time" and to contribute to scientific knowledge regarding the effects of seismic surveys on whales and how to prevent or mitigate such effects in future surveys. The Noise Task Force produces annual reports available at: https://www.iucn.org/western-gray-whale-advisory-panel/panel/task-forces/seismic-surveys-and-noise-task-force.

6.44) Fishery interactions: The degree of impact of commercial and recreational fisheries on gray whales may be assessed through examinations of stranded whales, permit reports, and ships' log books. In particular, more information is needed from Mexico and Canada.	The SARs include information on fishery interactions (*e.g.*, Carretta *et al.*, 2017) derived from associated reports on *Sources of Human-related Injury and Mortality for U.S. Pacific West Coast Marine Mammal Stock Assessments* (e.g., Carretta *et al.*, 2017b). See also Baird *et al*. (2002) for an evaluation of gray whale mortality in British Columbia fishing operations, Scordino *et al*. (2017) for estimates in the entire North Pacific for years 1924 through 2015, and Lowry *et al*. (2018) for a review of entanglement risk to western gray whales from commercial fisheries in the Russian Far East. .
6.45) Commercial development in critical habitats	
6.451) Salt extraction in Baja California Sur: A large salt evaporation facility is proposed for San Ignacio Lagoon (SEMARNAP, 1997). If this facility is developed, the impact on whales using this lagoon should be studied. A comparison could be made between potential impacts of proposed salt work developments in Baja California Sur and the observed impacts of northwestern Australian salt works on humpback whales.	Mitsubishi and the Mexican government withdrew plans for a salt extraction plant in San Ignacio Lagoon in 2000 (Sullivan, 2006).
6.452) Oil and gas exploration and extraction: Oil and gas exploration and extraction have the potential of impacting whales along much of the migratory route, including feeding areas in the Bering and Chukchi Seas.	The 2015 Draft Environmental Impact Statement (DEIS) (NMFS, 2015) describes existing and potential future oil and gas development (Section 3.4.3.6, Known and Potential Anthropogenic Impacts).

6.453) Coastal development: Coastal development, and the concomitant increase in human activities offshore, along much of the western shores of Mexico, the United States, and Canada has the potential of adversely impacting gray whales along their migration route (Moore and Clarke, in press).	The 2015 DEIS (NMFS 2015) describes existing and future coastal development (Section 3.4.3.6, Known and Potential Anthropogenic Impacts).
6.46) Whale watching	
6.461) Regulations: A monitoring system should be established for operators of whale watching vessels; for example, through permit reports and/or log books. The IWC has established a subcommittee to provide guidelines for whale watching (IWC, 1997d).	Many whale watch operators in the United States and Canada adhere to the Be Whale Wise guidelines (see 6.462 below). The MMPA prohibits any person from harassing a marine mammal. The Government of Mexico regulates whale watching in breeding lagoons. In 2011, the IWC Whale Watching Working Group produced a 5-year Strategic Plan for Whale Watching (IWC, 2011), and in 2016 agreed that this should continue as the overarching strategy on whale watching that could be updated as required. This IWC working group is also developing a Handbook for Whale Watching that will be a web-based and evolving tool. It aims to support whalewatching operators, regulators and managers, and those planning a whalewatching trip, to educate and help ensure whalewatching is sustainable now, and as it develops into the future.

6.462) Studies: Studies should be conducted to evaluate the impact of whale watching operations. Whales and boats could be tracked using theodolites based on strategic shore-based sites. In Bahía Magdalena and San Ignacio Lagoon there are ongoing studies of whale watching operations (Pérez-Cortés Moreno[8]; Sánchez Pacheco, 1997b)	Studies of whalewatching operations in Mexican lagoons have been ongoing. For example, the Mexican government has applied whalewatching regulations to commercial operators since 1997 and there are currently regulations governing the numbers of boats and methods of approach for specific whale-watching areas in the Baja lagoons. In Washington and British Columbia, NMFS and conservation organizations in the United States have teamed up with the Canadian government and conservation organizations to adopt 'Be Whale Wise' guidelines for vessels, kayaks, and other crafts used for watching whales. The guidelines, among other things, recommend that vessels keep a 100-yard (91-meter) buffer between the vessel and the whale, and recommend a slow approach speed of 7 knots within 400 yards (366 meters) of whales. As noted above under 6.461, the IWC Whale Watching Working Group recently produced a Strategic Plan for Whale Watching that includes a research objective with actions to: (1) develop (and/or review) guiding principles to be followed in whalewatching operations; (2) develop guidance and advice on additional mitigation measures that may be required for whalewatching operations on data deficient and critically endangered cetacean populations; and (3) explore an integrated research program to better understand the potential impacts of whalewatching on the demographic parameters of cetacean populations.
6.463) Photographs: Whale watching operations can be a source of photographs that may be used to identify individual whales. This could be beneficial in determining the amount of time individual whales stay in an area relative to the number of boats.	There is an extensive database of photographs of ENP and WNP whales, primarily funded as research. This recommendation could be explored further. One operator operating near Monterey, California, reports that photos taken on their whalewatching trips are "contributing to assessments of population, residency patterns, and migration or movement patterns" (see http://www.montereybaywhalewatch.com/)

6.47) Strandings: Currently there are stranding networks in the United States and Mexico. On the U.S. West Coast, stranding information is collected by the NMFS Alaska Regional Office in Alaska, Northwest Regional Office in Washington and Oregon, and Southwest Regional Office in California. Besides aerial and vessel surveys of the lagoons in Mexico (Pérez-Cortés Moreno, 1999), there is an ongoing research project in Scammon's Lagoon (Pérez-Cortés Moreno, 1999).	The stranding networks continue to operate in the U.S. (see http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/stranding_maps_and_contacts.html), Canada (see http://marineanimalresponse.ca/index.php/about-cmara/), and Mexico (see http://www.marinemammalcenter.org/science/crc-marine-stranding-network/mexico.html). Research in the Mexico lagoons continues, and in recent years has included successful opportunities to deploy "disentanglement teams" that have rescued gray whale calves (e.g., Swartz *et al*., 2017; Swartz *et al*., 2018).
6.48) Ship strikes: The number of strikes can be partially recorded through adequate documentation of marks on stranded whales and through ship logs (*e.g.*, Hill, 1999c; Heyning and Dahlheim, in press).	Information on ship strikes is regularly documented by NMFS' stranding network and results reported in the SARs (*e.g.*, Carretta *et al*., 2017a) and associated reports on *Sources of Human-related Injury and Mortality for U.S. Pacific West Coast Marine Mammal Stock Assessments* (e.g., Carretta *et al*. 2017b).
6.5) Research priorities	**Implementation update**
Workshop participants were asked to select the five research projects that they would consider to be of the highest priority in evaluating the status of the Eastern North Pacific stock of gray whales. Preference was given to (in order of priority): 1) survey of the southbound migration at Granite Canyon (Section 6.11); 2) studies in the lagoons (Section 6.214, 6.31, 6.451, 6.453, 6.462, and 6.47); 3) photogrammetry/condition index (Section 6.22, 6.31, and 6.32); 4) calf counts (Section 6.21); and 5) Bering and Chukchi Sea surveys of foraging habitat/regime shifts (Section 6.34).	These research priorities are all being addressed to varying extents (see specific items above).

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Appendix 5: Estimating Gray Whale Travel Times in the Vicinity of the Makah Hunt Area

Regulations proposed for the Makah gray whale hunt specify that, in an even-year hunt (during the winter/spring migration), the Tribe can strike no more than one whale in a **24-hour period**. The impetus for this provision is to prevent the unintended striking of multiple western gray whales (WGWs) during a single hunting expedition, especially in light of recent evidence that at least some WGWs may travel together in a group (Weller *et al.*, 2012). Below we summarize information and calculations used to determine likely travel times for both ENP and WNP gray whales in the Makah hunt area.

Eastern North Pacific (ENP) Gray Whales

A number of researchers have observed that migrating gray whales in the vicinity of the Makah hunt area (Figure 1) travel a roughly north-south track along the coasts of Washington and Vancouver Island (e.g., Wilke and Fiscus, 1961; Pike, 1962; Darling, 1984; Calambokidis *et al.*, 2009). Although there is considerable variability in these sightings, the best available information suggests the following:

- Northbound whales likely migrate within 23 miles (37 km) of shore (averaging 5 to 7 miles [8 to 11 km] offshore) and many whales travel close to shore where their presence can be difficult to detect (Pike, 1962; Green *et al.*, 1992; Green *et al.*, 1995).
- Southbound whales have been reported migrating up to 27 miles (43 km) from shore (averaging 9 to 16 miles [14 to 26 km] offshore), with the possibility that some whales may travel far offshore so as to take a more direct route to and from the central coast of Vancouver Island (Pike, 1962; Green *et al.*, 1992; Green *et al.*, 1995).

In the Draft EIS (NMFS, 2015) we note that most Makah whale hunts would likely occur within 5 miles (8 km) of shore. This nearshore zone aligns with the greatest north-south dimension—33 miles (53 km)—in the Makah hunt area. In their review of the southbound migration of ENP gray whales, Rugh *et al.* (2001) used data from nine radio-tagged whales (Swartz *et al.*, 1987) to estimate the median speed for gray whales at 6.13 km/hr, which equates to 3.8 miles/hr. Therefore, it is reasonable to estimate that migrating ENP gray whales would traverse the Makah hunt area in less than 9 hours (33 miles divided by 3.8 miles/hr equals 8.7 hours).

Western North Pacific (WNP) Gray Whales

To date there have been approximately 30 photo-identification matches of whales seen in both the WNP and ENP (IWC 2015). Two of these involve satellite-tagged WGWs known to have migrated through the Makah U&A (Mate *et al.*, 2015; see Figure 2[9]). In February 2011 the WGW

[9] This research was conducted by A.N. Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences (IEE RAS) and Oregon State University Marine Mammal Institute in collaboration with the U.S. National Marine Fisheries Service, Kronotsky State Nature Biosphere Reserve and the Kamchatka Branch of the Pacific Institute of Geography. The research was contracted through the International Whaling Commission (IWC) and International

'Flex' was tracked heading southbound @ 4.3 mi/hr (6.9 km/hr). In 2012 'Varvara' was tracked heading southbound in January @ 3.4 mi/hr (5.5 km/hr) and northbound in March travelling at @ 4.6 mi/hr (7.4 km/hr) (B. Mate, pers. comm., 2/8/13). Unpublished data obtained from these researchers indicate that both whales likely travelled through the Makah U&A hunt area in about 7 to 8 hours at a distance of 7-25 miles (12-41 km) from shore. These travel time and speed estimates yield track lengths of 28-34 miles (45-55 km), which is similar to the nearshore and largest north-south dimension of the U&A (33 mi; 53 km—see Figure 3). Further evidence that WGWs may follow nearshore tracks in the vicinity of the Makah U&A can be found in Weller *et al.* (2012) who reported on six WGWs—including 'Flex' in 2008—that were sighted very close to the coast of Vancouver Island (see points A-C in Figure 3).

NOTE: Using the tagging data above, an alternative way to estimate a maximum travel time for WGWs through the Makah U&A would be to divide the greatest dimension of the U&A (56 mi; 90 km) by the slowest WGW speed recorded (3.4 mi/hr; 5.5 km/hr). This results in an estimate of 16.5 hours for a whale to traverse the U&A. However, this should be viewed as a very conservative estimate because it is based on a track that is nearly perpendicular to those estimated for Flex and Varvara as well as long-standing observations that gray whales in general travel a north-south track along the coasts of Washington and Vancouver Island (e.g., Wilke and Fiscus, 1961; Pike, 1962; Darling, 1984; Calambokidis *et al.*, 2009). Also, most Makah whale hunts would likely occur within 5 miles (8 km) of shore (NMFS, 2015), further reducing the potential distance and time needed for a whale to traverse the 'likely' hunt area if the animal(s) were to deviate from a north-south track in that narrow nearshore area.

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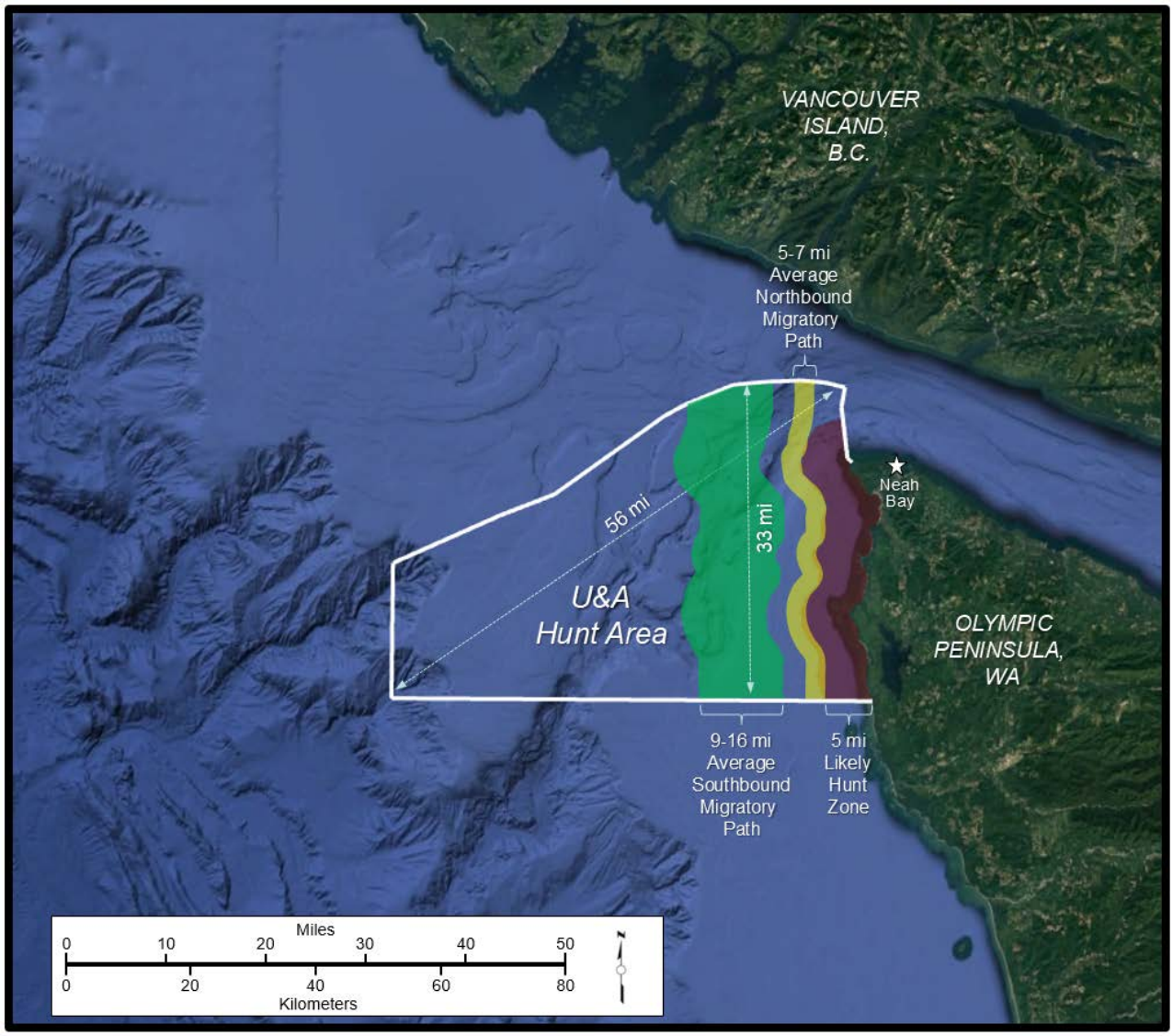


Figure 1. Generalized location of typical north- and south-bound migratory paths for ENP gray whales relative to the Makah U&A hunt area and the likely nearshore hunting zone. See text for full description of documented sightings.

Sources: NMFS (2015).

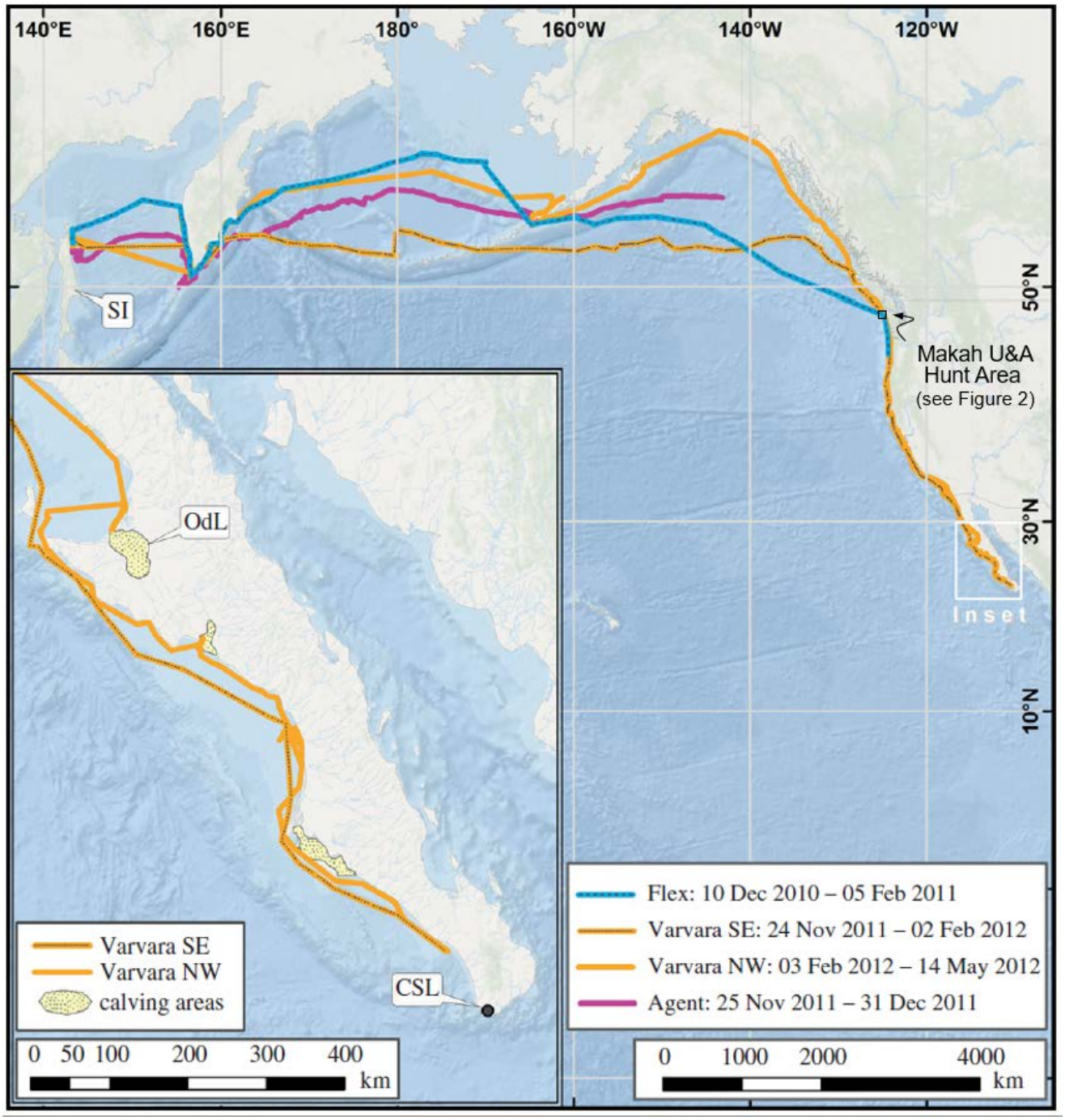


Figure 2. Routes of three western gray whales migrating from Sakhalin Island, Russia, to the eastern North Pacific. The legend depicts departure and arrival/end dates. Varvara visited all three major eastern gray whale reproductive areas off Baja California, Mexico (inset). CSL = Cabo San Lucas; OdL = Ojo de Libre; SI = Sakhalin Island.

Source: Modified from Mate *et al.* (2015).

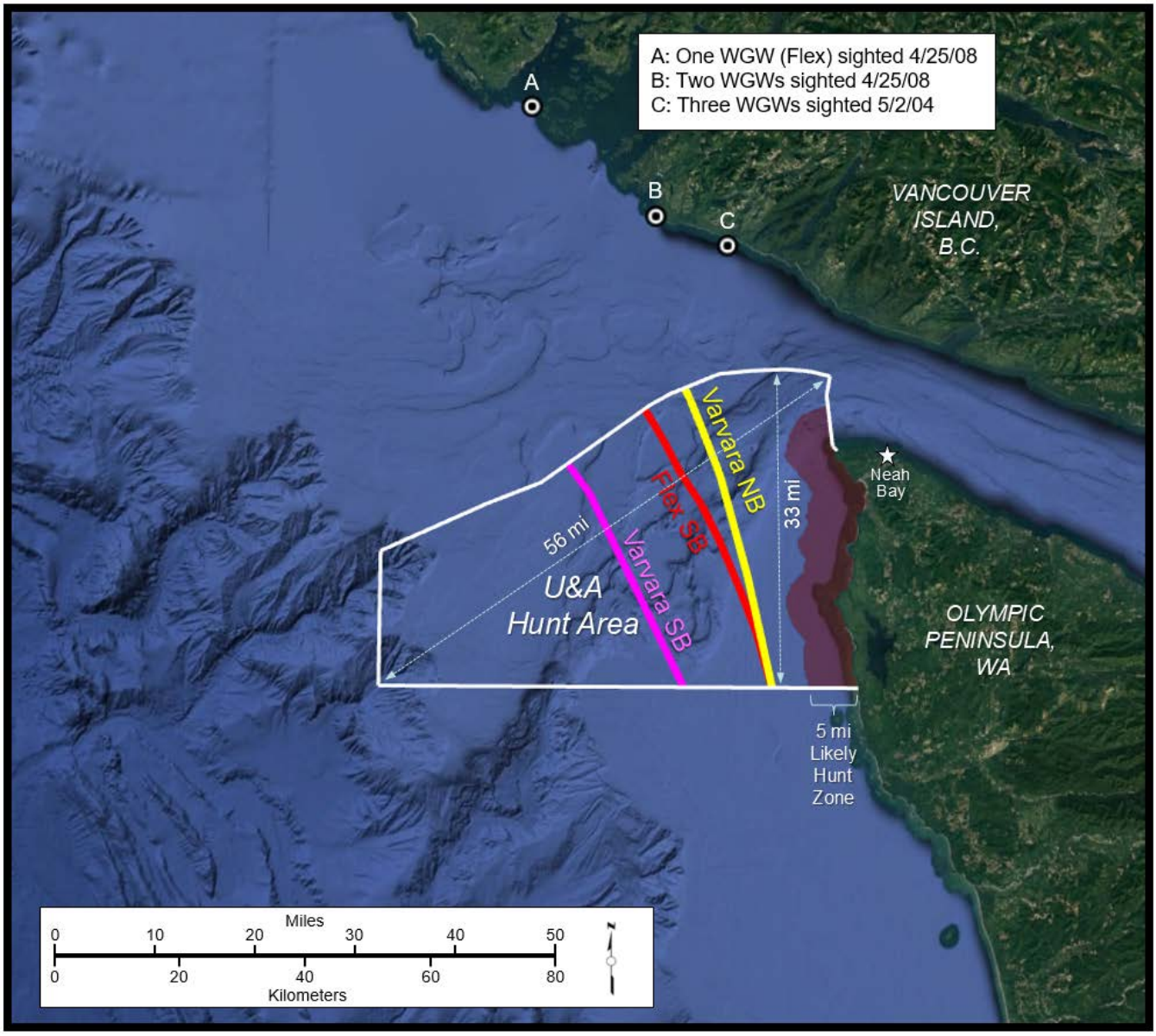


Figure 3. Western gray whale (WGW) sightings relative to the Makah U&A hunt area. Tracks for Flex SB (southbound) and Varvara NB (northbound) are estimated from previous satellite tag locations and trajectories and movements of other gray whales in the area.

Sources: Weller *et al.* (2012); B. Mate, pers. comm. (2013); NMFS (2015).

11 July 2017

Mr. Barry A. Thom
Regional Administrator
West Coast Region
National Marine Fisheries Service
1201 NE Lloyd Boulevard, Suite 1100
Portland, OR 97232

Dear Mr. Thom:

The Marine Mammal Commission (the Commission) is pleased to submit its comments on the proposed waiver determination and draft regulations under the Marine Mammal Protection Act (MMPA). These draft documents were prepared by the National Marine Fisheries Service (NMFS) West Coast Region in response to a request from the Makah Tribe for a limited waiver of the MMPA's moratorium on the taking of marine mammals.

Section 103 of the MMPA sets forth the process for issuing such regulations and directs that decisions on whether to propose waiver regulations are to be made in consultation with the Commission. NMFS has consulted with the Commission informally at various points while developing these regulations and the Commission has commented on the associated NEPA documents. Section 103(d) of the MMPA further requires that NMFS publish before, or concurrent with, proposing such regulations, "any recommendations made by or for the…Marine Mammal Commission which relate to the establishment of such regulations." The intent of this letter is to provide those recommendations.

Our overall impression is that the draft regulations are based on the best available science concerning gray whales and are appropriately precautionary. The Commission also notes that the regulations, to a large extent, address the comments raised in our 31 July 2015 letter to NMFS commenting on the revised draft environmental impact statement, as well as staff-to-staff discussions as the rule was being drafted. The Commission believes that the draft documents lay out a *prima facie* case that the requirements for granting a waiver under the MMPA have been met and recommends that NMFS proceed with issuing a proposed rule and scheduling an administrative hearing in accordance with the requirements of section 103 of the MMPA and sections 554, 556, and 557 of the Administrative Procedure Act.

As noted in previous comments on the Makah Tribe's proposal, the Commission's primary concern has been the need to avoid, to the maximum extent practicable, the accidental taking of gray whales from the endangered Western North Pacific (WNP) stock, and secondarily, to avoid taking that could disadvantage the Pacific Coast Feeding Group (PCFG) regardless of whether it is considered a stock. The design of an odd year/even year hunting pattern is key to both controlling the harvest of PCFG whales and minimizing any take of WNP gray whales. There is some trade-off between the two goals. For example, eliminating the proposed even-year hunt would further reduce the chances of killing WNP whales, but likely would shift more

hunting effort to the season when PCFG whales predominate in the hunting area. The Commission believes that the proposed rule strikes an appropriate balance between the goals of protecting WNP and PCFG whales. Based on the analyses prepared by NMFS, it appears that the risk of killing or seriously injuring a WNP gray whale is sufficiently low that authorizing the Tribe to take whales from the Eastern North Pacific (ENP) stock should not be inconsistent with the ruling in *Kokechik Fishermen's Association* v. *Secretary of Commerce*. Although there is a fairly high likelihood that some WNP whales will be taken by approach during the life of the envisioned regulations, NMFS anticipates that the impact of such taking will be negligible and that such taking can be authorized under other provisions of the MMPA. In addition, the proposed regulations would treat PCFG gray whales as a "putative stock" as a precautionary measure and also seek to avoid "local depletion." Finally, the Commission understands that NMFS intends to address the issue of acceptable hunting methods as part of the permit process, which is a step to be taken only after regulations have been finalized.

The draft proposed rule notes that, although NMFS currently does not recognize the PCFG to be a separate stock, the agency calculates a separate potential biological removal (PBR) level for the group in case it is determined to "warrant consideration" as a distinct stock in the future. By maintaining removals of PCFG whales below their PBR, NMFS expects the PCFG "to maintain its presence in the…feeding area at a level equivalent to a 'theoretical optimum sustainable population (OSP) range' for the group, or to eventually achieve OSP if the PCFG is currently below this level." The Commission believes that this is an acceptable approach for providing additional protection for the PCFG and for avoiding local depletion. However, we question whether keeping removals below PBR would be a sufficient basis to allow the taking of PCFG whales if those whales were determined to constitute a separate stock. As noted in the draft rule, a waiver of the MMPA's moratorium can be issued only for stocks that are not depleted (i.e., that are determined to be within OSP). The Commission therefore recommends that NMFS clarify what the implications would be if the PCFG were recognized as a separate stock. Would hunting be allowed to continue under this rule or would new rulemaking be necessary to consider the status of PCFG whales relative to OSP before the taking of PCFG whales could be authorized?

The draft proposed rule is premised on NMFS and the Tribe being able to distinguish between WNP whales and ENP whales, and to determine which of the ENP whales are from the PCFG. Currently, there are ongoing efforts to identify WNP and PCFG whales individually and to document them in accessible photo catalogs. However, whether those efforts will continue at current levels and whether equally extensive and reliable catalogs of whales will continue to be available in the future are open questions. The Commission recommends that this issue be addressed in the rulemaking, either by including mechanisms to ensure that current efforts are maintained or by making hunting during the specified season contingent on having available and reliable means of distinguishing WNP or PCFG whales (as relevant) from other whales.

In addition to establishing alternating hunting seasons, NMFS is proposing to set various limits on the numbers of approaches, attempted strikes, strikes, and landings. These limits are designed to allow the Makah Tribe to hunt whales and engage in training activities, while keeping the impacts on gray whales at acceptable levels. The Commission has two specific recommendations concerning the proposed limits. First, the Commission believes that

approaches and attempted strikes would have far less severe and more transitory impacts on gray whales than striking or killing. Therefore, although we believe that the proposed limits on striking and landing whales are appropriate and should be retained, the Commission recommends that NMFS review the proposed numbers of takes that would be authorized for approaches and attempted strikes. In particular, NMFS might want to provide separate authorizations for attempted strikes and approaches depending on whether they occur during hunting or training exercises. It would be unfortunate, and perhaps counterproductive to achieving an effective and efficient hunt, to limit the level of training because of the specified caps. Second, the draft proposed rule (see § 216.115(h)) specifies that all approaches, whether for hunting or training purposes, would be prohibited for the remainder of the year once any of the limits on strikes, approaches, unsuccessful strike attempts, struck and lost whales, or landings is reached. As this provision is written, if hunters successfully land a whale early in the year, no training could occur until the following year. The Commission recommends that NMFS revise the provisions of the draft rule to allow training activities to be conducted throughout the year, subject to appropriate limitations, despite one of the take limits for hunting activities (e.g., strikes or landings) having been reached.

The Commission notes that the provisions in the draft rule that specify how whale meat and non-edible products can be used and distributed by Makah Tribe members differ somewhat from similar provisions applicable to Alaska Natives who engage in subsistence whaling. The Commission has no problem with this, if these differences reflect tribal preferences. If it has not already done so, the Commission recommends that NMFS share these portions of the draft rule with the Tribe to determine whether there are any proposed restrictions on the use and distribution of whale products to which the Tribe objects and, if there are, request that the Tribe suggest alternatives for consideration as part of the rulemaking.

The proposed regulations indicate that the hunting season will be closed indefinitely if a WNP gray whale is harvested. We agree that such a closure would be an appropriate immediate response. We also agree that the regulations should allow for reopening the even-year hunting season if steps can be taken to provide reasonable assurance that no further WNP whales would be struck or killed. One possible response is to close the even-year hunt, in which the risk of taking WNP whales is higher, and shift more hunting effort into the odd-year hunt to make up for otherwise lost hunting opportunities. Under the draft rule, shifting effort from one season to another does not seem possible without regulatory amendments, which would take some time to adopt. The Commission therefore recommends that NMFS consider building some flexibility into the regulations to allow a small increase in the numbers of whales that can be struck and landed in odd-year hunts should it become necessary to close the even-year hunt.

One other issue that NMFS should consider is how it would respond to substantive changes that called into question the data or circumstances underlying the rulemaking. For instance, there could be a die-off of gray whales or Canada could authorize a subsistence hunt. While we are not suggesting that NMFS anticipate particular changes or particular responses, the Commission recommends that NMFS address whether there are circumstances that would prompt it to revisit or revise the regulations before the end of their anticipated lifetime.

The Commission appreciates the opportunity to comment on the draft waiver determination and regulations.

Sincerely,

Rebecca J. Lent, Ph.D.,
Executive Director

cc: Ms. Donna Darm, West Coast Regional Office, National Marine Fisheries Service
Mr. Steve Stone, West Coast Regional Office, National Marine Fisheries Service
Ms. Kirsten Erickson, Office of General Counsel, National Oceanic and Atmospheric Administration

NMFS Protocol for Identifying Gray Whales Encountered in Makah Hunts

Updated March 26, 2019

Purpose

The purpose of this document is to describe the process by which NMFS intends to identify gray whales encountered in the course of Makah Tribal hunts and training that may be authorized by regulations set forth in 50 CFR § 216, Subpart J—Taking of Eastern North Pacific (ENP) Gray Whales (*Eschrichitus robustus*) by the Makah Indian Tribe off the Coast of Washington State (hunt regulations). Such identification will involve comparing photographs against regularly updated photographic catalogs to determine if whales encountered during Makah hunts or hunt training can be identified as a member of the western North Pacific stock of gray whales or a member of the Pacific Coast Feeding Group. If available, genetic data from tissue samples will also be used to inform the identification. This document provides non-regulatory guidance that is not intended to be binding on members of the public or the agency.

Background

In 2005, the National Marine Fisheries Service (NMFS) received a request from the Makah Indian Tribe (Tribe) for a limited waiver of the Marine Mammal Protection Act (MMPA) moratorium on take of Eastern North Pacific (ENP) gray whales (*Eschrichtius robustus*). The Tribe requested that NMFS authorize a tribal hunt for ENP whales in the coastal portion of its usual and accustomed fishing area (U&A) for ceremonial and subsistence purposes, and authorize the making and sale of handicrafts. The Makah U&A hunt area is situated along the northwest Washington coast in an area frequented by migrating and feeding gray whales (Figure 1).

Among other provisions, the hunt regulations address the need to identify and account for whales encountered during a Makah hunt and related training, and define the relevant gray whale entities to which they belong, as follows:

- **"Eastern North Pacific"** or **"ENP gray whale"** means a member of the eastern North Pacific stock of gray whales (*Eschrichtius robustus*), as defined in the NMFS stock assessment report prepared pursuant to 16 U.S.C. § 1386.

- **"Pacific Coast Feeding Group"** or **"PCFG whale"** means an individually identifiable ENP gray whale observed in at least 2 years between June 1 and November 30 in the eastern North Pacific between 41° N. lat. and 52° N. lat., excluding areas in Puget Sound, and entered into a photo-identification catalog(s) recognized by the Regional Administrator.

• **"Western North Pacific"** or **"WNP gray whale"** means a member of the western North Pacific stock of gray whales (*Eschrichtius robustus*) as defined in the NMFS stock assessment report prepared pursuant to 16 U.S.C. § 1386 and entered into a photo-identification catalog(s) recognized by the Regional Administrator.

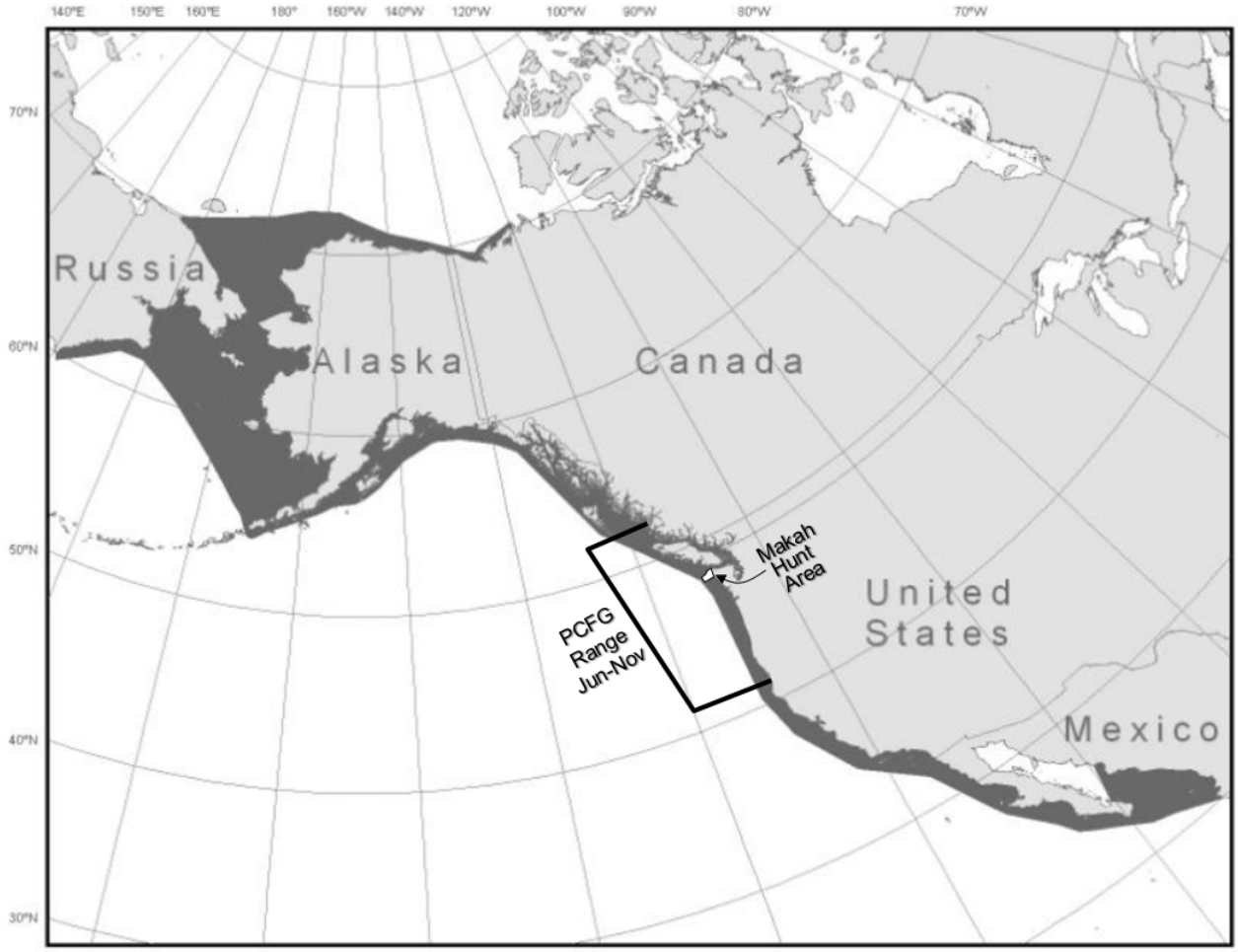
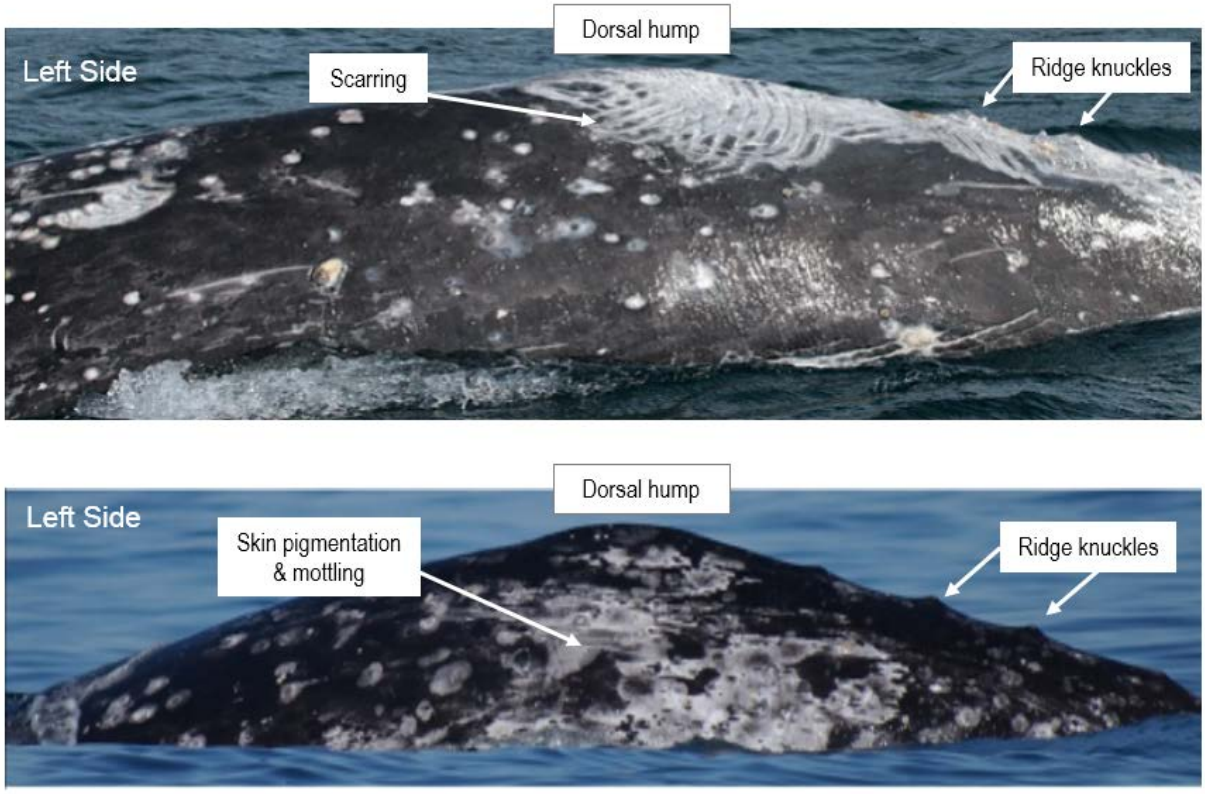


Figure 1. Overall range of ENP gray whales (dark grey) and location of the PCFG summer range and Makah hunt area. See Appendix 1 for locations of photo-identification survey regions.

Since the 1970s, scientists have used photographs to identify and catalog hundreds of individual ENP and WNP gray whales, distinguishable primarily by the shape of their dorsal and lateral area (including spacing between ridge knuckles), scars, and coloration patterns that are visible above the water surface when the whales arch to dive (Calambokidis *et al.*, 2017; *see* Figure 2). Markings can be long lasting, allowing researchers to identify specific animals for 20 years or more (Darling, 1984; Calambokidis *et al.*, 1994; Weller *et al.*, 1999; 2012). Photographs are usually taken with a digital camera during small boat surveys, with researchers slowly approaching to within 5-15 m of whales and following them through several dive sequences until suitable photographs can be obtained. Researchers usually try to photograph both left and right sides of the animal around the dorsal hump, and may also photograph the ventral surface of the flukes as an additional identifying feature.

Figure 2. Characteristics used for gray whale photo-identification.



Gray Whale Photo-identification Catalogs

The proposed regulations include provisions for identifying the entity to which an individual whale belongs by comparing photographs taken in the course of hunting and hunt training[1] to photo-identification catalogs of WNP and PCFG gray whales with "unique IDs" (i.e., identifiable

[1] In this document the term "photograph" refers to a digital still-image picture taken with a camera, including such images/pictures obtained from a motion-picture video. Hard-copy photos may also be used if scanned and converted to digital format.

individual whales assigned a unique code in the catalog). Table 1 summarizes the photographic catalogs that are currently used by scientists to identify such whales. We expect that catalogs for both WNP and PCFG whales will be available for review by experts at the Cascadia Research Collective so that they can provide NMFS with timely photo-comparisons consistent with the protocols described below (see Protocols Specific to Regulatory Provisions—*§ 216.113 Take Authorizations*).

Gray Whale Tissue Samples

Although photographs will be the primary basis for making identifications of hunted whales, genetic data from tissue samples may also be useful in making identifications because some photo-cataloged gray whales also have been genetically identified (e.g., haplotype, genotype, and sex information) via biopsies taken during research surveys (*see* Lang *et al.*, 2011). Tissue samples from a landed whale, or a struck and lost whale if there is remnant tissue on a harpoon, may be used to help identify the animal by determining whether the animal is a genetic match (i.e., has an identical genetic profile) to a known animal. In most cases we expect such tissue samples to corroborate photographic evidence for a particular animal, however there may be rare cases where a landed or struck-and-lost animal did not yield suitable photographs but is identifiable based on tissue samples alone.

Table 1. Photo-identification catalogs currently in use for WNP and PCFG gray whales.

WNP Catalogs	PCFG Catalogs
The International Whaling Commission (IWC) is currently facilitating the development of a unified WNP catalog and related database to be held under the auspices of the IWC (IWC, 2017). That effort involves consolidating and cross-checking photographs and information from the following catalogs (as well as gaining permissions from industry to use their catalog/data): *1. Western North Pacific Catalog I*—This catalog is often referred to as the U.S.-Russia catalog (now called the Russian Gray Whale Project) curated by the Kamchatka Branch of Pacific Institute of Geography, Russian Academy of Sciences, Far East Division. This catalog currently contains over 260 unique IDs collected off Sakhalin Island, Russia, during 1994-2016. *2. Western North Pacific Catalog II*—This catalog is curated by the Institute of Marine Biology (IBM), Vladivostok, Russia. It currently contains over 270 unique IDs collected off Sakhalin Island, Russia, during 2002-2016. Substantial overlap of whales in this catalog and the Russia-U.S. catalog exists. About 25-30 whales appear in only one catalog or the other. The IBM catalog is a product of industry funded research (Exxon Neftegas Limited and Sakhalin Energy/Shell). *3. Kamchatka Catalog*—Also curated by IBM, the catalog currently contains over 160 whales identified off Kamchatka (Russia), over half of which are also in the Sakhalin Island catalog (*Western North Pacific Catalog II*). <u>Photo-identification expert(s)</u>: Currently three persons—O. Sychenko (*see* Gailey *et al.*, 2011), O. Tyurneva (*see* Tyurneva *et al.*, 2010) and A. Perez (*see* Calambokidis *et al.*, 2017) are capable of performing identifications and comparisons with these catalogs.	*Pacific Northwest Catalog (Cascadia catalog)*—This is the catalog curated by the Cascadia Research Collective in Olympia, Washington. It contains whale identifications, contributed by numerous research groups, from Northern California to Kodiak, Alaska. The catalog currently spans 1996-2015 (Calambokidis *et al.*, 2017) and contains an estimated 1,638 unique IDs of which 793 were sighted in the PCFG seasonal range (consisting of nine survey regions—*see* Appendix 1). Of these 793 whales, 750 were sighted prior to 2015 and therefore had the opportunity to meet the PCFG definition of being sighted in two or more years. Of these, 362 whales currently meet that 2-years+ definition. In 2013 the IWC Scientific Committee recommended that the Cascadia catalog be made publicly available (IWC, 2013), but that has yet to occur. The NMFS Marine Mammal Laboratory (MML) manages agency contracts (approximately $70,000/year over the past 20 years) with the research groups that provide photographs for the Cascadia Catalog. The MML also maintains a collection of photographs (including PCFG whales) that includes a subset of those in the Cascadia catalog. In addition, the NMFS Southwest Fisheries Science Center has a collection of 131 gray whale photos obtained in the summer/fall of 2015 and made available to the public (Weller *et al.*, 2017). <u>Photo-identification expert(s)</u>: Currently one person (A. Perez; *see* Calambokidis *et al.*, 2017) performs all identifications and comparisons with the Cascadia catalog.

Protocols

The regulations contain provisions related to identifying gray whales encountered in a Makah hunt and related hunt training (*see* next section). The following protocols address how NMFS will ensure the integrity of the identification process.

1. Prior to issuing an initial hunt permit, NMFS will consult with Cascadia Research Collective, the Makah tribal hunt observer, and other scientists as needed to assess the state of the art of photographic techniques and technology and determine how to obtain the highest quality photo-identification data during a hunt, including but not limited to specific camera and lens types, image formats, image adjustments/standardization, and metadata requirements. An example of such an assessment has been prepared by the NMFS Marine Mammal Laboratory (MML) (Mizroch, 2007; available at https://www.afsc.noaa.gov/nmml/pdf/NMMLDigitalPhotoProtocol.pdf), and a recent NMFS report by Weller *et al.* (2017) describe the steps taken to obtain and catalog gray whale photographs. This assessment will also review the best available techniques for collecting and preserving tissue samples that might be obtained during a Makah hunt.
2. NMFS will establish an agency team responsible for managing hunt-related information and records, including but not limited to:
    a. Photographs and tissue samples, including verifying the authenticity of the information and coordinating the distribution and the review of such information.
    b. Contracts and agreements, especially those needed to maintain and update high quality photo-identification catalogs.
    c. Permits, notifications, and reports as described in the hunt regulations and in coordination with the Regional Administrator for the West Coast Region (RA).
3. During the 10-year waiver period, NMFS intends to continue funding—subject to available authorizations and appropriations—data collection surveys throughout the PCFG range as well as procure photo-identification services (cataloging and matching) from the Cascadia Research Collective (Cascadia) or other expert group, if necessary. To date that funding has averaged approximately $70,000 per year over the past 20 years. As part of that effort, NMFS would establish a contractual agreement with Cascadia to perform timely review and matching of hunt-related photographs with those in their Pacific Northwest Catalog of gray whales (Cascadia catalog) as well as any common, shared WNP catalog developed in partnership with the IWC and the Russian Federation (IWC, 2018). NMFS has a long history of working effectively and collaboratively with Cascadia. Cascadia has confirmed that in the majority of cases it should take approximately 24 hours or less to complete a photo-comparison with the Cascadia catalog (J. Calambokidis, Cascadia Research Collective, pers. comm. with S. Stone, NMFS, January 23, 2017). As with the PCFG catalog, Cascadia and curators of the WNP catalogs are able to rapidly compare newly obtained photographs of whales with existing photographs in the WNP catalogs in an effort to find individual matches (J.

Calambokidis, Cascadia Research Collective, and D. Weller, NMFS, pers. comm. With S. Stone, NMFS, March 8, 2019).

4. NMFS will continue to work with the Makah Tribe, Cascadia, the IWC, the Russian Federation, Canada, and other relevant partners to obtain the fullest access to all known photo-identification catalogs and resources and to make such catalogs available to the public.
5. NMFS would continue to provide funding—subject to available authorizations and appropriations—to secure the assistance of agency staff and external partners to keep existing catalog resources up to date. This is particularly important for the Cascadia catalog, since a whale's status may change from non-PCFG to PCFG based on a single year of additional data (i.e., a whale previously seen only once within the PCFG boundary and season is seen a second time). NMFS will also evaluate the possibility of training additional persons to perform photo-identification of WNP and PCFG gray whales and using computer-assisted technologies for photo-identification.
6. Consistent with the hunt regulations at 50 CFR 216.117(b)(1), NMFS will monitor and evaluate the status of gray whale photo-identification catalogs used to manage the Makah gray whale hunt, the survey efforts employed to keep those catalogs updated, the level of certainty associated with identifying cataloged WNP gray whales and PCFG whales, the role of ancillary information such as genetic data during catalog review, and any other elements deemed appropriate. Resultant evaluation(s) will be made available to the public.
7. NMFS will work with the Makah Tribe to ensure it is advised of, and consulted on, the personnel, procedures, and partners involved in the execution of this protocol.
8. NMFS will provide requisite information to the IWC (consistent with current U.S. practice for Alaska Eskimo bowhead hunts; Suydam *et al.*, 2017) regarding gray whales struck in Makah Tribal hunts. NMFS will also continue to pursue the IWC's recommendation that hunt-related catalogs be made publicly available (IWC, 2013 and 2018).

Protocols Specific to Regulatory Provisions

Regulation	Protocol
§ 216.112 Definitions	
(s) "Pacific Coast Feeding Group (PCFG) gray whale" or "PCFG whale" means an individually identifiable ENP gray whale observed in at least 2 years between June 1 and November 30 in the eastern North Pacific between 41° N. lat. and 52° N. lat., excluding areas in Puget Sound, and **entered into a photo-identification catalog(s) recognized by the Regional Administrator.**	1. The PCFG catalog will be "recognized by the RA" as adequate (per § 216.113(a)(7)(iv)) for implementing these regulations if the catalog is based on the unique IDs contained in the most up-to-date Cascadia catalog (currently Calambokidis *et al.*, 2017), if all of the following conditions apply: a. Photo-identification surveys, when undertaken, are conducted in a manner consistent with the approach and area definitions used during 1996-2015 (Calambokidis *et al.*, 2017), with special emphasis during the months of April-November when PCFG animals would be expected to comprise a high proportion of whales encountered. b. Photographs taken during photo-identification surveys are processed and cataloged in a timely fashion such that they can be relied upon for hunt-related comparisons no later than 12 months after being taken. c. The RA, after consulting with the catalog curator, finds that the PCFG catalog can be relied upon to make photo-identification comparisons. 2. The RA will consult with the curators of recognized catalogs and the NMFS Southwest Fisheries Science Center and MML prior to recognizing any additional catalogs.
(u) "Recordkeeping" and "reporting" mean **the collection and delivery of photographs, biological data,** harvest data, and other information regarding activities conducted under the authority of these regulations.	See protocol for *§216.117* below.
(hh) "WNP gray whale" means a member of the western North Pacific stock of gray whales (*Eschrichtius robustus*) as defined in the NMFS stock assessment report and **entered**	1. The WNP catalog(s) will be "recognized by the RA" as adequate (per § 216.113(a)(7)(iv)) for implementing these regulations if it is based on the unique IDs contained in the most up-to-date WNP catalogs (including associated genetic data) identified in Table 1 above, if both of the following conditions apply:

into a photo-identification catalog(s) recognized by the Regional Administrator.	a. Photographs taken during photo-identification surveys are processed and cataloged in a timely fashion such that they can be relied upon for hunt-related comparisons no later than 12 months after being taken. b. The RA, after consulting with the catalog curator(s), finds that the WNP catalog(s) can be relied upon to make photo-comparisons. 2. The RA will consult with the IWC, and Cascadia Research Collective and the NMFS Southwest Fisheries Science Center and MML prior to recognizing any additional catalogs.
§ 216.113 Take Authorizations.	
(a)(7) *Required determinations*. Before issuing a hunt permit the Regional Administrator must make the following determinations:… (iv) **There are adequate photo-identification catalogs and processes available to allow the identification of WNP gray whales and PCFG whales** as described in § 216.114(b);	In addition to the catalog-related protocols described for *§ 216.112 (s)* and *(hh)* above, the process for identifying gray whales will be considered adequate by the RA if person(s) with demonstrated expertise (as determined by the RA in consultation with relevant curators and NMFS scientists) is/are available to determine if hunt-related whale photos are a match with animals in photo-identification catalogs. Cascadia has notified NMFS that in the majority of cases it should take approximately 24 hours for its staff to complete a photo-comparison with the Cascadia catalog (J. Calambokidis, Cascadia Research Collective, pers. comm. with S. Stone, NMFS, January 23, 2017). The IWC is working to develop a common, shared WNP catalog (IWC, 2018). We expect that Cascadia would have access to that catalog and, based on discussions during the development of this protocol document, could complete a photo-comparison in approximately the same time as estimated for the Cascadia catalog.
§ 216.114 Accounting and identification of gray whales.	
(b)(1) *Even-year hunts*. **Based on available evidence**, the Regional Administrator will determine whether a gray whale that is subjected to a hunting approach, struck and lost, or struck and landed in an even-year hunt is a WNP gray whale, a PCFG whale, or cannot be identified as either. A whale affirmatively identified as a PCFG whale will be counted accordingly. A whale that is struck	1. "Available evidence" includes the photo-identification catalogs (and any associated genetic data) specified per *§§ 216.112 (s)* and *(hh)* above, and either of the following: a. A photograph(s) or tissue sample obtained by either a tribal hunt observer or a NMFS hunt observer of the whale(s) approached, struck and lost, or struck and landed; b. A photograph(s) submitted by any person to the RA so long as the RA: i. determines that it is a bona fide photograph(s) depicting the whale(s) subjected to the specific hunt-related approach or strike on the date and at the location recorded by tribal or NMFS hunt observers; and ii. determines that the photograph(s) is useful for identifying the whale(s) subjected to the

and lost and cannot be identified will be presumed to be a PCFG whale in accordance with the proportions specified in § 216.114(a)(2) and will be counted accordingly. The Regional Administrator will notify the Makah Indian Tribe of this determination in writing.	hunt-related approach or strike. 2. The RA may change his or her initial determination based on additional evidence. The RA will notify the Makah Tribe of any new determination in writing.
(b)(2) *Odd-year hunts*. **Based on available evidence**, the Regional Administrator will determine whether a gray whale that is subjected to a hunting approach, struck and lost, or struck and landed in an odd-year hunt is a WNP gray whale or cannot be identified as such. A gray whale that cannot be identified as a WNP gray whale will be counted as a PCFG whale. The Regional Administrator will notify the Makah Indian Tribe of this determination in writing.	Same as above, except noting that a whale that cannot be matched to either the WNP catalog or the PCFG catalog will still be counted as a PCFG whale for accounting purposes in accordance with *§ 216.114* of the hunt regulations.
§ 216.117 Requirements for monitoring, reporting, and recordkeeping.	
(a)(6)(ii) *Incident report.* After striking a gray whale, the Makah Indian Tribe must submit an incident report within 48 hours to NMFS. A report may address multiple gray whales so long as the Tribe submits the report within 48 hours of the first gray whale being struck…	
A. <u>Struck and lost gray whale(s)</u>:… The report will include all **photographs** taken by a tribal hunt observer of gray whales struck and lost by the whaling crew. The report may also contain any other observations by the Makah Indian Tribe concerning the struck and lost whale(s) or circumstances of the hunt.	1. The tribal hunt observer will employ a digital camera with a telephoto lens to take photographs which will be submitted, along with the report, electronically to NMFS. 2. It is expected that the tribal hunt observer will make every effort to obtain one or more photographs of each whale approached (per requirements of § 216.117(a)(1)). However, depending on hunting conditions and events (e.g., sea conditions, the observer's proximity to the struck whale, whale's behavior, etc.), it is possible that photographs cannot be obtained or are not suitable for comparison to the photo-identification catalogs. In such cases, accounting will follow in accordance with *§ 216.114* of the hunt regulations.

B. Struck and landed gray whale(s):… **photographs** of the whale(s), including the entire dorsal right side, the entire dorsal left side, the dorsal aspect of the fluke, and the ventral aspect of the fluke. All such **photographs** must include a ruler to convey scale and a sign specifying the Makah Indian Tribe's name, whaling captain's name, whale species, and date.	Prior to butchering the landed whale, it is expected that all landed whales will have specimen samples collected and the requisite photographs taken by the tribal hunt observer using a digital camera. The report and all photographs should be submitted electronically to NMFS.
(a)(6)(iii) *Hunt report*. Within 30 days after the end of each hunting season the Makah Indian Tribe must submit a report to NMFS that describes the following information for each day of hunting:	
A. Struck and lost gray whale(s): the report must contain the information specified in § 216.117(a)(6)(ii)(A).	See protocol for struck and lost gray whales at *§ 216.117(a)(6)(ii)(A)* above.
B. Struck and landed gray whale(s): the report must contain the information specified in § 216.117(a)(6)(ii)(B).	See protocol for struck and landed gray whales at *§ 216.117(a)(6)(ii)(B)* above.
C. Hunting approaches and unsuccessful strike attempt(s):…all **photographs** taken by a tribal hunt observer of gray whales approached by the whaling crew.	The protocol for struck and lost gray whales at *§ 216.117(a)(6)(ii)(A)* also applies to whales subjected to hunting approaches and unsuccessful strike attempts. Although training harpoon throws also count as unsuccessful strike attempts, they are not subject to photo-identification requirements and are to be documented in a separate annual approach report described in the regulations.
(b) Upon receiving an incident report specified in § 216.117(a)(6)(ii) documenting that 8 gray whales have been struck, the Regional Administrator will evaluate:	
(1) The photo-identification and notification requirements described in § 216.113(a)(7)(iv) and § 216.114. The evaluation will address the status of gray whale **photo-identification catalogs** used to manage gray whale hunts	The RA will task the NMFS West Coast Region's Protected Resources Division with coordinating and completing a report that addresses this provision. The public will be able to access the final report via the agency's NMFS West Coast Region website.

authorized under this subpart, the survey efforts employed to keep those catalogs updated, the level of certainty associated with identifying **cataloged** WNP gray whales and PCFG whales, the role of ancillary information such as genetic data during **catalog** review, and any other elements deemed appropriate by the Regional Administrator. The evaluation will be made available to the public no more than 120 days after receiving the subject incident report.	

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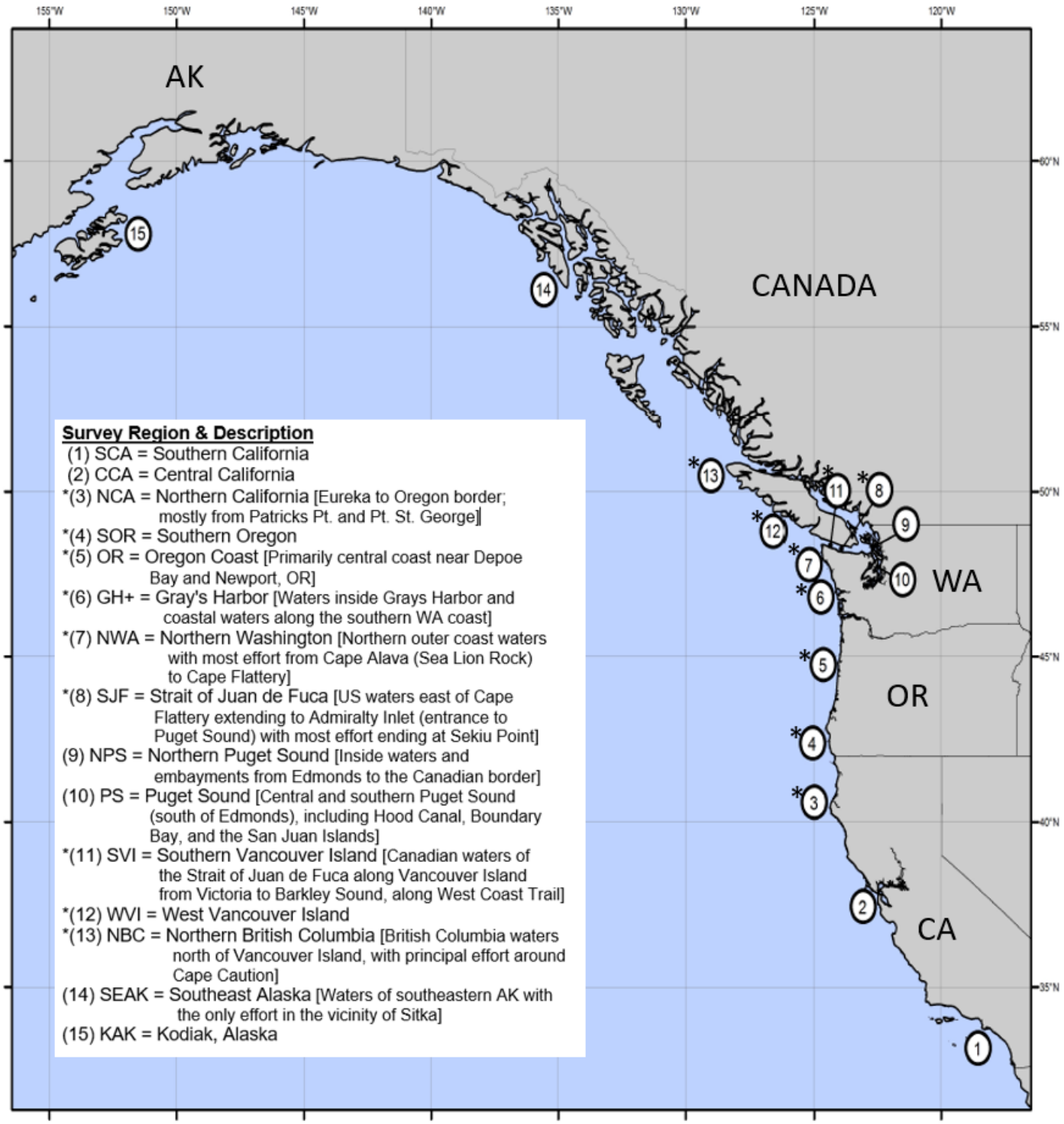
Personal Communications

J. Calambokidis, Cascadia Research Collective, and D. Weller, NMFS, personal communication, 2017. January 23, 2017, e-mail from J. Calambokidis (CRC) to S. Stone (NMFS) titled “RE: Estimating the Time Needed to Compare Gray Whale Photos Against the PCFG Catalog.”

J. Calambokidis, Cascadia Research Collective, and D. Weller, NMFS, personal communication, 2019. March 8, 2019, e-mail exchange between J. Calambokidis (CRC), Dave Weller (NMFS) and S. Stone (NMFS) titled “RE: Estimating the Time to Check for WNP Gray Whale matches.”

Appendix 1. Photo-identification survey regions for ENP gray whales (amended from Calambokidis *et al.*, 2017). PCFG survey regions are denoted with an asterisk.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1201 NE Lloyd Boulevard, Suite 1100
Portland, OR 97232

May 12, 2017

Dr. Rebecca Lent
Executive Director
Marine Mammal Commission
4340 East-West Highway, Room 700
Bethesda, MD 20814-4498

Dear Dr. Lent:

As you know, NOAA's National Marine Fisheries Service (NMFS), West Coast Region, has been reviewing the Makah Tribe's request for a limited waiver of the Marine Mammal Protection Act (MMPA) take moratorium so they may hunt for Eastern North Pacific gray whales. Section 101(a)(3)(A) and Section 103(a) of the MMPA require that any proposed waiver and associated regulations be made in consultation with the Marine Mammal Commission (Commission).

With this letter, NMFS formally requests consultation with the Commission on our proposed waiver determination and regulations, contained in the enclosed draft *Federal Register* notice. Section 103(d)(4) states that if we initiate rulemaking procedures to waive the moratorium, we must make available to the public "any studies made by or for . . . the Marine Mammal Commission which relate to the establishment of such regulations." I would appreciate receiving the Commission's comments on our proposed determination and regulations by July 10, 2017. My staff will then summarize those comments in the *Federal Register* notice prior to publication.

If you have any questions, please contact Steve Stone of my staff at steve.stone@noaa.gov or by phone at 503-231-2317.

Sincerely,

Barry A. Thom
Regional Administrator

enc

Billing Code: 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 216

[Docket No. xxxxxx]

RIN XXXX-XXXX

Regulations Governing the Taking of Marine Mammals

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; notice of hearing.

SUMMARY: On February 14, 2005, the National Marine Fisheries Service (NMFS) received a request from the Makah Indian Tribe for a limited waiver of the Marine Mammal Protection Act (MMPA) moratorium on take of Eastern North Pacific (ENP) gray whales (*Eschrichtius robustus*). The Tribe requested that NMFS authorize a tribal hunt in the coastal portion of the Tribe's usual and accustomed fishing area (U&A) for ceremonial and subsistence purposes, and authorize the making and sale of handicrafts. The MMPA imposes a general moratorium on the taking of marine mammals but authorizes the Secretary of Commerce to waive the moratorium and issue regulations governing the take of marine mammals if certain statutory criteria are met. The decision to waive the moratorium and issue regulations must be made on the record after an opportunity for an agency hearing on both the waiver and regulations. The hearing is governed by agency regulations, which call for the appointment of an administrative law judge and prescribe other procedures (50 CFR 228). This notice announces the proposed waiver and regulations and the commencement of such a hearing. On March 13, 2015, NMFS released a Draft Environmental Impact Statement (DEIS) analyzing the impacts on the human environment of the Tribe's proposed hunt and five alternatives, including a no-action alternative.

DATES: NMFS has scheduled a formal hearing before Administrative Law Judge [NAME] to consider the issuance of a limited waiver of the take moratorium and the

regulations. It will begin at [TIME AND DATE] in [LOCATION]. A pre-hearing conference is scheduled at [TIME AND DATE].

Filing deadlines

By [DATE], any interested person desiring to participate as a party must file an initial notice of intent to participate in the hearing, and submit any direct testimony and any documentary evidence. By [DATE], any rebuttal testimony and documentary evidence must be filed. Interested parties should consult procedural regulations at 50 CFR part 228 (65 FR 39560, June 27, 2000) for additional deadlines and hearing procedures.

ADDRESSES: All filings associated with the hearing, including those of NMFS, become part of the record. All original filings and written comments should be sent to: [Add name and address of ALJ].

Also, the record for the proposed rule and the DEIS is available at the following NMFS offices:

(1) NMFS, West Coast Region, Protected Resources Division

7600 Sand Point Way Northeast

Seattle, WA 98115

(2) NMFS, West Coast Region, Protected Resources Division

1201 NE Lloyd Boulevard, Suite 1100

Portland, OR 97232

Information related to the hearing and the DEIS will be available on the NMFS, West Coast Region website at: *http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/cetaceans/whale_hunt.html.*

FOR FURTHER INFORMATION CONTACT: Steve Stone, Protected Resources Division, NMFS West Coast Region, 1201 NE Lloyd Blvd., Suite 1100, Portland, OR 97232-1274; 503-231-2317.

SUPPLEMENTARY INFORMATION

The following table of contents is intended as an aid to readers:

I. List of Acronyms

CFR	Code of Federal Regulations
DEIS	Draft Environmental Impact Statement
ENP	Eastern North Pacific
ESA	Endangered Species Act
ICRW	International Convention for the Regulation of Whaling
K	Carrying Capacity

MMC	Marine Mammal Commission
MMPA	Marine Mammal Protection Act
MNPL	Maximum Net Productivity Level
MtDNA	Mitochondrial Deoxyribonucleic Acid
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
OSP	Optimum Sustainable Population
PBR	Potential Biological Removal
PCFG	Pacific Coast Feeding Group
PRA	Paperwork Reduction Act
RFA	Regulatory Flexibility Act
SAR	Stock Assessment Report
U&A	Usual and Accustomed (Fishing Area of the Makah Tribe)
U.S.C.	United States Code
WCA	Whaling Convention Act
WNP	Western North Pacific

II. Background

Whaling is governed by both international and domestic law. On February 14, 2005, the Makah Indian Tribe, pursuant to its express treaty right to hunt whales as defined in the 1855 Treaty of Neah Bay and consistent with international authorization pursuant to the International Convention for the Regulation of Whaling (ICRW), submitted a request seeking domestic authorization under the MMPA for a whale hunt. The Tribe requested a limited waiver of the MMPA take moratorium to authorize a tribal hunt for ENP gray whales in the coastal portion of the Tribe's U&A in northwest Washington State for ceremonial and subsistence purposes, and to allow the making and sale of handicrafts. The Tribe's request was subsequent to a 2004 Ninth Circuit Court of Appeals decision holding that the Tribe must obtain a waiver of the MMPA take moratorium (*Anderson* v. *Evans*, 371 F.3d 475 (9th Cir. 2004)(*Anderson*) in order to pursue whaling.

Consistent with the *Anderson* court's decision, the Tribe submitted its 2005 request to Dr. William Hogarth, the Assistant Administrator of NMFS at the time. Dr. Hogarth delegated authority to the Northwest Region (now the West Coast Region) of NMFS to complete an analysis under the National Environmental Policy Act (NEPA) and make the initial waiver determination under the MMPA. On May 9, 2007, we, the West Coast Region of NMFS, released a DEIS. We later terminated that DEIS because of new scientific information, published a notice of intent to prepare a new DEIS, and opened a scoping process (77 FR 29967, May 21, 2012). On March 13, 2015, we released a new DEIS (80 FR 13373). The Tribe's application is included as an attachment to the DEIS. The present Notice represents our initial waiver determination and proposed regulations governing Makah tribal hunts of ENP gray whales and is based on the detailed information found in the 2015 DEIS and public comments on the DEIS, and developed during our review of the Tribe's application.

A. MMPA Provisions Relevant to a Waiver Determination

The primary objective of marine resource management under the MMPA is to maintain the health and stability of the marine ecosystem (16 U.S.C. §1361). The MMPA states that species and population stocks should not be permitted to diminish beyond the point at which they cease to be a significant functioning element of the ecosystem, and they should not be permitted to diminish below their optimum sustainable population (OSP). The MMPA defines OSP as "the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem in which they form a constituent element." NMFS regulations further define OSP as: "[A] population size which falls within a range from the population level of a given species or stock which is the largest supportable within the ecosystem [known in biological terms as carrying capacity, abbreviated as K] to the population level that results in maximum net productivity [known as the maximum net productivity level, or MNPL]." (50 CFR 216.3).

The MMPA defines the term "population stock" or "stock" to mean "a group of marine mammals of the same species or smaller taxa in a common spatial arrangement, that interbreed when mature." NMFS' stock assessment guidance (NMFS, 2005; NMFS, 2016) includes guidelines for determining what constitutes a "stock" for MMPA

management purposes. Those guidelines direct the agency to use demographic independence to identify stocks and they provide a number of factors to evaluate in identifying demographic independence. Where stocks are demographically independent, "separate management is appropriate." Demographic independence means that the population dynamics of the affected group are more a consequence of births and deaths within the group . . . rather than immigration or emigration (NMFS, 2016). The guidelines state that stock identification should be consistent with the objective of section 2 of the MMPA (16 U.S.C. §1361) that marine mammals remain a functioning element of their ecosystem.

Section 117(a) of the MMPA requires NMFS, in consultation with regional scientific review groups, to prepare a stock assessment report (SAR) for each marine mammal stock occurring in waters under U.S. jurisdiction (16 U.S.C. §1386(a)). The SAR is to, among other things, describe the stock's geographic range, estimate its minimum abundance and productivity, estimate human-caused mortality, and estimate the potential biological removal (PBR) for the stock. Section 3(20) of the MMPA defines PBR as the "maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population" (16 U.S.C. §1362(20)). The definition also prescribes a formula for calculating PBR. The SARs are reviewed by regional scientific review groups and made available for public comment and review. The Marine Mammal Commission routinely reviews and comments on the SARs during the public comment period (Carretta et al., 2015; 80 FR 50599, August 20, 2015).

To achieve the general purposes and policies of section 2 of the MMPA (16 U.S.C. §1361), among other measures, Congress established a moratorium on the taking and importing of marine mammals in section 101(a) (16 U.S.C. §1371(a)). Under section 3(13) of the MMPA, 'take' means to "harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal" (16 U.S.C. §1362(13)). This moratorium is not absolute. Statutory exceptions allow NMFS to issue direct take permits for scientific or educational purposes (section 101(a)(3)(b); 16 U.S.C. §1371(a)(3)(B)) and permits for specified activities other than commercial fishing when the take is incidental but not intentional (section 101(a)(5); 16 U.S.C. §1371(a)(5)). Other exceptions allow take

resulting from non-lethal actions to deter marine mammals from damaging gear or catch (section 101(a)(4); 16 U.S.C. §1371(a)(4)); take incidental to commercial fishing (section 101(a)(5); 16 U.S.C. §1371(a)(5)); take in defense of self or others (section 101(c); 16 U.S.C. §1371(c)); and take necessary to avoid injury or death to entangled marine mammals (section 101(d); 16 U.S.C. §1371(d)). Statutory exemptions allow take of marine mammals by Alaskan Natives for subsistence purposes or to create and sell authentic native articles of handicraft and clothing (section 101(b); 16 U.S.C. §1371(b)) and take necessary for national defense (section 101(f); 16 U.S.C. §1371(f)).

The MMPA also authorizes the agency to waive the take moratorium from time to time (16 U.S.C. §1371(a)(3)(A)), adopt suitable regulations governing that take (16 U.S.C. §1373), and issue permits authorizing take (16 U.S.C. §1374), if certain statutory criteria are met. The Makah Tribe has requested that NMFS waive the take moratorium and issue regulations allowing a tribal hunt for ENP gray whales. If a waiver is granted and regulations are promulgated the Tribe must also separately seek an MMPA permit to implement a hunt (16 U.S.C. §1374).

Section 101(a)(3)(A) (16 U.S.C. §1371(a)) authorizes and directs the Secretary of Commerce "from time to time" to "determine when, to what extent, if at all, and by what means, it is compatible" with the MMPA "to waive the Section 101(a) take moratorium." The Tribe has requested that NMFS waive the moratorium only with respect to the ENP gray whale stock and with certain limitations. Pursuant to section 101(a)(3)(A), any decision to waive the MMPA take moratorium must:

1. Be based on the best scientific evidence available;
2. Be made in consultation with the Marine Mammal Commission (MMC);
3. Have due regard to the distribution, abundance, breeding habits, and times and lines of migratory movements of the marine mammal stock potentially subject to take; and
4. Be supported by a finding that the taking is in accord with sound principles of resource protection and conservation as provided in the purposes and policies of the MMPA (which include maintaining marine mammals as "a significant functioning element in the ecosystem of which they are a part," "maintain[ing] the health and stability of the marine ecosystem," and "obtain[ing] an optimum

sustainable population keeping in mind the carrying capacity of the habitat").

Section 103(a) authorizes the Secretary to prescribe such regulations with respect to the taking or importing of marine mammals as he or she "deems necessary and appropriate to insure that such taking will not be to the disadvantage of" the species or stock and "will be consistent with the purposes and policies [of the MMPA in section 2]" (16 U.S.C. §1373(a)). Court decisions have interpreted "disadvantage" in relation to the impact of take on the stock's OSP (*Committee for Humane Legislation* v. *Richardson*, 540 F.2d 1141 (1976); *Kokechik* v. *Secretary of Commerce*, 839 F.2d 795 (1988)). Section 101(a)(3)(B) prohibits a waiver for a stock that is designated by the Secretary as "depleted" (16 U.S.C. §1371(a)(3)(B)). Section 3(1)(A) defines depleted as being below OSP (16 U.S.C. §1362(3)(1)(A)).

Section 103(b) (16 U.S.C. §1373(b)) requires the agency to consider the effect of such regulations on the following:

1. Existing and future levels of marine mammal species and population stocks;
2. Existing international treaty and agreement obligations of the United States;
3. The marine ecosystem and related environmental considerations;
4. The conservation, development, and utilization of fishery resources (not applicable in this case); and
5. The economic and technological feasibility of implementation.

Section 103(c) of the MMPA lists some of the allowable restrictions that regulations may include for governing the take of marine mammals, such as limits on the number, age, size, and sex of animals taken, as well as the season, manner, location, and fishing techniques that may be used (for marine mammals caught in fishing gear incidental to fishing activities) (16 U.S.C. §1373(c)). Regulations are subject to periodic review and modification to carry out the purposes of the MMPA (16 U.S.C. §1373(e)).

Section 103(d) of the MMPA (16 U.S.C. §1373(d)) provides that regulations governing the take of marine mammals in the event of a waiver "must be made on the record after an opportunity for an agency hearing on both the Secretary's determination to waive the moratorium . . . and on such regulations." Agency regulations govern the conduct of the agency hearing, call for the appointment of an administrative law judge, and prescribe other procedures (50 CFR 228).

Pursuant to MMPA section 103(d) (16 U.S.C. §1373(d)), either before or concurrent with the public notice of its intention to issue regulations, we must make available to the public:

1. A statement of the estimated existing levels of the species and populations stocks of the marine mammal concerned;
2. A statement of the expected impact of the proposed regulations on the OSP of such species or population stock;
3. A statement describing the evidence before the agency that forms the basis for the regulations; and
4. Any studies made by or for the agency or any recommendations made by or for the agency or the MMC that relate to the establishment of the regulation.

If NMFS waives the MMPA take moratorium for ENP gray whales and issues regulations governing a tribal hunt, the Makah Tribe would have to obtain a permit under those regulations prior to taking any whales. The permit process, which is described in section 104 of the MMPA (16 U.S.C. §1374), includes the opportunity for public notice and comment. The Tribe, as applicant for the permit, must demonstrate that the taking of any marine mammal under such permit will be consistent with the purposes and policies of the MMPA and the applicable regulations established under MMPA section 103 (16 U.S.C. §1373). A permit issued under MMPA section 104(b) (16 U.S.C. §1374(b)) must be consistent with applicable regulations and must specify the following:

1. The number and kinds of animals authorized to be taken;
2. The location and manner (which the Secretary must determine to be humane) in which they may be taken;
3. The period during which the permit is valid; and
4. Other terms or conditions that the Secretary deems appropriate.

The MMPA defines 'humane' as "that method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved" (16 U.S.C. §1362(4)).

The permit process is subsequent to and separate from the waiver process and therefore not part of this waiver process. The permit process is described here and discussed elsewhere in this Notice to provide context for consideration of the proposed

regulations.

B. Whaling Convention Act Processes Relevant to a Waiver

Because the Tribe's request involves a large whale species, the Tribe would need to obtain authorization from NMFS in accordance with the Whaling Convention Act (WCA), which implements United States obligations under the International Convention for the Regulation of Whaling (ICRW). The purpose of the ICRW is to "provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry" (ICRW, Dec. 2, 1946, 161 United Nations Treaty Series 72). The ICRW established the International Whaling Commission (IWC), an international organization whose charge includes adopting provisions for the conservation and utilization of whale resources by periodically amending the Schedule, an integral document of the ICRW that, among other things, provides for the protection of certain species and sets catch limits for aboriginal subsistence whaling.

Beginning in 1996, the Russian Federation and the United States submitted a joint proposal to the IWC for an aboriginal subsistence whaling catch limit for ENP gray whales on behalf of Chukotkan natives and the Makah Tribe, respectively. In response the IWC has repeatedly established catch limits for ENP gray whales, the most recent of which runs from 2013 through 2018 and is for aborigines "only when the meat and products of such whales are to be used exclusively for local consumption and distribution" (IWC, 2012a). The 6-year harvest limit is for 744 whales with an annual cap of 140 whales. A bilateral agreement between the United States and Russian Federation sets overall and annual limits for the two countries (Fominykh and Smith, 2017), with the Makah Tribe entitled to a maximum of 5 whales in any one year and 24 whales over 6 years, for an average of 4 whales per year.

The Makah Tribe's request for domestic review of its proposed whaling under the MMPA recognizes the international catch limit authorized by the IWC. If NMFS waives the MMPA take moratorium for ENP gray whales and issues regulations governing a tribal hunt, the Makah Tribe and NMFS would need to complete procedures established in the WCA and implementing regulations at 50 CFR Part 230 to allocate a domestic catch limit for ENP gray whales to the Makah Tribe consistent with the IWC Schedule and bilateral agreement, which include publishing those catch limits and entering into a

cooperative agreement. Those processes are subsequent to and separate from the MMPA process of waiving the take moratorium and issuing regulations.

C. North Pacific Gray Whales

The life history, status, and distribution of North Pacific gray whales are described in detail in the DEIS (Subsection 3.4, Gray Whales). We summarize that information here and discuss the ENP gray whale stock in more detail in a companion biological report (NMFS, 2017), which is incorporated by reference.

NMFS and the IWC recognize two stocks of gray whales, one in the western and one in the eastern north Pacific (IWC, 2013; Carretta et al., 2015). The World Conservation Union also recognizes these two stocks (Reilly et al., 2008). Genetic studies have found distinct differences between the two populations (LeDuc et al., 2002; Lang et al., 2010; Lang et al., 2011a; Meschersky et al., 2012). Some researchers have suggested the two populations may not be distinct, citing recent information that the western North Pacific (WNP) and eastern North Pacific (ENP) populations mix in the ENP migratory corridor and on the wintering ground (Bickham et al., 2013). Through the stock assessment report process, NMFS concluded that the best scientific information available consists of genetic information showing significant mitochondrial and nuclear genetic differences between the WNP and ENP stocks, which demonstrates demographic independence (Carretta et al., 2015).

Commercial whaling from the mid-nineteenth through early twentieth centuries dramatically reduced the abundance of the gray whale, leading to its protection by a suite of international agreements and federal laws including the WCA and MMPA. The gray whale was listed as an endangered species under the U.S Endangered Species Act (ESA) and its predecessor statute beginning in 1970 (35 FR 8495, June 2, 1970). As a result of protection from commercial exploitation, the ENP gray whale stock recovered and in 1994 was removed from the ESA's list of endangered and threatened wildlife (59 FR 21094, June 16, 1994). The WNP stock remains listed as endangered (50 CFR 223.102).

As required under section 4(g) of the ESA, NMFS completed a plan to monitor the status of the ENP stock for at least five years following the delisting. The comprehensive status review, completed in August of 1999 (Rugh et al. 1999), recommended that the population continue under a non-listed, non-threatened

classification. In 2001, NMFS received a petition to relist the gray whale under the ESA. NMFS found that the petition did not present substantial scientific or commercial information indicating that relisting may be warranted (66 FR 32305, June 14, 2001). On October 21, 2010, NMFS received a petition under the MMPA to review the status of the ENP gray whale population and designate it as depleted under the MMPA. NMFS found that the petition did not present substantial information indicating that a status review may be warranted (75 FR 81225, December 27, 2010). NMFS has continued monitoring the population since delisting (Carretta et al., 2015).

NMFS recognizes the ENP gray whale population as a single stock, which spends the winter as far south as the Baja California Peninsula and Gulf of California in northwestern Mexico and migrates north to summer feeding areas as far as the Chukchi and Beaufort Seas. A small group of ENP whales, referred to as the Pacific Coast Feeding Group, or PCFG, exhibits seasonal fidelity to feeding grounds off the West Coast of the United States and Canada. Whales that are photo-identified within the region between northern California and northern Vancouver Island (from 41°N to 52°N) during the summer feeding period of June 1 to November 30, in two or more years, are defined by the IWC as belonging to this group (IWC, 2011a; IWC, 2011b; IWC, 2011c). NMFS has adopted this definition (Carretta et al., 2015).

Scientists have observed the PCFG for several decades and NMFS has monitored the PCFG for evidence of stock structure for more than 15 years. The size of the group has remained relatively stable at about 200 animals since 2003 (Carretta et al., 2015). Notwithstanding their small numbers relative to the larger ENP gray whale stock, about 40 percent of gray whales in the Makah Tribe's U&A during the spring has consisted of PCFG animals (Calambokidis et al., 2014). NMFS scientists and others examined the genetic information for evidence that the PCFG is demographically independent (Frasier et al., 2011; Lang et al., 2011b). They found that sampled whales that meet the definition of the PCFG had small but significant differences in the diversity of mitochondrial DNA (mtDNA), which is inherited only from the mother, compared to whales on the northern feeding grounds of the Bering, Chukchi, and Beaufort Seas. However, no significant differences were found between these two groups when nuclear microsatellite data, which represent the DNA inherited from both parents, were analyzed. Similar results were

found by the other researchers (Frasier et al., 2011, D'Intino et al., 2013), even though the sample sets used to represent the PCFG and the larger ENP stock differed between the two studies. Both groups concluded that these results indicate that (1) structure is present among gray whales using different feeding areas, (2) matrilineal fidelity plays a role in creating such structure, and (3) individuals from different feeding areas may interbreed. In other words, calves likely follow their mothers to feeding areas and to some extent they return to those feeding areas in subsequent years. (Lang et al., 2011b also note that 59 percent of PCFG whales of known sex are female.) Whales that frequent one feeding area, however, are not reproductively isolated from whales that frequent other feeding areas.

Based on this evidence, the IWC concluded that it is plausible that the PCFG is demographically distinct and the group's dynamics warranted further investigation (IWC, 2011a) to better inform and analyze the impact of the Tribe's hunt on these whales, which it has done (discussed further below in the analysis of effects). The IWC does not have an equivalent stock identification process as provided for domestically under the MMPA. However, the IWC continues to set catch limits for "gray whales from the Eastern stock in the North Pacific" (IWC, 2012) and has recently convened several workshops to review the range-wide status and structure of North Pacific gray whales (IWC, 2014; IWC, 2015).

Domestically, under the MMPA, NMFS considered whether the PCFG warrants designation as a stock through the SAR process. Over the past several years and in response to new studies, NMFS has issued SARs evaluating this issue (78 FR 19446, April 1, 2013; 79 FR 49053, August 19, 2014; 80 FR 50599, August 20, 2015). NMFS continues to conclude that the existing information on population dynamics is not sufficiently well quantified to indicate that the PCFG is a stock. The current SAR (Carretta et al., 2015) represents NMFS' determination on this issue, although NMFS will continue to evaluate through the SAR process any new science on this issue as it does for the identification of marine mammal stocks in general. Accordingly, this waiver process applies at the level of the ENP gray whale stock as a whole (which includes whales in the PCFG), since that is the stock NMFS recognizes.

As previously described, NMFS' regulations define OSP as a population size

ranging between a stock's carrying capacity (K) and maximum net productivity level (MNPL). Punt and Wade (2012) analyzed the status of the ENP gray whale stock relative to OSP. They estimated the 2009 population to be at 85 percent of K, and at 129 percent of MNPL, with a probability of 0.884 (88 percent chance) that the population is above MNPL. Those results were consistent across all the model runs and with previous assessments, and supported a finding that the population was within OSP (Punt and Wade, 2012; see also 75 FR 81225, December 27, 2010). This conclusion has been accepted by NMFS as the best scientific information available from the SAR (Carretta et al., 2015), which notes that abundance will continue to fluctuate in response to human and natural factors affecting carrying capacity, "[e]ven though the stock is within OSP" (Carretta et al., 2015). The report states "[t]his is consistent with a population approaching K" (Carretta et al., 2015). In 2012, the IWC Scientific Committee reviewed the analysis of Punt and Wade (2012) and agreed that the results were within the bounds considered in the Committee's gray whale assessment. Thus, through the SAR process, NMFS has found that the best scientific information available indicates that the ENP gray whale stock is at OSP.

The most recent SAR calculates the PBR for the ENP gray whale stock to be 624 whales per year (Carretta et al., 2015). The primary source of human-caused mortality is the Chukotkan hunt, which took 127 whales per year on average from 2008 to 2012. Other sources of human-caused mortality, such as ship strikes and entanglement in fishing gear, result in about 6 ENP gray whale deaths per year.

Although NMFS does not recognize the PCFG to be a separate stock, the most recent SAR (Carretta et al., 2015) also calculates a separate PBR for the PCFG, "[b]ecause the PCFG appears to be a distinct feeding aggregation and may warrant consideration as a distinct stock in the future." The term "distinct feeding aggregation" is used by biologists in the scientific literature to describe concentrations of whales that forage in a specific area but the term is not intended to signify that such whales constitute a 'stock' as that term is defined under the MMPA. The SAR notes that calculating this separate PBR "allows NMFS to assess whether levels of human-caused mortality are likely to cause local depletion within this population." In other words, if human-caused mortality for the PCFG is less than or equal to its PBR, we would expect the PCFG to

maintain its presence in the PCFG feeding area at a level equivalent to a "theoretical OSP range" for the group, or to eventually achieve OSP if the PCFG is currently below this level. It is unknown whether the PCFG, if it were eventually designated a stock, would be within OSP due to uncertainties in population parameters such as emigration and immigration rates, bycatch mortality, and recruitment (Punt and Moore, 2013). The PBR reported for the PCFG in Carretta et al. (2015) is 3.1 whales per year and human-caused mortality is reported as 0.25 whales per year, which is a minimum estimate because not all whales killed as a result of human causes are necessarily documented.

The most recent SAR (Carretta et al., 2015) identifies injuries due to fisheries and marine debris as well as a number of habitat concerns for ENP gray whales. Industrialization and shipping congestion throughout the nearshore migratory corridors increase risks from pollutants and ship strikes. Climate change, especially in Arctic waters, is likely to affect the availability of habitat and prey species, especially for shell-forming species subject to increased ocean acidification. Human exploration activities (e.g., for oil and gas deposits) are also expected to increase in the Arctic which in turn could increase risks to whales from spills, ship strikes, and anthropogenic noise. The SAR does not indicate that these factors are a threat to the OSP status of the ENP stock at this time, noting that the stock has been fluctuating around its average carrying capacity for the last 30 years and will continue to do so as the population adjusts to natural and human-caused factors affecting carrying capacity.

Section 101(a)(3)(A) of the MMPA requires that a waiver and regulations "must . . . [h]ave due regard to the distribution, abundance, breeding habits, and times and lines of migratory movements of the marine mammal stock potentially subject to take" (16 U.S.C. §1371(a)(3)(A)). The DEIS contains a detailed discussion of these factors, which we summarized in a separate biological report (NMFS, 2017). In that report we describe these factors and also examine the feeding ecology of ENP gray whales.

II. Proposed Regulations

The Tribe's 2005 request included a harvest level of 20 ENP gray whales every 5 years, and a limit of 7 strikes per hunting season. It also included provisions to observe IWC regulations, achieve the management goal of avoiding "local depletion" of PCFG

whales, safeguard public and hunter safety, and preserve cultural aspects of the hunt while promoting humaneness.

The proposed waiver and regulations would authorize a limited hunt by the Makah Indian Tribe for ENP gray whales in the coastal portion of the Tribe's U&A. The proposed regulations are informed by the Tribe's initial request, new scientific information available since the Tribe's initial request, and public, tribal, and MMC comment on the two DEISs, and the agency's gray whale SARs. They also reflect our consultation with the Makah Tribe pursuant to Executive Order 13175 on consultation with tribes, as well as, our consultation with the MMC pursuant to the MMPA.

The proposed regulations would be effective for a 10-year period, in contrast to the Tribe's request for permanent regulations. We conclude that permanent regulations would not adequately allow for modifications to the regulations based on hunt monitoring or new scientific information that may become available in the future, and that 10 years is a short-enough period to allow for meaningful reconsideration based on any new information (e.g., if the Tribe were to seek a subsequent waiver). The proposed regulations respond to the Tribes' application and the requirements of the MMPA by, among other things: (1) imposing various restrictions designed to ensure that a hunt (and hunt training) poses limited risk to any WNP gray whales that might be encountered, (2) limiting impacts on PCFG whales to achieve the management goal of avoiding local depletion, and (3) complying with international obligations of the United States under the ICRW.

The MMPA and implementing regulations do not define or contain requirements regarding local depletion, nor has the agency developed guidance defining that term. In adopting the Tribe's management goal in the proposed regulations (avoid local depletion), we define it to mean that the hunting regime would not contribute to PCFG abundance being below its theoretical OSP range. We note that this interpretation is unique to the specific circumstances of the PCFG in the context of the Tribe's request. In addition to limiting mortality to achieve the management goal of avoiding local depletion, the proposed regulations limit the number of whales that may be approached or subjected to unsuccessful harpoon attempts. The management goal of these provisions is to limit the potential risk of whales being disturbed by non-lethal hunt-related

interactions.

A. Managing Risk to WNP Whales

The Tribe originally proposed limiting the hunting season to the period December 1 through May 31, when most ENP gray whales are migrating to and from northern feeding grounds (the "migration season"), to minimize the potential that a PCFG whale would be killed. Scientists subsequently observed WNP whales in the ENP, including the Tribe's U&A, during the migration season. This creates the possibility that a tribal hunt at that time could kill a WNP whale, which the Tribe has not requested, is not internationally authorized, and cannot be authorized through an MMPA waiver. To limit the risk of a WNP whale being killed, the proposed regulations would authorize a hunt during the migration season with two important restrictions: (1) hunting would only be allowed every other year, proposed for even years, and (2) only three whales could be struck in an even-year hunt. (The Tribe's proposal presumed that a struck whale would die, which is the same presumption we made in our analyses supporting the proposed regulations.) Additional restrictions would limit the number of attempted strikes and approaches, to limit potential risk of interactions with WNP whales.

The proposed regulations would also allow up to two strikes in odd-year hunts during the period from July 1 through October 31, when WNP whales would be feeding in the western North Pacific ("feeding season"). Because WNP whales are not expected to be in the Tribe's U&A during the feeding season, authorizing a hunt at this time would avoid impacts to WNP whales. The potential impacts of odd-year hunts on PCFG whales, and the restrictions aimed at limiting those impacts, are discussed in the following section.

As described further in the section below, "Effect of the proposed waiver and regulations on the WNP gray whale stock," these limits result in about a 3 percent chance that a WNP whale would be struck during the 10-year duration of the regulations, or considered another way, the Tribe would be expected to strike one WNP whale out of every thirty 10-year periods (i.e., every 300 years) if tribal hunters struck the full number of whales allowed in each even-year hunt (Moore and Weller, 2017). The discussion below under *Effect of the proposed waiver and regulations on the WNP gray whale stock* also explains our conclusion that this level of risk is acceptable under the MMPA.

The proposed regulations contain additional provisions to limit the risk to WNP whales. For example, in addition to limits on strikes, the Tribe would be limited to 18 unsuccessful strike attempts in even-year hunts (when WNP whales might be present) and 353 approaches per year. Over the 10-year duration of the regulations (and assuming all unsuccessful strike attempts and approaches are made) there is a 17 percent chance that at least one WNP whale would be subjected to an unsuccessful strike attempt and a 93 percent chance that one or more WNP whales would be approached. Considered another way, it is expected that the Tribe would make an unsuccessful strike attempt on one WNP whale every 57 years and approach about 8 WNP whales over 10 years (Moore and Weller, 2017).

During an even-year hunt, the Tribe may strike only one whale in a 24-hour period as a precaution against striking multiple WNP gray whales that might be travelling together in a group (Weller et al., 2012). Once a whale is landed in an odd-year hunt the Tribe would cease hunting for that season. In an even-year hunt, once a whale is landed the Tribe would not be able to issue an additional hunting permit until NMFS has notified the Tribe whether the landed whale was a WNP whale. In the unlikely event the Tribe did strike a WNP whale (in either an even- or odd-year hunt), all hunting would cease unless and until the Regional Administrator determines that measures have been taken to ensure no additional WNP gray whales are struck during the duration of the existing permit and the remainder of the waiver period.

B. Managing Impacts on PCFG Whales

Although the PCFG is not recognized as a stock, the Tribe's initial request for a waiver proposed a number of measures in addition to the seasonal restriction described above aimed at avoiding local depletion of PCFG whales. The proposed regulations also aim to avoid such depletion as we define it and include measures that would limit impacts to PCFG whales to ensure that the hunt does not prevent ENP gray whales from maintaining or achieving their presence in the PCFG feeding area at a level that is within their theoretical OSP range.

Consistent with the Tribe's proposal, the proposed regulations authorize hunting only in the coastal portion of the Tribe's U&A. Hunting in the Strait of Juan de Fuca is prohibited in part as a safety measure, but also because during the migration season there

is a higher proportion of PCFG whales in the Strait. The regulations also limit the number of strikes, attempted strikes, and approaches on PCFG whales. Approaches associated with hunt training are allowed in the coastal portion of the Tribe's U&A and counted towards the overall approach limit.

The proposed regulations differ from the Tribe's proposal in how PCFG mortality would be regulated to avoid local depletion. The Tribe's proposal would set an annual harvest limit on PCFG whales equal to PBR, not accounting for struck and lost whales or other sources of human-caused mortality. In contrast, the proposed regulations rely on seasonal strike limits as the primary method of limiting PCFG mortality with an additional protective measure in the form of a PBR limit that is adjusted to account for other sources of human-caused mortality ("adjusted PBR"). Struck and lost whales are counted against the adjusted PBR limit. The most recent SAR (Carretta et al. 2015) reports a PBR for PCFG whales of 3.1 and a current level of annual human-caused mortality of 0.25 (based on the SAR's 5-year data summary), which would result in an adjusted PBR of 2.85 (or 28.5 over the 10 years of the regulations if current conditions continue).

As noted above, to protect WNP whales, the proposed regulations would limit to 3 the number of strikes authorized during the migration season in even-year hunts, and move hunts to the summer feeding season during odd-numbered years, when WNP whales are not expected to be in the hunt area. For odd-year hunts, when all whales struck would count as PCFG whales, the proposed regulations would impose a 2-strike limit, to manage impacts to PCFG whales. As an additional protection for PCFG whales, the proposed regulations would limit the landing of whales in odd-year hunts to one whale per year, creating the potential for a single strike during odd-year hunts.

The combination of a 3-strike limit in even-year hunts (when PCFG whales are mixed with the broader migrating population and about 40 percent of animals encountered in the hunt area are expected to be from the PCFG) and a 2-strike limit in odd-year hunts (when whales encountered are likely to be PCFG whales) would result in an expected mortality of 16 PCFG whales being killed over 10 years if strike limits are reached in all years. This is based on a likelihood that 6 PCFG whales would be killed in even-year hunts (3 strikes times 40 percent = 1.2 PCFG whales per year, times 5 years of

even-year hunts, for a total of 6 PCFG whales over 10 years) and 10 PCFG would be killed in odd-year hunts (2 strikes times 100 percent = 2.0 PCFG whales per year, times 5 years of odd-year hunts, for a total of 10 PCFG whales over 10 years). As reported in the most recent SAR (Carretta et al., 2015), abundance estimates for PCFG whales have been relatively stable since 2003, fluctuating between 194 and 219 animals and most recently estimated at 209 whales (Calambokidis et al., 2014). The annual harvest of 1.6 PCFG whales is much lower than the adjusted PBR for PCFG whales. It is also much lower than the PCFG's average year-to-year change in abundance (plus or minus 9 animals per year since 2003; Calambokidis et al. 2014), and less than the number of new whales that would be expected to recruit to the feeding area over the 10 years of the regulations, which would be about 4 animals per year or 40 whales over 10 years based on genetic simulations (Lang and Martien, 2012). Even if killed whales were not replaced with new recruits, the potential removal of 16 PCFG whales over 10 years from a population of 209 animals would reduce the PCFG to 193 animals, which is not significantly different than the lowest abundance estimated (194 whales) during this recent period of stability. Therefore, we would not expect the primary strike limits (3 in even-year hunts and 2 in odd-year hunts) to substantially reduce the abundance of PCFG whales or contribute to the PCFG not maintaining or achieving its theoretical OSP.

In the unlikely event that all whales struck during the 10-year hunt period (regardless of season) were PCFG whales, the total number of PCFG whales killed would amount to 2.5 annually (3 strikes in even-year hunts plus 2 strikes in odd-year hunts = 5, divided by 2 = annual average of 2.5), or 25 PCFG whales over the 10-year period of the regulations. These higher levels would still be lower than the adjusted PBR for PCFG whales, and much lower than the PCFG's expected recruitment over the 10-year period and the recently observed year-to-year change in abundance.

Limiting PCFG mortality to an adjusted PBR provides additional assurance against local depletion in the hunt area. The adjusted PBR of 2.85 (or 28.5 over the 10 years of the regulations if current conditions continue) is greater than the maximum PCFG mortality that could occur under the proposed regulations if tribal hunters struck the full number of whales authorized. It is also greater than the expected PCFG mortality likely to occur under the proposed regulations based on presence of PCFG whales in the

Tribe's U&A.

The table below displays the likely and maximum mortality of PCFG whales that might occur under the proposed regulations, as compared to the adjusted PBR limit under current conditions.

	Strike Limit		**Likely PCFG mortality**		**Maximum PCFG mortality**		**Adjusted PBR limit under current conditions**	
	Annual	10-year	Annual	10-year	Annual	10-year	Annual	10-year
Even-year hunt	3	15	1.2	6	3	15	**2.85**	**28.5**
Odd-year hunt	2	10	2	10	2	10		
Total	**2.5**	**25**	**1.6**	**16**	**2.5**	**25**		

In counting struck whales against this adjusted PBR limit, the regulations propose that all whales struck during odd-year hunts would count as PCFG whales. For whales that are landed during an even-year hunt, NMFS would compare photographs of the landed whale to photographs of known PCFG whales. Whales identified as PCFG whales would count as 1 whale against the PCFG mortality limit. Whales that are struck and lost would be counted in proportion to the presence of PCFG whales identified in the Makah Tribe's U&A, unless there were sufficient photographs of the struck and lost whale to identify it as a PCFG whale or as not a PCFG whale.

Two provisions in the proposed regulations are designed to prevent the Tribe from accidentally exceeding the PCFG mortality limit. For example, the Tribe would not be allowed to hunt if the PCFG mortality limit is less than one, either at the beginning of the season or as a result of in-season accounting for struck and lost or landed whales. Also, once a whale is landed in an even-year hunt, the Tribe would not be able to issue an additional hunting permit until NMFS has notified the Tribe whether the landed whale was a PCFG whale.

As is the case for WNP whales, limits on approaches and unsuccessful strike

attempts are intended to limit the risk of non-lethal interactions to PCFG whales.

In utilizing the adjusted PBR limit, we note that Congress included the PBR formula in the MMPA as a method for monitoring and managing marine mammal mortality incidental to commercial fishing operations (NMFS, 1992) and not as a method for managing potential harvest of marine mammals. The proposed regulations address these concerns by setting a primary strike limit likely to result in mortality well below the level that could lead to local depletion (see rationale above regarding the expected mortality of 16 PCFG whales); the adjusted PBR limit is included as an additional protective measure. The regulations also respond to these concerns in the way that the adjusted PBR limit is structured, specifically (1) it is used to set a mortality level rather than a harvest level (that is, it is a limit rather than a target and it accounts for all whales that are struck during a hunt and not just whales that are landed), and (2) it accounts for other sources of human-caused mortality. Finally, the PCFG is not recognized as a marine mammal stock under the MMPA, thus we incorporate these protections to meet the management goal of avoiding local depletion and not due to MMPA requirements related to maintaining stocks at OSP levels. For these reasons we conclude that the adjusted PBR limit is an appropriate additional tool in this case, where the goal is to avoid local depletion of a feeding aggregation that is not recognized as a marine mammal stock.

C. Managing Other Aspects of the Hunt

The Tribe proposed harvesting an average of 4 and maximum of 5 whales per year, consistent with the current IWC catch limit issued in response to the joint request of the United States and Russian Federation. To date, the catch limit has been implemented through a series of yearly agreements signed by the United States and Russia. The proposed regulations acknowledge this process and provide that the number of ENP gray whales the Tribe may harvest will not exceed the annual number agreed between the United States and Russian Federation as the U.S. share of the catch limit established by the IWC. Given the strike limits in the proposed regulations, the Tribe would be unable to harvest 4-5 whales per year as specified under the current catch limit. In an even-year hunt the strike limit would restrict the harvest of whales to a maximum of three and in an odd-year hunt the regulations would limit the number of whales that could be harvested

to one. The regulations would also limit the Tribe to no more than three struck and lost whales in any calendar year.

The Tribe proposed hunting from canoes using toggle point harpoons to strike and secure whales and a .50 caliber rifle to kill whales. The proposed regulations do not specify a method of hunting but instead refer to the permitting process, which would follow the adoption of final regulations. The permitting provisions of the MMPA require that permits must specify, among other things, the manner in which marine mammals may be taken, which NMFS must determine is humane. The MMPA defines 'humane' as "that method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved" (16 U.S.C. §1362(4)).

III. Section-by-Section Discussion

Section 216.110 – Purpose. To establish regulations governing the take of ENP gray whales by the Makah Indian Tribe.

Section 216.111 – Scope. Authorizes only the taking of ENP gray whales and only by enrolled members of the Makah Indian Tribe.

Section 216.112 – Definitions. Incorporates the definitions in other regulations governing the take of marine mammals, unless the terms are defined otherwise in this section:

(a) "Bonilla-Tatoosh Line" is defined according to the Makah Tribe's whaling ordinance.

(b) "Calf" is defined consistent with the WCA definition as any whale less than 1 year old. The WCA definition includes an animal with milk in its stomach. That provision is not included here because it would not be possible for a tribal hunter to determine that fact until after a whale had been killed and landed.

(c) "Enrolled member" or "member" of the Makah Indian Tribe is a person on the official tribal membership roll.

(d) "ENP gray whale" is defined with reference to the NMFS SAR.

(e) "Even-year hunt" is defined as a 6-month hunting season from December 1 in an odd-numbered year to May 31 in the following even-numbered year.

(f) "Gray whale" means a member of the species *Eschrichtius robustus*.

(g) "Harpooner" is one of several definitions of Makah tribal members who have

designated roles in a hunt and have been certified by the Tribe as having the training and qualifications for that role.

(h) "Humane" has the same meaning as contained in 50 CFR 216.3.

(i) "Hunt" and "hunting" are defined to include activities associated with a hunt: pursue, strike, harpoon, shoot or land an ENP gray whale or to attempt any such act. A "hunt" means any act of hunting. Hunting approaches, training approaches, and training harpoon throws are defined separately because there are distance and weapon provisions specific to those activities.

(j) "Hunt permit" is defined as a permit issued by NMFS under these regulations to hunt ENP gray whales and to approach and to make training harpoon throws on such whales as part of a hunt or hunt training.

(k) "Hunting approach" means to cause, in any manner, a vessel to be within 100 yards (91 m) of a gray whale during a hunt. The 100-yard limit is consistent with permit conditions NMFS imposes for research vessels on large cetaceans (e.g., 60 FR 3775, January 19, 1995; 66 FR 29502, May 31, 2001), as well as guidelines for all motorized and non-motorized vessels as defined in NMFS "Be Whale Wise" guidelines that recommend staying 100 yards (91 m) from all marine mammals, noting that there is a regulation prohibiting approaches closer than 200 yards (183 m) for killer whales in inland waters of Washington (50 CFR 103(e)).

(l) "Land" and "landing" are defined as bringing an ENP gray whale, including parts, onto land in the course of hunting.

(m) "Makah Indian handicrafts" are defined as articles made by Makah tribal members that contain nonedible products of an ENP gray whale, and are significantly altered from their natural form. They cannot be produced through various methods of mass production. The definition gives examples of the types of articles contemplated but is not limited to those examples.

(n) "Makah Indian Tribe" or "Tribe" is defined as the entity described in the list of federally recognized Indian tribes maintained by the U.S. Department of the Interior.

(o) "NMFS hunt observer" is defined as a person authorized by NMFS to accompany and observe a hunt. We anticipate that hunting under these regulations will be observed by NMFS. In the DEIS we included an estimate of likely costs associated with NMFS

oversight, including the cost of providing an observer.

(p) "Odd-year hunt" is defined as a hunting season from July 1 to October 31 in an odd-numbered year. The PCFG feeding season is June 1 to November 30. The reason for removing a month from the beginning and end of this season is to provide extra protection against killing a WNP whale during an odd-year hunt.

(q) "Pacific Coast Feeding Group (PCFG) gray whale" or "PCFG whale" is defined consistent with the IWC definition as gray whales observed in at least 2 years between June 1 and November 30 in the eastern North Pacific between 41° N. lat. and 52° N. lat., excluding areas in Puget Sound. Individually identifiable whales are those entered into a photo-identification catalog(s) recognized by the Regional Administrator.

For many years photo-identification catalogs have been maintained by Cascadia Research Collective, which receives some but not all of its catalog funding for gray whales from NMFS. Several researchers participate in Cascadia's photo-identification program and provide photographs to Cascadia. Photographs taken by researchers under NMFS funding are also provided to NMFS Marine Mammal Lab in Seattle, Washington. Because these regulations would impose constraints to limit the risk of interactions with WNP and PCFG whales, there should be a reliable method of identifying such whales in a variety of circumstances, including: whales in the Makah Tribe's U&A during the migration season in order to be able to estimate their proportion; whales landed in the course of hunting; and whales that are struck and lost in an even-year hunt. For whales that are struck and lost, it may not be possible to make an identification, in which case the regulations would count them as PCFG whales in proportion to their observed presence in the Makah Tribe's U&A during each month.

Because of the importance of the photo-identification process, the regulations require that before issuing a hunt permit to the Tribe, the Regional Administrator must determine that there are photo-identification catalogs available to allow for the identification of PCFG and WNP whales. In addition to the quality of the catalogs, there must be reliable processes in place for making identifications. Currently the Cascadia Research Collective provides this service and has demonstrated an ability to make matches within 24 hours (J. Calambokidis, Cascadia Research Collective, personal communication, 2017). NMFS intends to either develop a contractual mechanism or in-

house expertise prior to issuing permits to ensure an adequate catalog is maintained and matches can be quickly made. As an interim step, we have developed a protocol that describes the requirements for an adequate catalog and photo-identification processes (NMFS, 2017 [in prep]).

(r) "Potential biological removal (PBR) level" has the same meaning as contained in 50 CFR § 229.2.

(s) "Recordkeeping" and "reporting" are defined as the collection and delivery of photographs, biological data, harvest data, and other information regarding activities conducted under these regulations, as required by NMFS.

(t) "Regional Administrator" is defined as the Regional Administrator of NMFS for the West Coast Region.

(u) "Rifleman" is one of several definitions of Makah tribal members who have designated roles in a hunt and have been certified by the Tribe as having the training and qualifications for that role.

(v) "Safety officer" is one of several definitions of Makah tribal members who have designated roles in a hunt and have been certified by the Tribe as having the training and qualifications for that role.

(w) "Stock assessment report" is defined as the most recent and final stock assessment produced by NMFS under 16 U.S.C. §1386.

(x) "Strike" or "struck" are defined consistent with the WCA definition as causing a harpoon or other device to penetrate a whale's skin or an instance in which a whale's skin is penetrated by a harpoon or other device while hunting.

(y) "Struck and lost" refers to a whale that is struck but not landed.

(z) "Take" has the same meaning as contained in 50 CFR 216.3.

(aa) "Training approach" means to cause, in any manner, a training vessel to be within 100 yards (91 m) of a gray whale.

(bb) "Training harpoon throw" is defined as an attempt to contact a gray whale with a blunted spear-like device that is incapable of penetrating a whale's skin.

(cc) "Training vessel" is defined as a canoe or other watercraft used in hunt training that does not carry weapons typically used to strike a gray whale, such as harpoons and rifles.

(dd) "Tribal hunt observer" is one of several definitions of Makah tribal members who have designated roles in a hunt and have been certified by the Tribe as having the training and qualifications for that role.

(ee) "U&A" or "Makah Indian Tribe's U&A" are defined as the Makah Indian Tribe's usual and accustomed fishing grounds, consistent with the 1855 Treaty of Neah Bay and as adjudicated in *United States.* v. *Washington*, 626 F. Supp. 1405, 1467 (W.D. Wash. 1985).

(ff) "WNP whale" is defined with reference to the NMFS SAR, and as whales that are entered into a photo-identification catalog(s) recognized by the Regional Administrator. Currently there are two WNP whale catalogs maintained by Russian researchers at the Russian Academy of Sciences and the Institute of Marine Biology. These catalogs include photographs of whales sighted off Sakhalin Island and Kamchatka in the Russian Far East, with many of the same whales included in both of the catalogs. As with the PCFG catalog, curators of those catalogs are able to quickly make matches between photographs of whales taken by researchers with existing photographs in the catalog. The regulations require, as with PCFG whales, that the Regional Administrator must determine an adequate catalog and photo-identification processes exists for WNP whales prior to issuing a permit. The protocol described above for maintaining a catalog and making matches would also apply to WNP whales.

(gg) "Whaling captain" is one of several definitions of Makah tribal members who have designated roles in a hunt and have been certified by the Tribe as having the training and qualifications for that role.

(hh) "Whaling crew" is defined as those members of the Makah Indian Tribe taking part in a hunt under the control of a whaling captain and accompanied by a tribal hunt observer.

§ 216.113 – Take authorizations. Establishes the authority of the Regional Administrator to issue hunt permits to the Makah Indian Tribe under prescribed conditions and protocols, authorizes the collection of data, authorizes Makah tribal members to approach and practice throws with a training harpoon on ENP gray whales in the course of training, and authorizes the utilization of ENP gray whale products taken in accordance with a hunt permit.

(a) This subsection authorizes the Regional Administrator to issue hunt permits to the Makah Indian Tribe.

(1) *Hunt permit duration.* Pursuant to the MMPA, the maximum term for a permit would be five years. The regulations authorize the Regional Administrator to issue permits effective for up to 5 years, except that the first permit is limited to 3 years. The first few years of hunting may reveal areas for improvement; limiting the term of the initial permit to 3 years ensures that improvements can be made in a timely manner.

(2) *Hunting seasons.* Even-year hunts would only be permitted from December 1 of an odd-numbered year through May 31 of the following even-numbered year. Odd-year hunts would only be permitted from July 1 through October 31 in an odd-numbered year. During the even-year hunt season, both WNP and PCFG whales may be encountered in the hunt area; during the odd-year hunt season, WNP whales are not expected to be present and all whales encountered are presumed to be PCFG whales. Limits on the numbers of whales that may be struck in each season are described later in this subsection and are intended to manage risk to WNP whales and limit impacts to PCFG whales.

(3) *Training period.* Hunt permits may authorize training approaches and training harpoon throws in any month, including outside a hunting season.

(4) *Limits on the number of gray whales approached, subjected to unsuccessful strike attempts, struck, struck and lost, and landed.*

(i) *Approaches*. The hunt permit would authorize no more than 353 ENP gray whales to be approached each year, of which no more than 142 of such approaches may be on PCFG whales. These values were analyzed in the DEIS and are maximum estimates based on observations during the Tribe's hunt in 2000 (Gearin and Gosho, 2000). The purpose of this provision is to prevent or limit the extent to which WNP and PCFG whales may be encountered and possibly disturbed in the hunt area.

(ii) *Unsuccessful strike attempts*. The hunt permit would authorize no more than 18 gray whales to be subjected to unsuccessful strike attempts in an even-year hunt and 12 gray whales to be subjected to unsuccessful strike attempts in an odd-year hunt. These limits are based on experience gained from Makah gray whale hunts conducted in 1999 and 2000 and, as described in the DEIS, rely on a 6:1 ratio of unsuccessful strike attempts to successful strikes. Also, each training harpoon throw will count as an unsuccessful

strike attempt. Similar to the limit on approaches, the purpose of these provisions is to prevent or limit the risk of non-lethal impacts on WNP and PCFG whales. Training harpoon throws are also counted as strike attempts, because the level of impact on whales is expected to be the same as an unsuccessful strike attempt using a hunting harpoon.

(iii) *Strikes.* The hunt permit would authorize no more than 3 gray whales to be struck in an even-year hunt and no more than two gray whales to be struck in an odd-year hunt. Over the 10-year course of the regulations, these strike provisions limit the risk of a WNP whale being killed to about 3 percent, corresponding to an expectation of one WNP gray whale being killed every 300 years (assuming constant hunt parameters and no change in ENP and WNP population sizes or migration patterns), and limit the likelihood of strikes on PCFG whales to 16 (assuming a total of 6 PCFG whales are killed in all even-year hunts and 10 are killed in all odd-year hunts). If all whales struck under these limits were PCFG whales, the hunt authorized by the regulations would kill 25 PCFG whales. Under current conditions, taking into accounting existing levels of human-caused mortality, the adjusted PBR limit for PCFG whales over the 10 years of the regulations would be 28.5. The proposed strike limits are intended to result in minimal risk that a WNP whale will be struck, and to result in a hunt that avoids local depletion of PCFG whales. The proposed regulations include the additional protection of a mortality limit based on adjusted PBR to further ensure a tribal hunt meets the management goal of avoiding local depletion of the PCFG.

Also, in light of evidence that some WNP gray whales may travel in a group (Weller et al., 2012) and tracking data indicate that it could take such whales several hours to traverse the hunt area (Mate et al., 2015), the regulations specify that the Tribe can strike no more than one whale in a 24-hour period.

(iv) *Struck and lost*. Consistent with the Tribe's application, the hunt permit may authorize no more than 3 ENP gray whales to be struck and lost in any calendar year.

(v) *Landings.* The number of whales landed would be limited based on the joint agreement between the United States and the Russian Federation establishing catch shares pursuant to the IWC Schedule. In addition, the hunt permit would authorize no more than 3 ENP gray whales to be landed in an even-year hunt and no more than 1 ENP gray whale to be landed in an odd-year hunt. In an even-year hunt, the number of landed

whales would be constrained by the strike limit. In an odd-year hunt, the Tribe could only land one whale, using a 2-strike limit. Thus, in some odd-year hunts the Tribe could land one whale with only one strike.

(vi) *WNP gray whales.* The hunt permit would provide that in the event the Regional Administrator determines a WNP gray whale was struck during a hunt and notifies the Makah Indian Tribe in writing, the Tribe would cease hunting unless and until the Regional Administrator determines that measures have been taken to ensure no additional WNP gray whales are struck during the duration of the existing permit. Also, no further permits would be issued unless and until the Regional Administrator determines that measures have been taken to ensure no additional WNP gray whales are struck during the duration of the waiver period.

(5) *Images and samples.* NMFS, tribal hunt observers, and tribal members training to hunt would be authorized to collect visual images (e.g., still photographs, motion pictures) as needed to document gray whales approached, struck, or landed. Persons authorized by NMFS and the Makah Indian Tribe may also collect, store, transfer, and analyze specimen samples from landed whales. The regulations also require photographs to be taken of landed whales as well as in the course of hunting, to the extent practicable.

(6) *Hunt permit terms and conditions.* Each hunt permit would specify:

(i) Those terms required by 16 U.S.C. §1374(b);

(ii) The maximum number of gray whales that may be approached per calendar year;

(iii) The maximum number of gray whales that may be subjected to unsuccessful strike attempts, including training harpoon throws, per hunting season and per calendar year;

(iv) The maximum number of gray whales that may be struck per hunting season;

(v) The maximum number of gray whales that may be struck and lost per calendar year;

(vi) The maximum number of gray whales that may be landed per hunting season and over the duration of the hunt permit, which will not exceed the number agreed between the United States and the Russian Federation as the U.S. share of the catch limit established by the IWC;

(vii) The area where approaches, training harpoon throws, and ENP gray whale hunts would be allowed, which is the coastal portion of the Tribe's U&A. In addition, this provision authorizes the Regional Administrator to include a requirement in the permit that hunters avoid certain areas to prevent and/or reduce the risk of disturbance to Olympic Coast National Marine Sanctuary resources such as seabirds and pinnipeds. This provision is intended to protect other living resources in the area, as deemed necessary by the Regional Administrator at the time the permit is issued. Because a hunt for ENP gray whales may result in the incidental take of other marine mammals during the course of hunting (for example, flushing pinnipeds from rocks and islands), § 216.113 (a)(7)(v) of the regulations requires the Regional Administrator to determine that the Tribe has obtained any relevant authorization from NMFS for incidental takes of other marine mammals prior to hunting ENP gray whales;

(viii) The type and timing of notice that the Makah Indian Tribe would need to provide NMFS before it approves a tribal whaling permit;

(ix) Measures to be taken by the hunt permit holder to provide for the safety of the whaling crew, the public, and others during an ENP gray whale hunt. In its application the Tribe declared its intention to hunt from a wooden canoe accompanied by a motorized chase vessel. Whales would be struck with steel-tipped toggle point harpoons and dispatched with a .50 caliber rifle. The DEIS analyzes this method of hunting as well as hunting with an explosive device. These regulations do not specify the manner or method of hunting that the Tribe may or must employ; section 104 of the MMPA (16 U.S.C. §1374) provides for the manner and method of take to be evaluated during the permit process. Evaluation of manner and methods during the permit process ensures that best practices may be included in a timely manner.

(x) That the hunt permit authorizes only the take of ENP gray whales and not the take of any other marine mammals. The WNP gray whale stock is listed as endangered under the ESA and as depleted under the MMPA. The Tribe did not request authorization to take WNP whales nor could the MMPA take moratorium be waived for WNP gray whales. In addition, during a tribal hunt there is a risk that other marine mammals may be encountered. As described in the *Required determinations* section below, the regulations

anticipate that the Tribe has obtained any relevant authorization from NMFS for incidental takes of other marine mammals prior to hunting ENP gray whales;

(xi) Such other provisions as the Regional Administrator deems necessary.

(7) *Required determinations.* Before issuing a hunt permit the Regional Administrator must make the following determinations:

(i) The authorized manner of hunting is humane. The MMPA requires this finding before a permit may be issued, and the proposed regulations repeat that requirement. The MMPA defines 'humane' as "that method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved" (16 U.S.C. §1362(4); 50 CFR 216. 3). Although there is no definitive humane killing requirement or methodology adopted by the IWC, the IWC has focused on reducing the length of time to death of a whale (i.e., reducing the amount of time between the strike and the death of a whale) to improve the humaneness of whaling (IWC, 2004; IWC, 2007; IWC, 2012b) as well as to address hunting efficiency. The IWC has also recognized the need to factor hunter safety into any measures used to improve humane killing methods. The IWC definition of humane killing is "[d]eath brought about without pain, stress, or distress perceptible to the animal. . . . Any humane killing technique aims first to render an animal insensitive to pain as swiftly as technically possible. In practice this cannot be instantaneous in a scientific sense" (IWC 12 Resolution 2004-3). The Makah Tribe proposed to use a toggle point harpoon as the weapon for striking whales and a .50 caliber rifle as the weapon for killing whales. The DEIS describes the detailed analyses commissioned by NMFS and others to examine the suitability of using a .50 caliber rifle to dispatch a gray whale and the conclusions of the reviewers that a .50 caliber rifle is capable of quickly killing a gray whale (DEIS Section 3.4.3.5.4, Method of Killing and Time to Death). To ensure that advances in science and methodology addressing efficiency and humaneness may be incorporated in a timely fashion this issue will be regularly reviewed during the permit process. During that process the Regional Administrator would consider the Tribe's proposal and evidence of alternative methods. The permitting process affords opportunities for public involvement. Also, § 216.117 (b)(2) of these regulations provides that NMFS will convene a team of experts to evaluate hunt humaneness and effectiveness after at least 8 gray whales have been struck.

(ii) The Makah Indian Tribe has enacted a tribal ordinance governing the hunt that is consistent with these regulations. This requirement would ensure the Tribe has the legal capacity to enforce the requirements of the regulations with respect to tribal members;

(iii) The Makah Indian Tribe has in place certification procedures for whaling captains, riflemen, harpooners, tribal hunt observers, and safety officers and a process to ensure compliance with those procedures. This requirement would ensure that Makah tribal members participating in a hunt are trained and have been certified by the Tribe for their respective roles. This requirement will support public safety and contribute to an increased likelihood that struck whales will be quickly killed and landed;

(iv) There are photo-identification catalogs and photo-identification processes available to allow the identification of WNP and PCFG gray whales. This requirement ensures that NMFS will continue to evaluate the adequacy of the photo-identification catalogs and support the collection and analysis of the photo-identification data; and

(v) The Makah Indian Tribe has obtained any relevant incidental take authorization for WNP gray whales or other marine mammals. A Makah hunt for ENP gray whales has the potential to effect other marine mammals. This requirement ensures necessary incidental take authorization is in place prior to the Regional Administrator issuing a permit authorizing a hunt.

(vi) Except for the initial hunt permit, before issuing a hunt permit the Regional Administrator must determine that the Makah Indian Tribe has complied with the permit terms and conditions and with the requirements of these regulations in carrying out any gray whale hunts or training approaches previously authorized, or if the Makah Indian Tribe has not complied, that it has adopted measures to ensure compliance.

(b) The subsection describes how ENP gray whales landed under a hunt permit may be utilized.

(1) Enrolled members of the Makah Indian Tribe may possess, consume, and share, within the Makah Indian Tribe's reservation boundaries, nonedible and edible products of ENP gray whales. This provision allows members of the Tribe to use any products of landed whales as they see fit, including exchange with other tribal members, so long as the products remain within the reservation boundaries. Outside the Makah Indian Tribe's reservation boundaries, enrolled members of the Makah Indian Tribe may possess and

consume edible products of ENP gray whales, and may share such edible products with any person attending a tribal or intertribal gathering, so long as there is not more than two pounds of edible ENP gray whale products per person attending the gathering. The purpose of this provision is to allow tribal members to share edible products at gatherings and events where non-tribal members will be present. The reason for the limit of two pounds per person is to ensure the event is a one-time event and not an opportunity for commercial exchange of edible gray whale products. Except for handicrafts, enrolled members of the Makah Indian Tribe may not sell, offer for sale, purchase, or barter any ENP gray whale products. The purpose of this provision is to prevent the commercial exchange of gray whale products, except when the products have been fashioned into handicrafts by members of the Makah Indian Tribe (and except for barter among tribal members on the reservation, as described in the first sentence).

(2) Enrolled members of the Makah Indian Tribe may possess, make, barter, and sell in the United States, Makah Indian handicrafts taken pursuant to these regulations, provided each handicraft, when sold, is permanently marked with a distinctive marking approved by the Makah Tribal Council, and is accompanied by a certificate of authenticity issued by the Makah Tribal Council or its designee, and entered in the Tribe's official record of Makah Indian handicrafts. This provision authorizes tribal members to sell handicrafts they have made so long as they include the specified means of identifying such handicrafts later, if and when they enter the stream of commerce.

(3) Any person may possess, purchase, or re-sell, in the United States, Makah Indian handicrafts made from ENP gray whales taken pursuant to these regulations, provided each handicraft is permanently marked with a distinctive marking approved by the Makah Tribal Council and is accompanied by a certificate of authenticity issued by the Makah Tribal Council or its designee, and entered in the Tribe's official record of Makah Indian handicrafts. This provision allows persons who have obtained handicrafts to transfer them. The MMPA allows such handicrafts to also be exported and no limitation on export is included in these regulations.

(4) Any person may consume edible ENP gray whale products within the boundaries of the Makah reservation if products are received from an enrolled member of the Makah Indian Tribe, or outside the boundaries of the Makah reservation at a tribal or intertribal

gathering if products are received from an enrolled member of the Makah Indian Tribe, so long as the products are consumed exclusively at the gathering, and are not further distributed. Subparagraph (1) above authorizes tribal members to share edible products with non-tribal members; this provision authorizes non-tribal members to receive and consume those products.

(c) The Makah Indian Tribe is responsible for managing all activities of any Makah Indian tribal member carried out under this section.

§ 216.114 – Accounting and identification of gray whales.

(a) The subsection describes specific notifications by the Regional Administrator to the Makah Indian Tribe.

(1) Thirty days prior to the beginning of a hunting season, the Regional Administrator will notify the Makah Indian Tribe in writing of the limit on PCFG whales that may be struck during the upcoming hunting season. The limit will be a value equal to the PBR level of PCFG whales as described in the NMFS stock assessment report, minus the average annual number of human-caused mortalities from sources other than the Makah Indian Tribe's hunt as described in that same report.

(2) By November 1 and prior to the beginning of a hunting season, the Regional Administrator will notify the Makah Indian Tribe in writing of the proportion of gray whales that will be presumed to be PCFG whales for each month of the upcoming calendar year based on such whales' occurrence in the Makah U&A, as determined by the Regional Administrator. The presumed proportions will be used to account for PCFG whales that are subjected to hunting or training approaches or unsuccessful harpoon attempts, or struck and lost during hunting or hunt training as well as the requirements under § 216.117.

(3) The Regional Administrator will notify the Makah Indian Tribe in writing when the Tribe has reached the limit of PCFG whales that may be struck in any hunting season.

(b) The subsection describes the process for identifying and accounting for gray whales during hunts and training approaches.

(1) *Even-year hunts*. Based on available evidence, the Regional Administrator will determine whether a gray whale that is subjected to a hunting approach, struck and lost, or struck and landed in an even-year hunt is a WNP gray whale, a PCFG whale, or cannot

be identified as either. A whale affirmatively identified as a PCFG whale will be counted accordingly. A whale that is struck and lost and cannot be identified will be presumed to be a PCFG whale in accordance with the proportions specified in § 216.114(a)(2) and will be counted accordingly. As described in the companion biological report (NMFS, 2017), data from recent photo-identification surveys indicate that there is a 40% chance that an encounter with a gray whale in the Makah U&A during December through May would be a PCFG animal, which is at least 180 times greater than the chance of encountering a WNP whale during those months. Therefore, we assume any struck and lost whale is a PCFG whale. The Regional Administrator will notify the Makah Indian Tribe of the identification determination in writing as soon as practicable.

(2) *Odd-year hunts*. Although we do not expect tribal hunters to encounter WNP gray whales in the hunt area during odd-year hunts, this provision provides a mechanism for monitoring and managing for that possibility. Based on available evidence, the Regional Administrator will determine whether a gray whale that is subjected to a hunting approach, struck and lost, or struck and landed in an odd-year hunt is a WNP gray whale or cannot be identified as such. A gray whale that cannot be identified as a WNP gray whale will be counted as a PCFG whale. The Regional Administrator will notify the Makah Indian Tribe of this determination in writing as soon as practicable.

(3) *Training approaches*. All gray whales subjected to training approaches are presumed to be PCFG whales in accordance with the proportions specified in § 216.114(a)(2). Training approaches are likely to be made in canoes and without a chase boat or tribal hunt observer. Therefore, we expect crews to focus on maneuvering the vessel and logging approaches rather than taking photographs. As such, we will instead rely on the presumed proportion of PCFG whales in the hunt area as reported in photo-identification surveys by gray whale researchers.

§ 216.115 Prohibited acts.

The regulations make it unlawful for the Makah Indian Tribe or any enrolled Makah Indian tribal member to engage in a variety of activities:

(a) Take any gray whale, except as authorized by a hunt permit. This subparagraph also describes that any gray whale that is struck without a hunt permit will be counted

toward the limits set out in the regulations and any whale that is landed will be counted as part of the U.S. share of the catch limit established by the IWC.

(b) Hunt a gray whale without a copy of the hunt permit and tribal whaling permit on board.

(c) Make a training approach or training harpoon throw on a gray whale without a copy of the hunt permit and a training logbook on board.

(d) Participate in a gray whale hunt as a whaling captain, rifleman, harpooner, tribal hunt observer, or safety officer, unless the individual has been certified by the Tribe to do so and is named in a tribal certification report.

(e) Violate any provision of any hunt permit.

(f) Hunt or make a training approach on a gray whale calf or an adult gray whale accompanying a calf.

(g) Hunt or strike a gray whale outside the authorized hunting area, unless the whale was first struck within the authorized hunting area.

(h) Hunt, make a hunting or training approach, or make a training harpoon throw on a gray whale after the Tribe has reached any of the established limits on strikes, approaches, unsuccessful strike attempts, struck and lost whales, or landings.

(i) Hunt a gray whale if the limit on PCFG whales that may be struck is less than one, including as a result of accounting for whales struck and lost or landed.

(j) Hunt a gray whale after the Tribe has been notified by the Regional Administrator that it has reached the limit for PCFG whales that may be struck.

(k) Hunt a gray whale after a whale has been landed and before the Tribe has received notification from the Regional Administrator regarding the identity of the landed whale.

(l) Sell, offer for sale, purchase, or barter any gray whale products, except Makah Indian handicrafts that are permanently marked with a distinctive marking approved by the Makah Tribal Council and accompanied by a certificate of authenticity issued by the Makah Tribal Council or its designee.

(m) Possess gray whale products except from whales taken under the authority of this subsection or some other provision of law.

(n) Make a false statement in an application for a hunt permit or in a report required under the regulations.

(o) Transfer or assign a hunt permit issued under this subpart.

(p) Fail to submit reports required by this subpart.

(q) Deny persons designated by NMFS access to landed whales for the purpose of collecting specimen samples.

(r) Fail to provide required permits and reports for inspection upon request by persons designated by NMFS.

(s) Allow anyone other than enrolled Makah Indian tribal members to be part of a whaling crew or to allow anyone other than such members or tribal hunt observers to be in a training vessel making a training approach.

§ 216.116 Applications for hunt permits.

(a) This subsection identifies the information that must be contained in the application from the Tribe for the initial hunt permit from NMFS.

(1) The maximum number of ENP gray whales subjected to hunting or training approaches, struck, landed, and subjected to unsuccessful strike attempts;

(2) A demonstration that the proposed method of taking is humane;

(3) A demonstration that the proposed taking is consistent with these regulations;

(4) A copy of the currently enacted Makah Indian tribal ordinance governing whaling by Makah Indian tribal members; and

(5) A description of the certification process for whaling captains, riflemen, harpooner, tribal hunt observers, and safety officers, including any guidelines or training manuals used by the tribe to certify such persons.

(b) Subsequent applications from the Tribe would require the same information, plus additional information to demonstrate compliance with previous permits.

(1) A description of how the Makah Indian Tribe has complied with the requirements of these regulations and previously issued hunt permits;

(2) A description of previous hunts in which whales were struck and lost and what the Tribe has done to prevent future whales from being lost; and

(3) A description of products obtained from whales landed under the most recent permit, including a description of the disposition of any whale products deemed

unsuitable for use by Makah Indian tribal members. Such products could come from 'stinky' whales like those occasionally encountered in Chukotkan hunts (IWC, 2016) or from whales with contaminant levels that are unsafe for human consumption. In such cases the whales would still count as landed whales. However, with proper evidence and documentation of the unsuitable products, we would not consider such products to be wasted under the MMPA.

(c) The Regional Administrator will notify the Tribe if the application is complete, or return it with an explanation if not complete. The Tribe will have 60 days to modify the application.

(d) Once the application is complete and any required NEPA documentation is available, the Regional Administrator will publish a notice in the **Federal Register**.

§ 216.117 Requirements for monitoring, reporting, and recordkeeping.

(a) In addition to the reporting provisions described in the WCA regulations, the Tribe will:

(1) Ensure a certified tribal hunt observer accompanies each hunt. The tribal hunt observer will record in a hunting logbook the time, date, and location of each approach of a whale or group of whales, each attempt to strike a whale, and each whale struck. For each whale struck, the tribal hunt observer will record whether the whale was landed. If not landed, the tribal hunt observer will describe the circumstances associated with the striking of the whale and estimate whether the animal suffered a wound that might be fatal. For every gray whale approached by the whaling crew, the tribal hunt observer will attempt to take digital photographs.

(2) Ensure that each vessel involved in a training approach has on board a training logbook for recording the date, location, and number of gray whales approached. Each training approach must be reported to the tribal hunt observer within 24 hours.

(3) Maintain hunting and training logbooks and allow NMFS-designated personnel to inspect them.

(4) Ensure each whaling captain allows a NMFS hunt observer to accompany and observe a hunt.

(5) Maintain an official record of all articles of Makah Indian handicraft and provide a copy to NMFS personnel on request.

(6) Ensure that the following reports are filed with the NMFS West Coast Regional Office in Seattle, Washington, by the indicated date:

(i) *Tribal certification report*. Thirty days prior to the beginning of a hunting season, provide a report that includes the names of all tribal hunt observers and enrolled Makah Indian tribal members who have completed the training and been certified to participate in a gray whale hunt as whaling captains, riflemen, harpooners, and safety officers. Names may be added during the hunting season.

(ii) *Incident report*. Upon striking a gray whale, submit an incident report within 48 hours, which may address multiple whales so long as it's submitted within 48 hours of the first whale being struck.

1. Reports involving struck and lost whales must include: the whaling captain's name; the tribal hunt observer's name; the date, location (latitude and longitude, accurate to at least the nearest second), time, and number of strikes and attempted strikes if any; the method(s) of strikes and attempted strikes; an estimate of the whale's total length. The report will describe the circumstances associated with the striking of the whale and estimate whether the animal suffered a wound that might be fatal. The report will include all photographs taken by a tribal hunt observer of gray whales struck and lost by the whaling crew. The report may also contain any other observations concerning the whale(s) or circumstances of the hunt.

2. Reports involving struck and landed whales must include the same information as above, as relevant, plus physical details and photographs of the landed whale. The report must also describe the time to death (measured from the time of the first strike to the time of death as indicated by relaxation of the lower jaw, no flipper movement, or sinking without active movement) and the disposition of all specimen samples collected and whale products, including any whale parts products deemed unsuitable for use by Makah Indian tribal members.

(iii) *Hunt report*. Within 30 days after the end of each hunting season, submit a report that contains the information in the above reports for struck whales and also information regarding approaches and unsuccessful strike attempts, as relevant.

(iv) *Annual approach report.* By January 15 of each year, submit a report that contains the dates, location, and number of whales subjected to hunting approaches,

training approaches, and training harpoon throws during the previous calendar year. The report may also contain any other observations by the Makah Indian Tribe concerning the whales or circumstances of the approaches and training harpoon throws.

(v) *Annual handicraft report*. By September 30 of each year, submit a report describing all handicrafts certified by the Makah Tribal Council or its designee during the previous calendar year. The report must contain specified information intended to aid in the subsequent identification of the handicrafts as authentic.

(vi) NMFS will maintain such reports and make the hunt reports, annual approach reports, and annual handicraft reports available for public review.

(b) After receiving incident reports documenting that 8 or more gray whales have been struck, the Regional Administrator will evaluate the following:

(1) The photo-identification and notification processes, to ensure confidence in NMFS' ability to quickly identify PCFG and WNP whales that may be affected by a tribal whale hunt.

(2) The humaneness of the hunting method, to ensure that any new weapons or techniques are evaluated to help improve the humaneness of the tribal whale hunt.

(c) This subparagraph gives the physical address of the NMFS West Coast Regional office.

§ 216.118 Expiration and amendment.

(a) This provision provides that the regulations will expire after 10 years, unless extended.

IV. Analysis of Effects of Proposed Regulations and Finding of Consistency with MMPA Requirements

Relying on the best available scientific evidence (including information developed in preparing the DEIS), and the statutory factors related to gray whale biology and ecosystem considerations, this section presents the analysis and findings that the proposed regulations (1) are in accord with sound principles of resource protection, as provided in the purposes and policies of the MMPA (section 101(a)(3); 16 U.S.C. §1371(a)(3), and (2) ensure that the taking will not be to the disadvantage the ENP gray whale stock (section 103(a); 16 U.S.C. §1373(a)).

A. Accordance with Sound Principles of Resource Protection

The purposes and policies of the MMPA include maintaining marine mammal stocks as "a significant functioning element in the ecosystem of which they are a part," "maintain[ing] the health and stability of the marine ecosystem," and "obtain[ing] an optimum sustainable population keeping in mind the carrying capacity of the habitat." Thus we considered the effects of the proposed regulations on both the ecosystem and the affected stock and documented those findings in a separate biological report (NMFS, 2017). The conclusions below summarize those findings as they pertain to the effect the proposed regulations would have on (1) the functioning of ENP gray whales as a significant element of their ecosystem, and the related health and stability of that ecosystem; (2) the status of the ENP gray whale stock relative to its OSP range; and (3) the status of PCFG whales relative to a theoretical OSP range.

1. Effect of the proposed waiver and regulations on the role of ENP gray whales in their marine ecosystem, and on the health and stability of that ecosystem

This proposed waiver and regulations are unlikely to have an appreciable effect on any of the ecosystems of which the whales are a part, for the reasons detailed in the biological report and summarized below.

Section 2(2) of the MMPA states that "species and population stocks should not be permitted to diminish beyond the point at which they cease to be a significant functioning element in the ecosystem of which they are a part" (16 U.S.C. §1361(2)). Section 2(6) further provides that "the primary objective of [marine mammal] management should be to maintain the health and stability of the marine ecosystem" (16 U.S.C. §1361(6)). The MMPA does not specify a geographic scale for identifying marine mammal ecosystems.

Because of their long migration route, ENP gray whales occupy multiple large marine ecosystems at different times. The smallest marine ecosystem identified in the literature that includes the coastal portion of the Makah Tribe's U&A is the northern California Current ecosystem (Longhurst, 2006; Sherman and Alexander, 1989).

The entire range of the ENP gray whale stock is vast and crosses many large marine ecosystems, including the Pacific Central American Coast, California Current, Gulf of Alaska, and Bering and Chukchi Seas (Longhurst, 2006; Sherman and Alexander,

1989). The proposed regulations could result in the removal of up to 2.5 whales annually, on average, from the Makah Tribe's U&A. This level of removal is an order of magnitude less than the natural variability of the population, which numbers between 19,000 and 23,000 individuals, and would not have an appreciable effect on the functioning of ENP gray whales as an element of these large ecosystems, or on the health of the ecosystems themselves. To the extent approaches and attempted strikes affect whales, those actions would do so in a tiny local area of one of these large ecosystems and would therefore be unlikely to result in a change in gray whale use of any of these large ecosystems.

The proposed waiver will also not result in gray whales ceasing to be a significant functioning element of the smaller northern California Current ecosystem or the environment of the northern Washington coast for two reasons. First, these habitats are shaped by dynamic, highly energetic, large-scale processes and the role of ENP gray whales in structuring these habitats is limited. Moreover, the Tribe's proposal is unlikely to result in an appreciable decrease in the numbers of whales present in the northern California Current ecosystem or the northern Washington coastal environment. The analysis supporting these conclusions is presented in the DEIS (Section 4.3, Marine Habitat and Species, and Section 4.4.3.2, Alternative 2), and discussed further in the Biological Report.

Based on the analysis presented in the Biological Report, we conclude that the proposed waiver and regulations would not cause ENP gray whales "to cease to be a significant functioning element in the ecosystem of which they are a part." To summarize:

- Gray whales annually traverse five large marine ecosystems;
- Average annual removal by Makah hunters of up to 2.5 ENP gray whales from a population of approximately 21,000 individuals would not have an appreciable effect on the functioning of ENP gray whales in any of these large marine ecosystems or on the ecosystems themselves;
- The northern California current ecosystem is the smallest recognized marine ecosystem that encompasses the area of the proposed hunt;

- ENP gray whales play a limited role in structuring the northern California current ecosystem, which is shaped by dynamic, highly energetic, large-scale ecosystem processes;
- There will continue to be approximately 21,000 ENP gray whales migrating along the coast through the northern California current ecosystem, thus the functioning of ENP gray whales in that ecosystem will not change;
- At the scale of the northern Washington coast (the coastal portion of the Makah U&A), PCFG whales play a limited role in structuring the habitat, which is shaped by dynamic, highly energetic, large-scale ecosystem processes;
- There are likely to continue to be non-PCFG whales in the Makah Tribe's U&A and the rest of the PCFG range during the summer/fall feeding period;
- The number of PCFG whales that may be killed in a hunt under the primary strike limits does not exceed the current PBR. The additional protection afforded by the adjusted PBR limit that accounts for other sources of human-caused mortality will ensure that the PBR of PCFG gray whales is not exceeded. By avoiding local depletion, the proposed waiver and regulations will allow ENP gray whales to continue being a significant functioning element of their ecosystem during the summer feeding period in the PCFG range;
- There is no evidence to suggest that a hunt, as carried out under the proposed regulations, would cause gray whales to abandon the Tribe's U&A as a summer feeding area and thus interfere with their ability to continue being a significant functioning element of their ecosystem during the summer feeding period in the PCFG range.

2. Effect of the proposed waiver and regulations on the status of the ENP gray whale stock relative to OSP and on the distribution of ENP gray whales in the PCFG feeding area

The proposed waiver and regulations are unlikely to have an appreciable effect on the ENP gray whale stock's abundance and its status relative to OSP. They are also unlikely to result in ENP gray whales abandoning any area within the PCFG range or otherwise changing their distribution. The proposal would result in a maximum of 3

strikes/deaths per even year and 2 strikes/deaths per odd year. Three animals represent 0.014 percent of the population of 21,000 animals. This very small level of mortality is also a small fraction of the annual variability in the stock's abundance (~16,000-21,000 animals since the mid-1990s). This small number of removals would not have an appreciable effect on ENP abundance or OSP status. Moreover, any portion of the IWC quota for ENP gray whales that is not harvested by the Makah Tribe is likely to be harvested by Chukotkan hunters, based on recent practice and as articulated in a joint U.S-Russia monitoring agreement (Fominykh and Smith, 2017). Thus, the proposed waiver and regulations are unlikely to have a net effect on ENP gray whale stock abundance or OSP status.

The proposed waiver and regulations are unlikely to have an appreciable effect on the distribution of ENP gray whales through disturbance of migrating whales or feeding whales. Even-year hunts and training exercises conducted from December through May would encounter mostly migrating whales that must pass through the ocean portion of the Makah U&A during their lengthy north- and southbound transits. These whales are slow but steady swimmers that often exhibit directed swimming and predictable breathing and dive patterns (Jones and Swartz, 2002). Whales travelling at 3-6 miles per hour (5-10 km per hour; Jones and Swartz, 2002) would be able to transit the widest portion of the Makah U&A (approximately 32 miles or 51 km north-south) in several hours. During migration, gray whales generally remain close to shore (especially where the continental shelf is narrow) and the best available information indicates that most northbound and southbound whales migrate within 27 miles (43 km) of shore (Pike, 1962; Green et al., 1992; Green et al., 1995). Some researchers have suggested that gray whales may alter their migration distance from shore in response to vessels and other human activity (Rice, 1965; Hubbs and Hubbs, 1967; Wolfson, 1977; Schulberg et al., 1989; Mate and Urbán-Ramirez, 2003), however the ENP population has also demonstrated a tolerance and resiliency to human activities as reflected by the successful recovery of the population from over-exploitation (Cowles et al., 1981; Moore and Clarke, 2002).

During even-year hunts, adverse weather conditions in the Makah U&A in winter and early spring coupled with shorter periods of daylight would keep most hunts and training exercises close to shore and of shorter duration than during the summer. Hunts

also would be localized and have only a few vessels associated with the hunt (generally 5 or less). Chukotkan hunters typically use a similar number of motorized vessels to pursue individual whales but use significantly more harpoons and bullets – approximately 9 harpoons and 70 bullets per whale in recent years (IWC, 2016). Since the 1950s, Chukotkan hunters have landed, on average, over 100 ENP gray whales per year (Borodin et al. 2012), and an average of 126 whales per year during the past decade (IWC, 2016). During that decade the majority of whales have consistently been killed in the Chukotsky region with no apparent change in the distance offshore that whales are killed (IWC, 2016). Given these considerations as well as the extremely limited number of whales that could be harvested during an even-year hunt, it is reasonable to expect that most of the roughly 20,000 ENP whales would be subject to little or no hunting pressure in the Makah U&A. Those animals subject to hunting and hunt training activities would experience them as temporary and localized nearshore events within the vast area of the Pacific Ocean. It is therefore reasonable to expect that whales traveling through the Makah U&A during the migration season are unlikely to change their migration patterns and avoid the area.

Odd-year hunts during July through October would likely encounter whales exhibiting feeding behavior, including milling in small, localized areas close to shore and typically within 3 miles (5 km) of shore (Brueggeman et al., 1992; Darling, 1984; Sumich, 1984; Mallonée, 1991; Dunham and Duffus, 2001; Scordino et al., 2011). Some animals have been seen clustering relatively far offshore (12-16 miles or 19-26 km) but these sightings are considered unusual (Calambokidis et al., 2009). During summer hunts and training exercises most whales would be found in the PCFG range from northern California to northern Vancouver Island, within which the Makah U&A is a relatively small portion (less than 5 percent of the coastline in the PCFG range). Whales are known to focus on specific areas within this range but also move extensively in search of food (Calambokidis et al., 1999; Calambokidis et al., 2004; Calambokidis et al., 2014). Odd-year hunts would result in fewer whales being pursued or struck (1 or 2 per year) than in even-year hunts (up to 3 per year). The proposed regulations would also limit the number of approaches on PCFG whales.

As noted above, despite hundreds of whales being hunted and killed in Chukotkan

hunts (many of which are killed during the summer months) there has not been a discernible change in the availability and location of hunted whales (IWC, 2016). Although the proposed regulations allow for over 350 approaches on gray whales each year, most of these approaches would likely involve paddle-driven canoes that, compared to the motorized vessels used in Chukotkan hunts, have much less speed and maneuverability to pursue and maintain close contact with approached whales. Given these considerations as well as the extremely limited number of whales that could be harvested under the proposed regulations, it is reasonable to expect that those animals exposed to hunting and hunt training activities within the Makah U&A would experience a hunt-related encounter as a temporary and localized nearshore event within the expansive PCFG range between northern California and northern Vancouver Island. As a result it is unlikely that PCFG whales would abandon the Makah U&A.

Because the proposed regulations will not interfere with ENP gray whales continuing to be a significant functioning element in any of the ecosystems of which they are a part, will not appreciably affect the status of the ENP gray whale stock relative to its OSP, and will not affect the distribution of the ENP gray whale stock, we conclude that the proposed regulations are in accordance with sound principles of resource protection.

3. Effect of the proposed waiver and regulations on the management goals of avoiding local depletion and to limit the risk of whales being disturbed by non-lethal hunt-related interactions.

Through hunt-related mortality, the proposed regulations may reduce the abundance of PCFG whales, thereby reducing the abundance of ENP gray whales in the PCFG feeding area, depending on the rate at which new whales recruit to the PCFG. Genetic simulations indicate that a plausible range of external recruitment is greater than 1 and fewer than 10 whales per year, with 4 whales per year being most consistent with empirical data (Lang and Martien, 2012) and nearly twice the number of whales that may be struck annually under the proposed regulations. A tribal hunt under the proposed regulations would not, however, cause PCFG whales to fall below their theoretical OSP range, or fail to achieve their theoretical OSP range, because, as described above under "Regulating Impacts on PCFG Whales," the strike limits in the proposed regulations would result in a mortality level for PCFG whales that is well below the adjusted PBR

limit for PCFG whales under current conditions. If conditions changed and caused a decrease in the adjusted PBR limit (for example, a decline in PCFG abundance or an increase in other sources of human-caused mortality) the new adjusted PBR limit would ensure that hunt-related mortality, combined with other sources of human-caused mortality, did not exceed the PBR level.

Because the PCFG may warrant consideration as a distinct stock in the future, the SAR (Carretta et al. 2015) calculates a separate PBR for these whales to "assess whether levels of human-caused mortality are likely to cause local depletion." As described above, we have defined the management goal of "avoiding local depletion" to mean that the hunting regime would not contribute to PCFG abundance being below its theoretical OSP range. As long as total human-caused mortality remains below PBR, it should not prevent a marine mammal stock from achieving or maintaining its OSP level. In some cases, if a stock is declining it is possible that mortality levels as low as PBR could be a cause for concern (e.g., stock declines were cited as one of the reasons for NMFS denial of an import permit for beluga whales in the Georgia Aquarium decision (NMFS, 2013)). However, the PCFG is not a recognized stock and has remained relatively stable at about 200 animals since 2003, and the proposed regulations include an adjusted PBR limit that takes into account human-caused mortalities as well as changes in PCFG abundance. Thus, we conclude that mortality from a tribal hunt, combined with other sources of human-caused mortality, is unlikely to result in local depletion of whales in the PCFG feeding area.

The proposed regulations also include measures aimed at limiting the potential for and the effect of non-lethal interactions between hunters and whales. Under the proposed regulations, Makah hunters could approach 3,530 whales during hunts and training exercises over the 10 years of the regulations. Gray whales throughout the North Pacific are subject to a considerable number of vessel approaches each year, including whale-watching operations in the U.S., Canada, and Mexico, and pursuit by Chukotkan hunters in Russia. Such approaches are likely to elicit a range of reactions from whales showing no response to whales showing more pronounced and aberrant behaviors that may include diving, fluke slapping, or changing direction. Such reactions are generally short term and of a low impact and not likely to disrupt the migration, breathing, nursing, feeding,

breeding, or sheltering behavior of marine mammals (NMFS, 2004).

Because the proposed waiver and regulations would not prevent PCFG whales from maintaining or reaching the theoretical OSP range of the group, the proposed waiver and regulations are unlikely to result in local depletion. The limits on approaches and unsuccessful harpoon attempts will limit the potential for a tribal hunt and associated training to disturb ENP gray whales.

4. Effect of the proposed waiver and regulations on the WNP gray whale stock

The Makah Tribe did not request a waiver of the MMPA take moratorium for WNP whales, and could not because there is no international authorization and the WNP stock is endangered and therefore classified as depleted. To date it has not been determined whether or not this stock is at OSP. As noted previously, section 101(a)(3)(B) prohibits a waiver for a depleted stock (16 U.S.C. §1371(a)(3)(B)). Even though the WNP is not the subject of this request, because there is evidence of WNP gray whales in the hunt area, we consider the risk that a Makah tribal hunt for ENP gray whales under the proposed waiver and regulations would pose to WNP gray whales. In addition, prior to issuing final regulations, NMFS would analyze under section 7(a)(2) of the ESA the potential impacts on WNP gray whales from a proposed hunt for ENP whales.

NMFS does not have formal guidance on evaluating potential risks to other marine mammals in the context of a request for a waiver to take marine mammals from a different stock. There is one federal court decision from 1988 (*Kokechik* v. *Secretary of Commerce* 839 F.2d 795 (D.C. Cir 1988)) examining a somewhat related situation. In *Kokechik*, the court was asked to consider whether the MMPA allowed NMFS to grant a waiver to a foreign entity to allow the taking of marine mammals of a specified stock, where the facts demonstrated that the underlying activity (gillnet fishing) would also cause the lethal take of marine mammals from a depleted stock, for which an optimum sustainable population had not been determined. Because the MMPA did not allow NMFS to authorize any take from the depleted stock under those circumstances, and because the lethal taking was a 'certainty,' the court interpreted the MMPA as precluding issuance of the permit. The court distinguished the facts at issue from a potential scenario where there would be only 'a very remote possibility' of take of other marine mammals, stating that the MMPA 'may not prohibit issuance of a permit' in those circumstances

(*Kokechik*, 839 F.2d at 801). Although not controlling here because, unlike the foreign applicant in *Kokechik*, the Makah Tribe is eligible to seek MMPA authorization, we nevertheless find the *Kokechik* decision informative in evaluating the potential risk of lethal take of WNP whales.

To evaluate the risk to WNP gray whales we consider both: (1) the probability of encountering a WNP gray whale (exposure) during an ENP gray whale hunt; and (2) the likelihood that an encounter would disturb, injure or kill a WNP whale or disrupt its behavioral patterns. To address the first question and to reduce the risk of encountering WNP gray whales during an ENP hunt, the regulations include several important restrictions: (1) hunting would only be allowed every other year (proposed for even-numbered years) during the migration season when WNP gray whales may be present and; (2) only three whales could be struck in an even year hunt; and (3) if a WNP is struck in any year the hunt will cease.

To address the second question we note that the MMPA defines take broadly to include "harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal" (16 U.S.C. 1362(13)). Harass in turn is defined as any act that has the potential to injure a marine mammal or disturb a marine mammal by causing disruption of behavioral patterns (16 U.S.C. 1362(18(A)). Striking a WNP gray whale has the potential to kill or injure it resulting in "take." An unsuccessful strike attempt on a WNP gray whale could disturb it by disrupting behavioral patterns constituting harassment or "take." An approach by a tribal whaling crew on a WNP gray whale might or might not constitute a "take," depending on the reaction of the whale to the approach (that is, depending on whether the animal is disturbed to a degree that qualifies as harassment). As noted below, when issuing permits under the MMPA for activities involving vessel approaches (typically for motorized research vessels) on large cetaceans, NMFS generally places limits on the number of approaches using a specific distance usually less than 100 yards. The draft regulations employ this 100-yard provision in the definition for hunting and training approaches and, moreover, place specific limits on the number of such approaches.

With hunting at the time of year when WNP gray whales may be present limited to every other year and strikes limited to 3 (and thus limited to 15 over the 10-year

regulation period), there is about a 3 percent probability of hunters encountering and striking one WNP gray whale over the 10 years of the regulations (Moore and Weller, 2017). This probability is the most likely point estimate; the 95 percent confidence interval ranges from 0.2 percent to 7.8 percent. With strike attempts during even-year hunts limited to 18, there is about a 17 percent probability (95 percent confidence interval range from 0.9 percent to 39 percent) that one WNP whale would be subjected to an unsuccessful strike attempt over the 10 years of the regulations (Moore and Weller, 2017). Stated another way, the most likely point estimates indicate that one in thirty 10-year hunt periods (i.e., one year out of 300) would result in an individual WNP gray whale being struck by Makah hunters, and one animal would be subjected to an unsuccessful strike attempt about every 57 years, if the Tribe made the maximum number of strikes attempts allowed in even-year hunts and if ENP and WNP population sizes and migration patterns remained constant (Moore and Weller, 2017). If the 95 percent confidence intervals are considered, the expectation is that one WNP whale would be struck out of every 128 years of hunting and one WNP whale would be subjected to an unsuccessful strike attempt every 26 years. The proposed regulations would also limit the number of approaches to 353 in any year, which would result in the expected approach of 8 WNP gray whales over the 10 years of the regulations (Moore and Weller, 2017).

We conclude that the risk of a lethal take for WNP gray whales posed by the proposed regulations is minimal, even under the *Kokechik* standard, for the following reasons. The killing of a single WNP whale would be a serious concern for this endangered stock at its current status. Under the proposed regulations, the probability of such an encounter is about 3 percent over 10 years, which is equivalent to one encounter in 300 years (if the maximum number of strikes are made). This level of risk is far from the certainty of take at issue in *Kokechik*. Additionally, and importantly, a 300-year time period stretches into several gray whale generations as well as human generations making predictions about the status of the population and the potential impacts on the population extremely attenuated. Accordingly, we find that the risk of a lethal taking of a WNP is remote. In addition, such a level of mortality is well below the sustainable level of human-caused mortality for WNP gray whales reported in the current SAR and calculated using the PBR method (currently 0.06 WNP gray whales per year, or approximately 1

whale every 17 years).

Making an unsuccessful strike attempt on a WNP gray whale is also a concern but would not result in death or injury and would likely elicit a response similar to that observed in whales that are tagged or biopsied for research purposes (DEIS Subsection 4.4.3.3.2, Change in Abundance and Viability of the WNP Gray Whale Stock). The best available scientific evidence suggests that such encounters would be unlikely to have a lasting effect on the health of the affected animal. Although the probability of such an encounter (once in 57 years) is greater than the probability of a successful strike (once in 300 years), it too is far from the certainty or "inevitable" lethal take at issue in *Kokechik*. We consider this risk to be slight, as well, because there is no mortality associated with unsuccessful strike attempts, impacts associated with such an event are temporary, and because the interval of 57 years is also multiple gray whale generations.

Activities that employ vessel approaches on large whales are regularly reviewed by NMFS under the MMPA. When issuing permits under the MMPA, NMFS generally limits the number of approaches within defined distances (typically less than 100 yards for large cetaceans) because of the potential for such approaches within those limits to affect or disrupt whale behavior. For example, NMFS Permit #15569 for ENP gray whales (77 FR 35657, June 14, 2012) authorized 5,000 approaches of gray whales over the course of 5 years. While this is a large number of authorized approaches, the NEPA analysis prepared for that permit found that approaches during research have not been shown to result in long-term or permanent adverse effects on individual animals regardless of the number of times the activity occurs because the frequency and duration of the activities allows adequate time for animals to recover from any potential adverse effects such that additive or cumulative effects of the action on its own are not expected. That analysis further notes that no measurable effects on population demographics are anticipated because any sub-lethal effects are expected to be short-term, and the proposed action is not expected to result in mortality of any animals.

Based on the best available information, gray whales would likely display a range of reactions to hunting- or training-related approaches, and it is uncertain whether any of the approaches would disrupt normal whale behavior. However, to be precautionary we believe it is reasonable to conclude that some of those approaches have the potential to

disrupt whale behavior, so the regulations limit the number of approaches. It is also reasonable to conclude that it is unlikely that any of the estimated 8 approaches on WNP whales in the context of more than 3,500 approaches estimated to occur over the 10-year span of these regulations would in and of themselves elicit a behavioral response that rises to the level of potential harassment. The geographical area where the approaches might occur is not known to be biologically important for WNP gray whales and the very limited number of likely approaches on WNP whales does not create the magnitude, frequency and duration of encounter that experience suggests might cumulatively disrupt their behavior. Actual approach distances are not possible to predict. However, as was the case in the Tribe's 1999 and 2000 hunts, even-year hunts would occur during a time when gray whales are actively migrating (as opposed to feeding and breeding), which may further limit close and sustained approaches on gray whales and chronic, repeated, or cumulative exposure to individual whales. Also, some of the approaches could be made during training exercises involving only paddle-driven canoes that have limited ability to pursue and maintain close contact with whales that are actively migrating. Consequently, although there is a likelihood that over the course of the 10-year waiver period 8 WNP gray whales would be approached within 100 yards, we consider any risks to such whales to be slight because there is no mortality associated with approaches, some approaches may be so far away as to be undetectable by the whales, and any reactions by approached whales would likely be temporary and not interfere with the whales' active migration through an area not used for breeding or feeding.

Under the proposed regulations, there is a 3 percent probability of killing and an 18 percent probability of an unsuccessful strike attempt on at least one WNP gray whale and a likelihood of approaching 8 WNP gray whales over the 10-year period of the regulations, which translates to a probability of a Makah tribal hunt killing one WNP gray whale every 300 years, attempting to strike one WNP gray whale every 57 years, and approaching on average of less than one WNP whale per year over 10 years. We find that this constitutes an acceptable level of risk for management purposes and under the MMPA.

B. The Proposed Regulations Will Not Disadvantage the ENP Gray Whale Stock

Because the proposed regulations will not appreciably affect the status of the ENP

gray whale stock relative to its OSP, we conclude that the proposed regulations will not disadvantage the ENP gray whale stock.

V. Required Procedures and Statements Related to the Intention to Issue Regulations

Section 103(d) of the MMPA requires that regulations regarding the taking of marine mammals be made on the record after opportunity for an agency hearing (16 U.S.C. §1373(d)).

Notice of Hearing: Regulations at 50 CFR 228 contain detailed requirements for the procedures for conducting an agency hearing on the proposed regulations to limit the harvest. People interested in participating in the hearing are advised to review these procedural regulations. The procedures require specific information to be included in the notice of the hearing, and that information follows:

(1) The nature of the hearing: The purpose of the hearing is to allow parties affected by the agency's proposed regulations to present additional testimony and evidence for inclusion in the administrative record. At the conclusion of the hearing and after consideration of the whole record, the Administrative Law Judge shall make a recommendation to the Secretary regarding adoption of the regulations.

(2) The place and date of the hearing: (see ADDRESSES and DATES).

(3) The legal authority for the hearing: The hearing is held under the authority of section 103 of the MMPA (16 U.S.C. 1373) and implementing regulations (50 CFR part 228).

(4) The proposed regulations and statements required by MMPA section 103(d) (16 U.S.C. 1373(d)): See the proposed regulatory text at the end of this document and the statements below.

A. A statement of the Estimated Existing Levels of the Species and Population Stocks of the Marine Mammal Concerned.

ENP gray whales are the subject of the proposed waiver and regulations and are recognized as a distinct population stock under the MMPA (Carretta et al., 2015). The most recent population assessment by Durban et al. (2013) estimates the abundance of the ENP gray whale stock at 19,230 to 22,900 whales, with a point estimate of 20,990. The

minimum abundance, used for calculating PBR, is 20,125 (Carretta et al., 2015).

NMFS does not currently recognize further stock structure within the ENP gray whale stock. We have said, however, that the PCFG may warrant consideration as a stock in the future and the SAR process will continue to evaluate any relevant information on this issue. The most recent assessment of PCFG whales (Calambokidis et al., 2014) estimates its abundance at 209, with a minimum abundance of 197. The latest NMFS stock assessment report (Carretta et al., 2015) uses this minimum abundance to calculate a PBR for PCFG whales of 3.1 animals per year.

B. A Statement of the Expected Impact of the Proposed Regulations on the Optimum Sustainable Population of Such Species or Population stock.

The proposed regulations will not appreciably affect the ENP gray whale stock relative to its OSP. The regulations would at most allow the Tribe to harvest 3 whales in even years and 1 whale during odd years, for a maximum total of 20 whales over 10 years. Total mortality of ENP whales could equal 25 whales over 10 years (as a result of some whales being struck and lost during the odd-year hunting season). The ENP stock numbers approximately 21,000 whales, and 25 whales over 10 years would have no appreciable effect on the population. The IWC catch limit for ENP whales equates to 124 whales per year, most of which are harvested by Chukotkan Natives. It is highly likely that any whales not harvested by the Makah Tribe would be harvested by Russian natives, as has been the case over the past several years. Thus the regulations would have no effect on the number of ENP whales harvested.

C. A Statement Describing the Evidence Before the Agency that Forms the Basis for the Regulations.

In proposing the waiver and regulations, we relied on the references cited in the March 2015 Draft Environmental Impact Statement on the Makah Tribe Request to Hunt Gray Whales and incorporate those here by reference. We also list relevant references to the scientific literature in a separate biological report (NMFS, 2017), which identifies other and more recent studies not included in the DEIS.

D. Any Studies or Recommendations Made By or For the Agency or the Marine Mammal Commission that Relate to the Establishment of the Regulation.

Relevant studies include those on gray whale abundance and stock structure (Punt and Wade, 2012; Weller et al., 2013; Calambokidis et al., 2014), estimation of potential biological removal levels and human caused mortalities (Carretta et al., 2015), and probabilities of encountering WNP gray whales (Moore and Weller, 2017). Relevant recommendations include those by the MMC (see *Written advice received from the MMC*, below).

Issues of fact which may be involved in the hearing: Public comments related to the DEIS and comments from the MMC indicate that there may be several disputed facts regarding the gray whale populations subject to the proposed regulations. Among the potential factual issues are the following:

(1) Whether the regulations disadvantage the ENP gray whale stock;

(2) Whether the regulations adequately address the risk of taking whales from the WNP gray whale stock; and

(3) Whether the regulations adequately address the risk of negative impacts on PCFG gray whales.

Draft Environmental Impact Statement (DEIS): The DEIS is available online and may be viewed upon request (see ADDRESSES).

Written advice received from the MMC: The following summarizes a letter sent to NMFS by the MMC with recommendations specific to proposed regulations.

Letter dated xxx, 2017

1. xxx

2. xxx

[NOTE: To be filled in following consultation with the Marine Mammal Commission]

VI. Classification

- *NEPA*

NMFS has prepared a DEIS under the requirements of NEPA. NMFS believes that a limited waiver of the MMPA take moratorium along with federally-approved hunt regulations for gray whales constitutes a major action subject to the requirements of NEPA. Therefore, these proposed regulations will not be finalized until a final Environmental Impact Statement has been issued and a Record of Decision is made.

- *Paperwork Reduction Act*

This proposed rule does not contain a collection-of-information requirement for purposes of the Paperwork Reduction Act of 1980.

- *ESA [Under development]*
- *Executive Order 12866—Regulatory Planning and Review [Under development]*
- *Regulatory Flexibility Act [Under development]*
- *Executive Order 12898—Federal Actions to Address Environmental Justice in Minority Populations and Low-Incomed Populations [Under development]*
- *Consultation with State and Local Government Agencies [Under development]*
- *Executive Order 13084-Consultation and Coordination with Indian Tribal Governments [Under development]*

List of Subjects in 50 CFR Part 216

Administrative practice and procedure, Exports, Fish, Imports, Indians, Labeling, Marine mammals.

Dated: _____

[Signature block]

For the reasons set out in the preamble, 50 CFR part 216 is proposed to be amended as follows:

PART 216—REGULATIONS GOVERNING THE TAKING AND IMPORTING OF MARINE MAMMALS

1. The authority citation for part 216 continues to read as follows:

Authority: 16 U.S.C. 1361 et seq., unless otherwise noted.

2. Subpart J is added to read as follows:

Subpart J—Taking of Eastern North Pacific (ENP) Gray Whales (*Eschrichtius robustus*) by the Makah Indian Tribe off the Coast of Washington State

§ 216.110 Purpose.

§ 216.111 Scope.

§ 216.112 Definitions.

§ 216.113 Take authorizations.

§ 216.114 Accounting and identification of gray whales.

§ 216.115 Prohibited acts.

§ 216.116 Applications for hunt permits.

§ 216.117 Requirements for monitoring, reporting, and recordkeeping.

§ 216.118 Expiration and amendment.

[Note: The draft regulations are provided to the MMC as a separate document during this part of the review process. The regulations will be inserted here in the FRN prior to publication.]

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[Note: These will not be published with the FRN but will be posted on the NMFS website]

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Subpart J—Taking of Eastern North Pacific (ENP) Gray Whales (*Eschrichtius robustus*) by the Makah Indian Tribe off the Coast of Washington State

§ 216.110 Purpose.

The purpose of this subpart is to establish regulations governing the take of whales from the eastern North Pacific (ENP) gray whale (*Eschrichtius robustus*) stock by the Makah Indian Tribe and its enrolled members in accordance with the Secretary's determination to issue a limited waiver of the MMPA take moratorium pursuant to 16 U.S.C. 1371(a)(3).

§ 216.111 Scope.

This subpart authorizes only the taking of ENP gray whales and only by enrolled members of the Makah Indian Tribe.

§ 216.112 Definitions.

In addition to the definitions provided in the MMPA, for purposes of this subpart, the following definitions apply:

(a) "Bonilla-Tatoosh Line" means the line running from the western end of Cape Flattery (48°22'53" N. lat., 124°43'54" W. long.) to Tatoosh Island Lighthouse (48°23'30" N. lat., 124°44'12" W. long.) to the buoy adjacent to Duntze Rock (48°28'00" N. lat., 124°45'00" W. long.), then in a straight line to Bonilla Point (48°35'30" N. lat., 124°43'00" W. long.) on Vancouver Island, British Columbia.

(b) "Calf" means any gray whale less than 1 year old.

(c) "Enrolled member" or "member" of the Makah Indian Tribe means a person whose name appears on the membership roll maintained by the Makah Tribal Council.

(d) "ENP gray whale" means a member of the eastern North Pacific stock of gray whales (*Eschrichtius robustus*), as defined in the NMFS stock assessment report.

(e) "Even-year hunt" means a hunting season spanning six consecutive months from December 1 in an odd-numbered year to May 31 in the following even-numbered year.

(f) "Gray whale" means a member of the species *Eschrichtius robustus*.

(g) "Harpooner" means a member of the Makah Indian Tribe who has been certified by the Tribe as having demonstrated the qualifications commensurate with the duties and responsibilities of harpooning a gray whale.

(h) "Humane" has the same meaning as contained in 50 CFR § 216.3.

(i) "Hunt" and "hunting" mean to pursue, strike, harpoon, shoot, or land a gray whale under a hunt permit issued under § 216.113(a), or to attempt any such act, but does not include hunting approaches, training approaches, or training harpoon throws. A "hunt" means any act of hunting.

(j) "Hunt permit" means a permit issued by NMFS in accordance with 16 U.S.C. 1374 and this subpart that authorizes hunting, hunting approaches, training approaches, and training harpoon throws.

(k) "Hunting approach" means to cause, in any manner, a vessel to be within 100 yards of a gray whale during a hunt.

(l) "Land" and "landing" mean bringing a gray whale or any products thereof onto the land in the course of hunting.

(m) "Makah Indian handicrafts" means articles made by a member of the Makah Indian Tribe that are obtained pursuant to a license issued under the Whaling Convention Act and implementing regulations at 50 CFR part 230 and (1) contain any nonedible products of an ENP gray whale, and (2) are significantly altered from their natural form and which are produced, decorated, or fashioned in the exercise of traditional Makah Indian handicrafts without the use of pantographs, multiple carvers, or similar mass copying devices. Makah Indian handicrafts include, but are not limited to, articles that are carved, beaded, drawn, or painted.

(n) "Makah Indian Tribe" or "Tribe" means the Makah Indian Tribe of the Makah Indian Reservation as described in the list of federally recognized Indian tribes maintained by the U.S. Department of the Interior.

(o) "NMFS hunt observer" means a person designated by NMFS to accompany and observe a hunt.

(p) "Odd-year hunt" means a hunting season spanning four consecutive months from July 1 to October 31 in an odd-numbered year.

(q) "Pacific Coast Feeding Group (PCFG) gray whale" or "PCFG whale" means an individually identifiable ENP gray whale observed in at least 2 years between June 1 and November 30 in the eastern North Pacific between 41° N. lat. and 52° N. lat., excluding areas in Puget Sound, and entered into a photo-identification catalog(s) recognized by the Regional Administrator.

(r) "Potential biological removal (PBR) level" has the same meaning as contained in 50 CFR § 229.2.

(s) "Recordkeeping" and "reporting" mean the collection and delivery of photographs, biological data, harvest data, and other information regarding activities conducted under the authority of these regulations.

(t) "Regional Administrator" means the Regional Administrator of NMFS for the West Coast Region.

(u) "Rifleman" means a member of the Makah Indian Tribe who has been certified by the Tribe as having demonstrated the qualifications commensurate with the duties and responsibilities of shooting a gray whale.

(v) "Safety officer" means a member of the Makah Indian Tribe who has been certified by the Tribe as having demonstrated the qualifications commensurate with the duties and responsibilities of evaluating hunt conditions including but not limited to visibility, target range and bearing, and sea condition.

(w) "Stock assessment report" means the most recent and final stock assessment report issued by NMFS under 16 U.S.C. 1386.

(x) "Strike" or "struck" means to cause a harpoon or other device to penetrate a gray whale's skin or an instance in which a gray whale's skin is penetrated by a harpoon or other device while hunting.

(y) "Struck and lost" refers to a gray whale that is struck but not landed.

(z) "Take" has the same meaning as contained in 50 CFR § 216.3.

(aa) "Training approach" means to cause, in any manner, a training vessel to be within 100 yards of a gray whale.

(bb) "Training harpoon throw" means an attempt to contact a gray whale with a blunted spear-like device that is incapable of penetrating the skin of a gray whale.

(cc) "Training vessel" means a canoe or other watercraft used to train for a hunt that does not carry weapons ordinarily used by a harpooner or rifleman to strike a gray whale.

(dd) "Tribal hunt observer" means a tribal member or representative designated by the Tribe who has been certified by the Tribe as having demonstrated the qualifications commensurate with the duties and responsibilities of monitoring and reporting on a hunt.

(ee) "U&A" or "Makah Indian Tribe's U&A" means the Tribe's usual and accustomed fishing grounds, which area consists of the United States waters in the western Strait of Juan de Fuca west of 123°42'17" W. long. and waters of the Pacific Ocean off the mainland shoreline of the Washington coast north of 48°02'15" N. lat. (Norwegian Memorial) and east of 125°44'00" W. long.

(ff) "WNP gray whale" means a member of the western North Pacific stock of gray whales (*Eschrichtius robustus*) as defined in the NMFS stock assessment report and entered into a photo-identification catalog(s) recognized by the Regional Administrator.

(gg) "Whaling captain" means a member of the Makah Indian Tribe who has been certified by the Tribe as having demonstrated the qualifications commensurate with the duties and responsibilities of leading a hunt and is authorized by the Makah Indian Tribe to be in control of the whaling crew.

(hh) "Whaling crew" means those members of the Makah Indian Tribe taking part in a hunt under the control of a whaling captain and accompanied by a tribal hunt observer.

§ 216.113 Take authorizations.

(a) The Regional Administrator may issue hunt permits to the Makah Indian Tribe authorizing hunting of ENP gray whales, as well as hunting approaches, training approaches and training harpoon throws by enrolled members in accordance with 16 U.S.C. 1374 and the requirements of this subpart.

(1) *Hunt permit duration.* The duration of the initial hunt permit may not exceed three years from its effective date, and thereafter the duration of a hunt permit may not exceed five years.

(2) *Hunting seasons.* Even-year hunts and hunting approaches will only be authorized from December 1 of an odd-numbered year through May 31 of the following even-numbered year. Odd-year hunts and hunting approaches will only be authorized from July 1 through October 31 in an odd-numbered year.

(3) *Training period.* Hunt permits may authorize training approaches and training harpoon throws in any month.

(4) *Limits on the number of gray whales approached, subjected to unsuccessful strike attempts, struck, struck and lost, and landed.*

(i) *Approaches.* A hunt permit may authorize no more than 353 hunting or training approaches each calendar year of which no more than 142 of such approaches may be on PCFG whales.

(ii) *Unsuccessful strike attempts*. A hunt permit may authorize no more than 18 unsuccessful strike attempts in an even-year hunt and 12 strike attempts in an odd-year hunt. Each training harpoon throw will count as an unsuccessful strike attempt.

(iii) *Strikes.* A hunt permit may authorize no more than three strikes in an even-year hunt and no more than two strikes in an odd-year hunt. In an even-year hunt, no more than one strike may be authorized within the 24-hour period commencing at the time of strike.

(iv) *Struck and lost.* A hunt permit may authorize no more than three ENP gray whales to be struck and lost in any calendar year.

(v) *Landings.* A hunt permit may authorize no more than three ENP gray whales to be landed in an even-year hunt and no more than one ENP gray whale to be landed in an odd-year hunt; the number of ENP gray whales that the hunt permit may authorize to be landed in any calendar year will not exceed the number agreed between the United States and the Russian Federation as the U.S. share of the catch limit established by the International Whaling Commission.

(vi) *WNP gray whales.* The hunt permit will provide that in the event the Regional Administrator determines a WNP gray whale was struck during a hunt, the Regional Administrator will notify the Makah Indian Tribe in writing, and require that the Tribe cease hunting for the duration of the permit, unless and until the Regional Administrator determines that measures have been taken to ensure no additional WNP gray whales are struck during the duration of the permit. No further hunt permits will be issued unless and until the Regional Administrator determines that measures have been taken to prevent additional WNP gray whales strikes during the duration of the waiver period.

(5) *Images and samples.* NMFS hunt observers, tribal hunt observers, and members of the Makah Indian Tribe may collect still or motion pictures as needed to document

hunting and training approaches, strikes (successful and unsuccessful attempts), and landings. Persons designated by NMFS and by the Makah Indian Tribe may also collect, store, transfer, and analyze specimen samples from landed gray whales.

(6) *Hunt permit terms and conditions.* Each hunt permit will specify:

(i) Those terms required by 16 U.S.C. 1374(b);

(ii) The maximum number of hunting and training approaches authorized per calendar year;

(iii) The maximum number of unsuccessful strike attempts, including training harpoon throws, authorized per hunting season and per calendar year;

(iv) The maximum number of strikes authorized per hunting season;

(v) The maximum number of struck and lost gray whales authorized per calendar year;

(vi) The maximum number of landings authorized per hunting season and over the duration of the hunt permit;

(vii) The area where hunts, hunting approaches, training approaches, and training harpoon throws are allowed, which will be limited to the waters of the Makah Indian Tribe's U&A west of the Bonilla-Tatoosh Line except as specified in § 216.115(g), and specify any site and time restrictions to protect Olympic Coast National Marine Sanctuary resources pursuant to consultation under 16 U.S.C. 1434(d) of the National Marine Sanctuary Act;-

(viii) The type and timing of notice that the Makah Indian Tribe must provide to NMFS before issuing a tribal whaling permit authorizing a hunt, hunting or training approaches, or training harpoon throws;

(ix) Measures to be taken by the hunt permit holder to provide for the safety of the whaling crew, the public, and others during a hunt;

(x) That the hunt permit authorizes only the take of ENP gray whales and not the take of any other marine mammals; and

(xi) Such other provisions as the Regional Administrator deems necessary.

(7) *Required determinations.* Before issuing a hunt permit the Regional Administrator must make the following determinations:

(i) The authorized manner of hunting is humane;

(ii) The Makah Indian Tribe has enacted a tribal ordinance governing the hunt that is consistent with these regulations;

(iii) The Makah Indian Tribe has in place certification procedures for whaling captains, riflemen, harpooners, tribal hunt observers, and safety officers and a process to ensure compliance with those procedures;

(iv) There are photo-identification catalogs and processes available to allow the identification of WNP gray whales and PCFG whales as described in § 216.114(b); and

(v) The Makah Indian Tribe has obtained any relevant incidental take authorization for WNP gray whales or other marine mammals.

(vi) Except for the initial hunt permit, before issuing a hunt permit the Regional Administrator must determine that the Makah Indian Tribe has complied with the requirements of these regulations and all prior permit terms and conditions, or if the Makah Indian Tribe has not fully complied, that it has adopted measures to ensure compliance.

(b) Gray whales landed under a hunt permit may be utilized as follows:

(1) Enrolled members of the Makah Indian Tribe may possess, consume, and share, within the Tribe's reservation boundaries, nonedible and edible products of ENP gray whales. Outside the Makah Indian Tribe's reservation boundaries, enrolled members of the Makah Indian Tribe may possess and consume edible products of ENP gray whales, and may share such edible products with any person attending a tribal or intertribal gathering, so long as there is not more than two pounds of edible ENP gray whale products per person attending the gathering. Except as provided in § 216.115(l), enrolled members of the Makah Indian Tribe may not sell, offer for sale, purchase, or barter any ENP gray whale products.

(2) Enrolled members of the Makah Indian Tribe may possess, make, barter, and sell in the United States, Makah Indian handicrafts made from ENP gray whales taken pursuant to these regulations, provided each handicraft, when sold, is permanently marked with a distinctive marking approved by the Makah Tribal Council, and is accompanied by a certificate of authenticity issued by the Makah Tribal Council or its designee and entered in the Tribe's official record of Makah Indian handicrafts.

(3) Any person may possess, purchase, or re-sell, in the United States, Makah Indian handicrafts made from ENP gray whales taken pursuant to these regulations, provided each handicraft is permanently marked with a distinctive marking approved by the Makah Tribal Council and is accompanied by a certificate of authenticity issued by the Makah Tribal Council or its designee and entered in the Tribe's official record of Makah Indian handicrafts.

(4) Any person may consume edible ENP gray whale products within the boundaries of the Makah reservation if the products are received from an enrolled member of the Makah Indian Tribe, or outside the boundaries of the Makah reservation at a tribal or intertribal gathering if products are received from an enrolled member of the Makah Indian Tribe, so long as the products are consumed exclusively at the gathering, and are not further distributed.

(c) The Makah Indian Tribe is responsible for managing all activities of any Makah Indian tribal member carried out under this section.

§ 216.114 Accounting and identification of gray whales.

(a) *Notifications*

(1) Thirty days prior to the beginning of a hunting season specified in § 216.113(a)(2), the Regional Administrator will notify the Makah Indian Tribe in writing of the limit on PCFG whales that may be struck during the upcoming hunting season. The limit

will be a value equal to the PBR level of PCFG whales as described in the NMFS stock assessment report, minus the average annual number of human-caused mortalities from sources other than the Makah Indian Tribe's hunt as described in that same report.

(2) By November 1 and prior to the beginning of a hunting season specified in § 216.113(a)(2), the Regional Administrator will notify the Makah Indian Tribe in writing of the proportion of gray whales that will be presumed to be PCFG whales for each month of the upcoming calendar year based on such whales' occurrence in the Makah U&A, as determined by the Regional Administrator. The presumed proportions will be used to account for PCFG whales that are subjected to hunting or training approaches or unsuccessful harpoon attempts, or struck and lost, and for the requirements under § 216.117, except as otherwise determined by the Regional Administrator in § 216.114(b)(1).

(3) The Regional Administrator will notify the Makah Indian Tribe in writing when the Tribe has reached the limit of PCFG whales that may be struck in any hunting season.

(b) *Identification and accounting of gray whales*

(1) *Even-year hunts*. Based on available evidence, the Regional Administrator will determine whether a gray whale that is subjected to a hunting approach, struck and lost, or struck and landed in an even-year hunt is a WNP gray whale, a PCFG whale, or cannot be identified as either. A whale affirmatively identified as a PCFG whale will be counted accordingly. A whale that is struck and lost and cannot be identified will be presumed to be a PCFG whale in accordance with the proportions specified in § 216.114(a)(2) and will be counted accordingly. The Regional Administrator will notify the Makah Indian Tribe of this determination in writing.

(2) *Odd-year hunts.* Based on available evidence, the Regional Administrator will determine whether a gray whale that is subjected to a hunting approach, struck and lost, or struck and landed in an odd-year hunt is a WNP gray whale or cannot be identified as such. A gray whale that cannot be identified as a WNP gray whale will be counted as a PCFG whale. The Regional Administrator will notify the Makah Indian Tribe of this determination in writing.

(3) *Training approaches.* All gray whales subjected to training approaches are presumed to be PCFG whales in accordance with the proportions specified in § 216.114(a)(2).

§ 216.115 Prohibited acts.

It is unlawful for the Makah Indian Tribe or any enrolled Makah Indian tribal member to:

(a) Take any gray whale except as authorized by a hunt permit issued under § 216.113(a) or any other provision of part 216. Any gray whale that is struck without such authorization will be counted toward the limits established under a hunt permit issued pursuant to § 216.113(a). Any gray whale that is landed without such authorization will be counted toward the limits established under a hunt permit issued pursuant to § 216.113(a) and will be counted as part of the U.S. share of the catch limit established by the International Whaling Commission.

(b) Participate in a hunt while failing to carry onboard the vessel at all times a hunt permit issued by NMFS and a tribal whaling permit issued by the Makah Indian Tribe, or an electronic copy or photocopy of these permits.

(c) Make a training approach or a training harpoon throw while failing to carry onboard the training vessel at all times an electronic copy or photocopy of the hunt permit issued by NMFS and a training logbook approved by the Makah Indian Tribe for recording training approaches and training harpoon throws.

(d) Participate in a hunt as a whaling captain, rifleman, harpooner, tribal hunt observer, or safety officer, unless the individual's name is included in a tribal certification report issued under § 216.117(a)(6)(i).

(e) Violate any provision of any hunt permit issued under § 216.113(a).

(f) Hunt or make a training harpoon throw on a calf or an adult gray whale accompanying a calf.

(g) Hunt outside the geographic area identified in § 216.113(a)(6)(vii), unless in pursuit of a gray whale that has already been struck within that area.

(h) Hunt, make a hunting or training approach, or make a training harpoon throw after reaching the limits specified in the hunt permit in § 216.113(a)(4)(i) through (v).

(i) Hunt a gray whale if the limit on PCFG whales that may be struck is less than one, as specified in § 216.114(a)(1) or as a result of accounting in § 216.114(b)(1) through (3).

(j) Hunt a gray whale after the Makah Indian Tribe has been notified in writing by the Regional Administrator under § 216.114(a)(3) that the limit of PCFG whales that may be struck has been reached.

(k) Hunt after a gray whale has been landed and before the Makah Indian Tribe has received notification from the Regional Administrator in accordance with § 216.114(e).

(l) Sell, offer for sale, purchase, or barter any gray whale products, except Makah Indian handicrafts that are permanently marked with a distinctive marking approved by the Makah Tribal Council and accompanied by a certificate of authenticity issued by the Makah Tribal Council or its designee.

(m) Possess products from a gray whale taken under § 216.113, except as authorized under that section.

(n) Make a false statement in an application for a hunt permit or in a report required under this subpart.
(o) Transfer or assign a hunt permit issued under this subpart.
(p) Fail to submit reports required by this subpart.
(q) Deny persons designated by NMFS access to landed gray whales for the purpose of collecting specimen samples.
(r) Fail to provide required permits and reports for inspection upon request by persons designated by NMFS.
(s) Allow anyone other than enrolled Makah Indian tribal members to be part of a whaling crew or to allow anyone other than such members or tribal hunt observers to be in a training vessel making a training approach.

§ 216.116 Applications for hunt permits.

(a) To obtain an initial hunt permit, the Makah Indian Tribe must submit an application to the Regional Administrator, signed by an official of the Makah Tribal Council, that contains the following information and statements:
  (1) The maximum number of ENP gray whales to be subjected to hunting or training approaches, struck, landed, and subjected to unsuccessful strike attempts;
  (2) A demonstration that the proposed method of taking is humane;
  (3) A demonstration that the proposed taking is consistent with these regulations;
  (4) A copy of the currently enacted Makah Indian tribal ordinance governing whaling by Makah Indian tribal members; and
  (5) A description of the certification process for whaling captains, riflemen, harpooners, tribal hunt observers, and safety officers, including any guidelines or manuals used by the Tribe to certify such persons.
(b) To obtain subsequent hunt permits, the Makah Indian Tribe must submit an application to the Regional Administrator, signed by an official of the Makah Tribal Council, that contains the information required in § 216.116(a) and the following information and statements:
  (1) A description of how the Makah Indian Tribe has complied with the requirements of these regulations and previously issued hunt permits;
  (2) A description of circumstances associated with gray whale(s) struck and lost under the most recently issued hunt permit, a description of the measures taken to retrieve such whale(s), and a description of measures taken by the Makah Indian Tribe to minimize future incidents of struck and lost gray whales; and
  (3) A description of products obtained from gray whales landed under the most recently issued hunt permit, including a description of the disposition of any gray whale products deemed unsuitable for use by Makah Indian tribal members.
(c) The Regional Administrator will notify the Makah Indian Tribe of receipt of the application and will review the application for completeness. Incomplete applications

will be returned with explanation. If the Makah Indian Tribe fails to resubmit a complete application within 60 days, the application will be deemed withdrawn.

(d) After receipt of a complete application, and the preparation of any NEPA documentation that the Regional Administrator has determined to be necessary, the Regional Administrator will publish a notice of receipt in the *Federal Register* and review the application as required by 16 U.S.C. 1374.

§ 216.117 Requirements for monitoring, reporting, and recordkeeping.

(a) In addition to the reporting provisions described in 50 CFR § 230.8, the Makah Indian Tribe will:

(1) Ensure a certified tribal hunt observer accompanies each hunt. The tribal hunt observer will record in a hunting logbook the time, date, and location (latitude and longitude, accurate to at least the nearest second) of each hunting approach of a gray whale, each attempt to strike a gray whale, and each gray whale struck. For each gray whale struck, the tribal hunt observer will record whether the whale was landed. If not landed, the tribal hunt observer will describe the circumstances associated with the striking of the whale and estimate whether the animal suffered a wound that might be fatal. For every gray whale approached by the whaling crew, the tribal hunt observer will attempt to take digital photographs.

(2) Ensure that each vessel involved in a training approach has onboard a training logbook for recording the date, location, and number of gray whales approached and the number of training harpoon throws. Each training approach and training harpoon throw must be reported to the tribal hunt observer within 24 hours.

(3) Maintain hunting and training logbooks specified in § 216.117(a)(1) and (2) and allow persons designated by NMFS to inspect them upon request.

(4) Ensure that each whaling captain allows a NMFS hunt observer to accompany and observe any hunt.

(5) Maintain an official record of all articles of Makah Indian handicraft, including the following information for each article certified by the Makah Tribal Council or its designee: the date of the certification; the permanent distinctive mark identifying the article as a Makah Indian handicraft; a brief description of the handicraft, including artist's full name, gray whale product(s) used, and approximate size; and at least one digital photograph of the entire handicraft. A copy of the official record of Makah Indian handicrafts will be provided to NMFS personnel, including NMFS enforcement officers, upon request.

(6) Ensure that the following reports are filed with the NMFS West Coast Region's office in Seattle, Washington, by the indicated date:

(i) *Tribal certification report*. Thirty days prior to the beginning of a hunting season, the Makah Indian Tribe must provide NMFS with a report that includes the names of all tribal hunt observers and enrolled Makah Indian tribal members who have been certified to participate in a hunt as whaling captains, riflemen,

harpooners, and safety officers. The Tribe may provide additional names during the hunting season.

(ii) *Incident report*. After striking a gray whale, the Makah Indian Tribe must submit an incident report within 48 hours to NMFS. A report may address multiple gray whales so long as NMFS receives the report within 48 hours of the first gray whale being struck. For any gray whale(s) struck and lost, the report must contain the information in subparagraph (1) and for any gray whale(s) struck and landed the report must contain the information in subparagraph (2):

1. Struck and lost gray whale(s): the whaling captain's name; the tribal hunt observer's name; the date, location (latitude and longitude, accurate to at least the nearest second), time, and number of strikes and attempted strikes if any; the method(s) of strikes and attempted strikes; an estimate of the whale's total length. The report will describe the circumstances associated with the striking of the whale and estimate whether the animal suffered a wound that might be fatal. The report will include all photographs taken by a tribal hunt observer of gray whales struck and lost by the whaling crew. The report may also contain any other observations by the Makah Indian Tribe concerning the struck and lost whale(s) or circumstances of the hunt.
2. Struck and landed gray whale(s): the whaling captain's name; the tribal hunt observer's name; the date, location (latitude and longitude, accurate to at least the nearest second), time, and number of strikes and attempted strikes if any; the method(s) of strikes and attempted strikes; the whale's body length as measured from the point of the upper jaw to the notch between the tail flukes; an estimate of the whale's maximum girth; the extreme width of the tail flukes; the whale's sex and, if female, lactation status; the length and sex of any fetus in the landed whale; photographs of the whale(s), including the entire dorsal right side, the entire dorsal left side, the dorsal aspect of the fluke, and the ventral aspect of the fluke. All such photographs must include a ruler to convey scale and a sign specifying the Makah Indian Tribe's name, whaling captain's name, whale species, and date. The report must also describe the time to death (measured from the time of the first strike to the time of death as indicated by relaxation of the lower jaw, no flipper movement, or sinking without active movement) and the disposition of all specimen samples collected and whale products, including any whale products deemed unsuitable for use by Makah Indian tribal members. The report may also contain any other observations by the Makah Indian Tribe concerning the landed whale or circumstances of the hunt.

(iii) *Hunt report*. Within 30 days after the end of each hunting season the Makah Indian Tribe must submit a report to NMFS that describes the following information for each day of hunting:

1. Struck and lost gray whale(s): the report must contain the information specified in § 216.117(a)(6)(ii)(1).
2. Struck and landed gray whale(s): the report must contain the information specified in § 216.117(a)(6)(ii)(2).
3. Hunting approaches and unsuccessful strike attempt(s): For each gray whale approached or subjected to an unsuccessful strike attempt(s), the report must contain: the whaling captain's name; the tribal hunt observer's name; the date, location (latitude and longitude, accurate to at least the nearest second), time, and number of approaches and unsuccessful strike attempts; the method of attempted strikes; an estimate of the total length of any whale subjected to an unsuccessful strike attempt; and all photographs taken by a tribal hunt observer of gray whales approached by the whaling crew. The report may also contain any other observations by the Makah Indian Tribe concerning the whale(s) approached or subjected to unsuccessful strike attempts or circumstances of the hunt.

(iv) *Annual approach report*. By January 15 of each year, the Makah Indian Tribe must submit a report to NMFS containing the dates, location, and number of gray whales subjected to hunting approaches, training approaches, and training harpoon throws during the previous calendar year. The report may also contain any other observations by the Makah Indian Tribe concerning the approached whales or circumstances of the approaches and training harpoon throws.

(v) *Annual handicraft report*. By September 30 of each year, the Makah Indian Tribe must submit a report to NMFS which describes all Makah Indian handicrafts certified by the Makah Tribal Council or its designee during the previous calendar year. The report must contain the following information for each handicraft certified: the date of the certification; the permanent distinctive mark identifying the article as a Makah Indian handicraft; a brief description of the handicraft, including artist's full name, gray whale product(s) used, and approximate size; and at least one digital photograph of the entire handicraft.

(vi) The hunt report, annual approach report, and annual handicraft report collected pursuant to this section will be maintained and made available for public review in the NMFS West Coast Region's office in Seattle, Washington.

(b) Upon receiving an incident report specified in § 216.117(a)(6)(ii) documenting that 8 or more gray whales have been struck, the Regional Administrator will evaluate:

(1) The photo-identification and notification requirements described in § 216.113(a)(7)(iv) and § 216.114. The evaluation will address the status of gray whale photo-identification catalogs used to manage gray whale hunts authorized under this subpart, the survey efforts employed to keep those catalogs updated, the level of certainty associated with identifying cataloged WNP gray whales and PCFG whales, the role of ancillary information such as genetic data during catalog review, and any other elements deemed appropriate by the Regional Administrator. The evaluation

will be made available to the public no more than 120 days after receiving the subject incident report.

(2) The humaneness of the authorized manner of hunting as specified in § 216.113(a)(7)(i). To evaluate humaneness, NMFS will convene a team composed of a veterinarian, a marine mammal biologist, and all tribal hunt observers and NMFS hunt observers who were witness to the strikes described in the incident reports required by this section. The team's evaluation will address the effectiveness of the hunting methods used by the Makah Indian Tribe, the availability and practicability of other such methods, and evaluate the pain and death of hunted whales, and any other matters deemed appropriate by the Regional Administrator and the team. The team's evaluation will be made available to the public no more than 120 days after receiving the subject incident report.

(c) The NMFS West Coast Region's Seattle office is located at 7600 Sand Point Way NE, Seattle, WA 98115-0070.

§ 216.118 Expiration and amendment.

(a) These regulations will expire at the end of [insert date 10 years from enactment], unless extended.

31 July 2015

Mr. William W. Stelle, Jr.
Regional Administrator
7600 Sand Point Way NE, Building 1
Seattle, WA 98115-0070

Dear Mr. Stelle:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the Draft Environmental Impact Statement (DEIS) prepared by the National Marine Fisheries Service (NMFS) in response to the request by the Makah Tribe (the Tribe) to resume hunting gray whales. In its review, the Commission has considered the goals, policies, and requirements of the Marine Mammal Protection Act (the MMPA) and offers the following comments and recommendations.

The Commission believes that the DEIS meets the requirements of the National Environmental Policy Act (NEPA) and responds to the major points raised in its 27 August 2012 letter concerning the Notice of Intent to prepare the DEIS. While the DEIS took considerable time to prepare, the Commission recognizes the extensive efforts made by NMFS to solicit input from the Tribe and from the public, and the careful attention given to describing the affected environment. The range of Alternatives analyzed in the DEIS is sufficient for the needs of NEPA, although the Commission notes that NMFS did not consider Alternatives that would authorize the take of more whales than under the Alternative proposed by the Tribe or apportioned to the United States under the catch limit adopted by the International Whaling Commission (IWC). The Commission agrees that there is little need for the EIS to consider higher take levels than are being sought or than are allowed under international law, but doing so could help decision-makers assess the relative impacts of the requested take level against other possible removal levels. Overall, the DEIS provides scientific, socio-economic, cultural, and other relevant information to help NMFS draft the proposed rule, and to inform parties to the rulemaking and others as they develop input on the six Alternatives considered and on other possible Alternatives as part of the regulatory process.

Background

The Makah Tribe submitted a request to NMFS in February 2005 seeking authorization under the MMPA to resume treaty-based hunting of eastern North Pacific (ENP) gray whales (*Eschrichtius robustus*) for ceremonial and subsistence purposes in the coastal portion of the Tribe's usual and accustomed (U&A) hunting and fishing area. NMFS prepared the 2015 DEIS to analyze various Alternatives, including the Tribe's proposed action (Alternative 2), and to consider the impacts on gray whales, including the ENP stock, the Pacific Coast Feeding Group (PCFG), and the western North Pacific (WNP) stock. In addition, the DEIS considers the potential impacts on marine waters, pelagic and benthic species, other protected species, and numerous aspects of the human environment.

NMFS has thus far refrained from recognizing the PCFG gray whales as a separate population stock under the MMPA. However, the agency has calculated the Potential Biological Removal (PBR) level for this group of whales in the most recent Pacific Stock Assessment Reports (Carretta et al. 2015) and, in view of the uncertainty about these whales' population status, the DEIS has chosen to treat the PCFG as a stock for the purpose of the rulemaking. The Commission agrees with this precautionary approach. Similarly, the present state of understanding of gray whale movements and population structure throughout the North Pacific does not allow a definitive answer to the question of how the whales that migrate from East Asia to North America should be classified or categorized. A recent analysis for the IWC Scientific Committee concluded that more than a third (possibly many more than a third) of the gray whales that feed in summer off Sakhalin Island, Russia, migrate to North America in the autumn and likely overwinter in the Mexican breeding grounds along with the ENP stock before returning to Russia in the spring (IWC in press). The Sakhalin feeding group nevertheless shows very strong site fidelity to feeding areas in Russia, and genetic studies using both mitochondrial and nuclear markers have demonstrated significant differentiation between Sakhalin gray whales and ENP gray whales (Leduc et al. 2002; Lang et al. 2011; Weller et al. 2012). Therefore, until understanding improves, the Commission considers it appropriate for NMFS to treat these trans-oceanic migrants as a separate unit to conserve. In other words, WNP gray whales should effectively be treated as a stock for the purposes of assessment and management in the United States, and this is the approach being taken by NMFS in its Stock Assessment Reports as well as this DEIS.

The Makah's request describes the history of whaling by the Tribe, noting that whaling began at least 1,500 years ago and was central to the Makah way of life until the early 20th century. Whaling contributed to the Tribe's subsistence needs and helped to shape and maintain social and cultural functions. The importance of whaling to the Tribe was reflected in the wording of the 1855 Treaty of Neah Bay, which explicitly reserves the Tribe's whaling rights – the only treaty with a U.S. tribe that does so. While the Tribe's engagement in whaling declined over the past century due to many factors – most of them beyond the Tribe's control – whaling remains a big part of the Makah's self-identity and traditions. The Commission notes that Tribal representatives have worked closely with the U.S. delegation to the IWC to ensure the recognition of Makah whaling as an aboriginal subsistence hunt. Moreover, the IWC has provided a catch limit (apportioned between Russia and the United States) so the Makah Tribe can take a small number of ENP gray whales.

Primary Concerns

In reviewing the Tribe's request, particularly as it relates to the MMPA's waiver requirements (Sections 101(a)(3)(A) and 103), the Commission is primarily interested in the following issues, in order of importance:

1) Risk of killing or injuring a WNP gray whale (although from a legal perspective all types of unauthorized take, not just killing or injuring a whale, are of concern);
2) Risk of having negative impacts on PCFG gray whales;
3) Ensuring that the ENP gray whale stock is at and remains within its optimum sustainable population; and
4) Balancing the Tribe's desire to use traditional hunting methods with the goals of achieving hunting efficiency and humaneness.

Analysis of Alternatives

The Commission's comments on each of the six Alternatives are presented below, focusing primarily on the four concerns noted above. Each of the Alternatives contains a number of elements that would have a bearing on these concerns, notably: (1) the timing and location of the hunt; (2) the cap on total take (primarily landings and strikes), including how that cap is apportioned between ENP and PCFG whales and the implications of taking a WNP whale; and (3) the hunting methods (e.g. type(s) of vessel, method(s) of propulsion, weapon(s) used). The Commission notes that the other potential impacts listed in the Summary Table ES-1 would be similar across all action Alternatives or be in proportion to the number of whales taken. The Commission provides its recommendations for the elements to be included in a final, preferred Alternative, based on review of the six Alternatives.

Alternative 1 - *No Action Alternative*

The No Action Alternative is basically the status quo, i.e., no hunting of gray whales by the Tribe would be allowed. As explained in the DEIS, the IWC has authorized, based on the *joint* request of the Russian Federation and the United States, a catch limit of 744 whales over the six-year period from 2013 to 2018, provided that no more than 140 whales are taken in any given year. Under a bilateral agreement, in the absence of a Makah gray whale hunt, or if the Makah hunt yields fewer whales than the number assigned to the United States, a transfer arrangement may be agreed such that the Chukotka Natives in Russia are allowed to take the "unused" portion of the U.S. allocation. Given the location of the Russian subsistence hunting, it is unlikely that any PCFG whales or WNP whales would be taken by Russia. However, there is a reasonable probability that the portion of the overall catch limit for ENP gray whales allocated to the United States would be harvested by Russia.

Alternative 1 would deny the Tribe's request for a waiver, therefore rendering the community unable to conduct its treaty-recognized, traditional subsistence hunting activities legally, and this would further erode the Tribe's spiritual and cultural connection to whaling. As noted in the DEIS, the Makah community's access to whale products would be limited to making use of drift (dead stranded) whales, to the extent that such use is allowed under applicable law. The cultural value of such usage would be limited given that the salvaging of drift whales is not a Makah traditional practice and is not the type of whaling right recognized in Article 4 of the Treaty of Neah Bay.

Alternative 2 - *Makah Tribe's Proposal*

Of the six Alternatives identified in the DEIS, Alternative 2 has the greatest potential impact on PCFG and WNP whales and therefore can be viewed as the least precautionary. A cap on the number of PCFG whales harvested (i.e. struck or landed) is based on a calculation of the PBR level for the PCFG, even though this group of whales is not yet formally recognized by NMFS as a separate stock. The PBR calculation in the Makah proposal uses a recovery factor of 1.0, which is less precautionary than the recovery factor of 0.5 used by NMFS in its most recent draft Stock Assessment Report owing to the uncertainty of whether the PCFG qualifies as a population stock under the MMPA and, if so, what its status is. While there is a cap on the number of whales that can be struck and lost (3 whales), these would not count against the PCFG cap. In addition, the PBR

calculation used to establish the PCFG cap does not reflect sources of human-caused mortality other than whaling (e.g. fishing, ship strikes). The resulting average allowable annual take of 4 PCFG whales (and up to 5 in one year) is the highest of any of the Alternatives. Given that the hunt under Alternative 2 would be conducted during a period that includes the times when WNP gray whales are most likely to migrate through the Makah U&A hunting area, this Alternative also has the highest estimated probability of interactions with WNP gray whales, with near certainty that at least one of them would be approached, and a probability of around 35 percent that an unsuccessful harpoon attempt on a WNP would be made over a six-year period.

The Commission believes that (a) the calculation used to determine a limit on removals should reflect the uncertainty surrounding the question of whether the PCFG is a population stock, (b) struck and lost whales, and the possibility that they are PCFG whales, should be accounted for in some way, and (c) all sources of human-caused injury and mortality should be considered in setting the cap for whaling.

The Tribe proposed that the hunt be conducted with a combination of traditional and "modern" methods, using canoes and motorized vessels as well as harpoons and high-powered rifles. When a whale is targeted for harvest, a Tribal hunter in a canoe would attempt the first strike using a stainless steel harpoon with a toggle point, which is secured to a rope with floats attached. This would be followed by a Tribal hunter on a motorized chase boat shooting the whale at close range with a high-powered, .50-caliber rifle. As noted in the DEIS, the .50-caliber rifle proposed by the Makah is more powerful than the .22 to .32-caliber rifles used by Chukotka Natives in Russia for hunting gray whales, and the .50-caliber rifle has been demonstrated to be effective in killing gray whales humanely. Alternative 3 (discussed below) proposes the use of a somewhat higher-caliber gun (0.577) than the .50-caliber rifle proposed by the Tribe. Although not included in the Makah proposal, the DEIS proposes in Alternatives 2 (as modified from the Makah proposal), 4, 5, and 6 the possible use of a hand-thrown darting gun or a shoulder gun to fire an explosive projectile into the whale (black powder or penthrite). The Commission believes that the .50-caliber rifle may be sufficient to address its concern that the hunting method strive to shorten the time to a whale's death, and avoid losing struck whales.

Alternative 3- *Offshore Hunt*

This Alternative is similar to Alternative 2, but differs in several respects. First, it would require whaling activities to be conducted further from shore, with initial strikes occurring at least 5 miles off shore. This proposed hunting-area restriction stems from public comment expressing concern about gun shots and other hunting operations occurring close to shore, possible disturbance of wildlife (including birds) on the shoreline and on rocks and islands, and impacts on PCFG whales, which tend to feed closer inshore. Alternative 3 is also more conservative (i.e., more risk-averse or precautionary – with regards to whale conservation) than Alternative 2 by establishing lower caps on the annual number of strikes (6 vs. 7), the annual number of struck and lost whales (2 vs. 3) allowed, and the number of PCFG whales that can be harvested (using a recovery factor of 0.5 vs. 1.0 in the PBR calculation), and by setting a specific cap on the number of female PCFG whales that can be harvested. Any struck and lost whales would be deducted from the harvest limit based on the proportion of PCFG whales in the Makah U&A area during that season. The probability of approaching a WNP whale is equivalent to that in Alternative 2, with slightly less likelihood of a strike or unsuccessful harpoon attempt given the lower number of strikes allowed.

The Commission notes that this offshore requirement would significantly alter the very nature of the hunt since it would need to be conducted with motorized vessels only. The request by the Tribe is based on a strong interest in adherence to cultural traditions, and the use of canoes is an important aspect of their traditional hunting practices. Furthermore, hunting farther from shore in small vessels presents more risk to the hunters. The impacts on PCFG gray whales under this Alternative would be slightly less than Alternative 2, not only because of the distance from shore, but also because of the lower caps on mortality of PCFG whales as a whole and specifically on female PCFG whales, and because it accounts for struck and lost whales in proportion to the presence of PCFG whales in the hunting area.

Alternative 4 – *Summer/Fall Hunt*

The Summer/Fall hunt Alternative, which is exactly the opposite in timing to the Makah proposal, would virtually rule out any potential direct impacts on WNP gray whales, given what we currently know about the timing of their presence off the Washington coast. It is therefore the most precautionary Alternative in terms of avoiding WNP whales; however, it also would virtually ensure that the whales taken will be from the PCFG, since this would be the peak time at which the PCFG would be in the Makah U&A area. This Alternative also requires hunters to approach only known males. The higher PCFG interaction rate under this Alternative is also addressed through a stricter cap on the number of strikes and whales landed, counting all struck and lost whales against the PCFG cap, and reducing the cap by other known sources of human-caused mortality. While the Commission supports measures to minimize potential interactions with WNP gray whales, Alternative 4 would result in a very small number of whales harvested each year – a maximum of one gray whale. Furthermore, it is estimated that it would take the Tribal hunters around seven days to locate and strike a known male, according to the Makah's analysis that is supported in the DEIS. The Commission believes that other options for the timing of the hunt could better balance the desire to limit the possibility of WNP interactions with the potential impacts on PCFG whales.

Alternative 5- *Split-Season Hunt*

The intent of the proposed split season is to avoid killing a WNP gray whale while still minimizing the chances of killing a PCFG whale. The cap on killing PCFG whales is limited to 10 percent of the PBR, calculated as under Alternative 3 (using a recovery factor of 0.5), resulting in a total mortality cap of 0.27 PCFG whales/year. Any whale struck but not landed would count against the mortality cap in proportion to the presence of PCFG whales in the Makah U&A area during that season. While the 10 percent of PBR cap is based on the practice in other situations under the MMPA (i.e., achieving the Zero Mortality Rate Goal for incidental lethal take in commercial fisheries and authorizing incidental serious injury and mortality of ESA-listed marine mammals in commercial fisheries), the Commission finds this cap to be overly restrictive for whaling by the Tribe, particularly given that the PCFG is not necessarily a separate stock, and is not listed under the ESA. This split-season Alternative would result in the lowest allowable whale harvest by the Makah, notably a maximum of one PCFG whale per year, but also with only one PCFG whale every five years. As noted in the DEIS, the Makah would have to accept a "hiatus" in whaling of up to four years after landing, or just striking and losing, one whale under this mortality cap. This alternative would severely hamper the ability of the Makah to conduct a traditional hunt as it could take place

only every 3-5 years depending upon the estimated abundance of PCFG gray whales and the timing of the hunt.

Any changes in the estimated abundance of PCFG whales would result in a modification of the cap. According to Calambokidis et al. (2014) (and the draft 2014 Stock Assessment Report, Carretta 2015) the current estimate of PCFG whales, excluding transient whales, is 209 (SE=15.4), which would yield the possibility of harvesting a whale every three years rather than every five years. The Commission notes that all Alternatives should be considered in light of a flexible cap as estimates of the PCFG population are modified through new research.

Alternative 6 -*Different Limits on Strikes and PCFG Whales, and Limited Duration of Regulations and Permits*

Alternative 6 is the same as Alternative 2 except that there would be a more restrictive limit on the number of strikes (3.5 per year), which would halve the probability of an encounter with a WNP gray whale. In addition, the PCFG mortality limit would be set as in Alternative 3, however reduced for other sources of human-caused mortality, for a total cap of 2.25 PCFG gray whales/year. All struck and lost whales would count against this cap. A limit on the number of strikes would likely curtail the Tribe's hunting activities, making it more challenging for the hunters to land a whale successfully. Nevertheless, the analysis of Alternative 6 results in an estimate of no more than four whales killed in a single year and seven over two years. Alternative 6 would also require that permits be limited to three years, and that the MMPA waiver period end after 10 years. The Commission believes that some form of ongoing review and flexibility in the regulations governing the hunt should be part of the final action should the waiver be issued, but that requiring a new rulemaking after 10 years may not be necessary.

Discerning the category of gray whale approached, struck, or harvested

The Commission is concerned about how the Makah whale hunt can be monitored in real or near-real time. In other words, the Commission is not convinced from the information provided in the DEIS that it will be feasible for the Makah hunters and hunt managers to discern quickly (within days) whether a given animal that was pursued, struck and lost, or landed was a WNP, ENP, or PCFG gray whale (this concern might also apply to sex determination in cases where there is a cap on the number of female PCFG whales that are allowed to be taken). The catalogues of PCFG and WNP whales appears to allow considerable ability to identify members of those groups even at a distance (including potentially the sex), but this assumes that at least one scientist with the requisite experience and skill is present with the whalers or that photographs sufficient to allow later identification of whales are taken by those who are present. This will be particularly important in determining which type of whale was approached or struck and lost.

Commission Recommendations for Formulating the Elements of the Preferred Alternative

In making the recommendations below, the Commission notes that whatever Alternative(s) NMFS includes in its proposed rule will be subject to review and possible modification in the course of the rulemaking. Thus, at this stage, without hearing the testimony and arguments made by all of the parties to the rulemaking, it is not possible for the Commission to make definitive pronouncements of its eventual positions. However, at this juncture, the Commission recommends

that NMFS adopt a preferred Alternative that strives for a balance between the risks of encountering a WNP gray whale – whether such encounter ends up with an approach, a strike, or a landed whale – and the risk of taking PCFG gray whales above the number that would keep this group within its OSP or some proxy for OSP. At the same time, the Commission believes that, if consistent with the requirements of the MMPA, there should be a reasonable opportunity for the Tribe to harvest at least one gray whale per year. Given these factors, the Commission recommends that:

- The hunting season should be split to require that at least a portion of the hunt occurs when it is highly unlikely that a WNP gray whale would be harvested, while also ensuring adequate protection for PCFG gray whales.
- The hunt should be conducted in the Makah U&A area as described under Alternative 2, but with year-round restrictions around Tatoosh Island and White Rock.
- PCFG gray whale limits should be derived using a recovery factor of 0.5 in order to reflect the uncertain status of this feeding group – including whether or not it qualifies as a population stock; these limits should be adjusted as new information on stock structure and improved estimates of PCFG numbers become available.
- Mortality caps should be set taking into account other (non-whaling) human-caused mortality, and these other sources of human-caused mortality should continue to be addressed by NMFS.
- All struck and lost whales should be counted against the mortality cap in proportion to the presence of the PCFG in the Makah U&A area in the corresponding season.
- There should be a limit on the number of whales that can be struck each year, particularly during the seasons when WNP and PCFG whales are most likely to be present in the Makah U&A area.
- The Tribe should be required to use a combination of traditional and "modern" hunting methods so as to minimize the time to death of a struck whale, and reduce the possibility that a whale will be struck and lost.
- In light of the two recently completed workshops on range-wide population structure and status of gray whales in the North Pacific (IWC 2015, IWC in press) and the additional workshop planned by the IWC Scientific Committee for April 2016, along with ongoing research by NMFS and others to improve understanding of stock structure, the preferred Alternative should include be some form of periodic review of these issues, perhaps in conjunction with permit reissuance, or more frequently as new information warrants.

The Commission also recommends that all of the elements that are included across each action Alternative (as listed on pages 2-3 – 2-4 of the DEIS) be included in the final preferred Alternative.

The Commission hopes these comments and recommendations are useful and looks forward to working with NMFS on the proposed rule.

Sincerely,

Rebecca J. Lent

Rebecca J. Lent, Ph.D.
Executive Director

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NMFS Protocol for Monitoring Makah Gray Whale Hunts

Updated December 12, 2018

Purpose

This document describes the process by which the National Marine Fisheries Service (NMFS) intends to monitor Makah tribal whale hunts that may be authorized by regulations set forth in 50 CFR § 216, Subpart J—Taking of Eastern North Pacific (ENP) Gray Whales (*Eschrichitus robustus*) by the Makah Indian Tribe off the Coast of Washington State (hunt regulations). NMFS considers this protocol to be a living document that may be modified in the future, as needed. This document provides non-regulatory guidance that is not intended to be binding on members of the public or the agency.

Background

In 2005, NMFS received a request from the Makah Indian Tribe (Tribe) for a limited waiver of the Marine Mammal Protection Act (MMPA) moratorium on take of Eastern North Pacific (ENP) gray whales (Makah Tribe 2005). The Tribe requested that NMFS authorize a tribal hunt for ENP whales in the coastal portion of its usual and accustomed fishing grounds (U&A) for ceremonial and subsistence purposes, and authorize the making and sale of handicrafts. The Makah U&A is situated along the northwest Washington coast in an area frequented by migrating and feeding gray whales. The proposed hunt area is that portion of the Makah U&A west of the Bonilla-Tatoosh line (Figure 1).

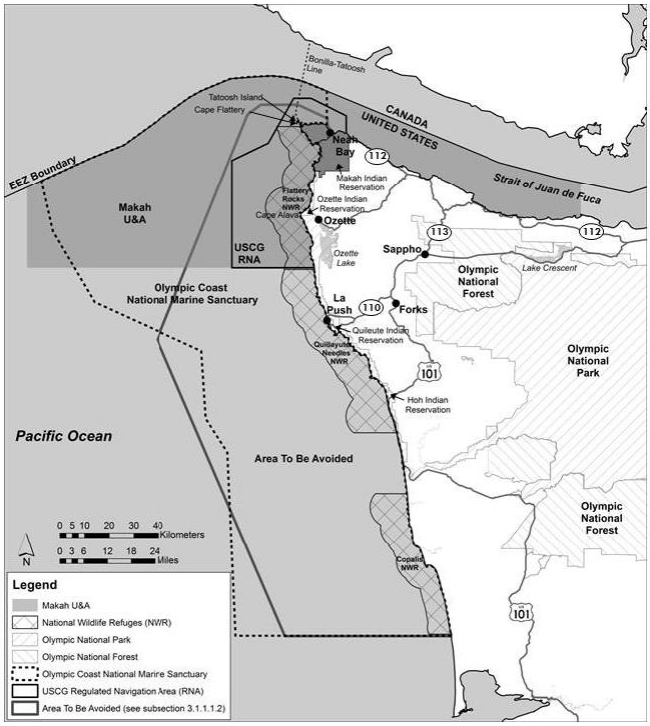

Figure 1. Designated and managed areas.

Effective monitoring is an important element of hunt management. Regulations governing the hunt address two types of observers:

- A "NMFS hunt observer" defined as a person designated by NMFS to accompany and observe a hunt.

- A "tribal hunt observer" defined as a tribal member or representative designated by the Tribe who has been certified by the Tribe as having demonstrated the qualifications commensurate with the duties and responsibilities of monitoring and reporting on a hunt.[1]

Data collected by hunt observers, particularly information pertaining to whales that are approached, struck, and landed pursuant to hunt regulations and permits, will be used to monitor and evaluate the hunt. Photographs and/or tissue samples collected by observers will be used to identify these whales, to the extent practicable, to determine how they will be counted against limits specified in the hunt regulations (see NMFS Protocol for Identifying Gray Whales Encountered in Makah Hunts, 2018 ["Photo-ID Protocol"]). Both of these components will help NMFS and the Tribe to determine when limits have been reached and hunting must cease. Additionally, the observers' data and documentation will inform retrospective reviews of the photo-identification requirements and of the humaneness of the hunt. 50 C.F.R. 216.117(b)(1)).

The hunt regulations require a tribal hunt observer to accompany each hunt and report on all hunt activities (§ 216.117(a)(1)). Hunt regulations also require each Makah whaling captain to allow a NMFS hunt observer to accompany and observe any hunt (§ 216.117(a)(4)), but they do not require that a NMFS hunt observer be present for every hunt. However, we expect that a NMFS hunt observer will accompany all or most hunts for the duration of the initial hunt permit (which may be issued for a period of up to three years). We expect that some hunt training activities will be conducted without a NMFS or tribal hunt observer present, but training approaches and training harpoon throws must be reported to the tribal hunt observer within 24 hours (§ 216.117(a)(2)) and such information must be included in an annual approach report (§ 216.117(a)(6)(iv)).

General Protocols

The following general protocols outline our commitment to supporting and coordinating a monitoring program for Makah gray whale hunts. The next two sections of this document include more specific information regarding implementing our monitoring efforts in accordance with hunt regulations. We will consider these protocols in any cooperative agreement developed with the Tribe pursuant to Whaling Convention Act requirements. 16 U.S.C. §§ 916–916l and 50 CFR Part 230.

1. NMFS will establish an agency team responsible for managing hunt-related information and records, including but not limited to:
    a. Logbooks, data sheets, and other written descriptions.

[1] The Tribe's 2005 application and 2013 Makah Whaling Ordinance specify that the Makah Tribal Council, with advice from the Tribal Whaling Commission, shall establish certification guidelines and a certificate process for whaling captains, harpooners, riflemen, divers, canoe paddlers, and other whaling team members (Makah Tribe 2005, 2013). The certification guidelines and the certification process shall ensure that every whaling captain and each member who serves on a whaling team has received adequate training to perform his assigned role on the team. Certification of riflemen shall include a demonstration of proficiency and accuracy under simulated hunting conditions.

b. Photographs (from still or motion pictures) and tissue samples, including verifying the authenticity of the information and coordinating the distribution and the review/analysis of such information.
c. Contracts and agreements regarding personnel, facilities, and/or equipment related to hunt monitoring.
d. Permits, notifications, and reports as described in the hunt regulations and in coordination with the Regional Administrator for the West Coast Region.
e. Coordination with any task force, committee, etc., recognized by NMFS to help monitor and manage a hunt.

2. NMFS intends, subject to federal appropriations, to support and maintain the personnel, facilities, and equipment necessary to observe Makah tribal whale hunts.
3. NMFS will work with the Tribe to ensure that hunt monitoring efforts are coordinated and that the Tribe is advised of, and consulted on, the personnel, procedures, and partners involved in the execution of this protocol.
4. NMFS will provide requisite information to the IWC (consistent with current U.S. practice for Alaska Eskimo bowhead hunts; Suydam et al., 2017) regarding gray whales encountered in Makah tribal whale hunts.
5. NMFS will provide information pertaining to Makah gray whale hunts consistent with any notification requirements in the most recent bilateral agreement between the United States and Russian Federation (currently Fominykh and Wulff, 2018).
6. NMFS may update these protocols as experience is gained, or as otherwise appropriate.

Personnel, Facilities, and Equipment

The Tribe's waiver request and 2013 Makah Whaling Ordinance include provisions for both a tribal observer and a NMFS observer to accompany the whaling team (Makah Tribe 2005, 2013). The waiver request and Whaling Ordinance do not specify how the observer(s) would accompany the whaling team, but in our Draft Environmental Impact Statement we assume this means the observers would ride in the chase boat (NMFS 2015). The chase boat, which is a small skiff equipped with an outboard motor, assists the whale hunt by staying in close proximity to the whaling crew in the hunting canoe, and would be manned by at least four individuals (pilot, rifleman, backup harpooner, and diver/safety officer[2]) plus the observer(s), each of whom has a distinct role in the hunt. NMFS also has the option to observe the Makah hunt from a National Oceanic and Atmospheric Administration (NOAA) vessel. By operating from a separate vessel, NMFS would have a better ability to maintain independence and focus on the specific role of monitoring, such as finding the best positioning to photograph whales encountered.

NMFS intends to conduct hunt monitoring from a NOAA vessel when possible. The regulations anticipate that the Tribe would notify NMFS far enough in advance of a hunt being commenced

[2] The 2013 Makah Whaling Ordinance specifies that "[e]ach chase boat shall be manned by a pilot, rifleman, and harpooner. At least one chase boat shall be manned by a diver. The diver or an additional whaling team member shall act as a safety officer" (Makah Tribe 2013).

to allow NMFS time to travel to the Makah Reservation and make a vessel available for hunt monitoring.

Whenever possible, NMFS will use a minimum of two people to observe the hunt. One observer will primarily take photographs while the other will primarily record data. The data recorder will also operate the vessel. NMFS will provide all equipment, supplies, and support necessary for the NMFS observer(s) to monitor and document the hunt.

Observer Protocol

A. Identification of qualified observers

In its application for an initial hunt permit, the Tribe must describe processes for training and certifying tribal hunt observers (§ 216.116(a)(5)). Before issuing the hunt permit, the NMFS West Coast Regional Administrator must determine that the Tribe's certification procedures are in place and that there is a process to ensure compliance with those procedures (§ 216.113(a)(7)(iii)). Thirty days prior to the beginning of a hunting season, the Tribe must provide NMFS with a tribal certification report that, among other things, identifies certified tribal hunt observers by name (§ 216.117(a)(6)(i)). The Tribe may provide NMFS with additional names during the hunting season.

NMFS will identify qualified individuals to serve as NMFS hunt observers. At a minimum, individuals must have experience in using digital cameras for photo-identification studies and must have completed the relevant NOAA or U.S. Coast Guard small boat training and certification or equivalent.[3] Preference will be given to individuals with experience conducting gray whale surveys. The individuals must be NOAA employees or contractors.

B. Pre-hunt coordination with Tribe

Prior to the beginning of a hunting season, NMFS will meet with the Tribe to:

a) Provide a list of NMFS observers, including identification of a lead observer to serve as a point of contact for notification and communication with the whaling captain.
b) Discuss logistical and safety considerations.
c) Discuss the types of samples and biological information NMFS expects to collect from landed whales. At a minimum, NMFS expects to sample skin, blubber, and muscle.

C. Notification of tribal whaling permit issuance

The hunt permit will specify the type and timing of notice that the Tribe must provide to NMFS before the Tribe issues a tribal whaling permit (§216.113(a)(6)(iv)). The Tribe's waiver request and 2013 Whaling Ordinance propose that the Tribe would notify the NMFS observer at least 24 hours in advance of a whaling permit being issued by the Makah Tribal Council, or at least 3 hours in advance if the NMFS observer was already present on the Makah Reservation. The hunt

[3] Minimum training requirements for NOAA small boat operators and crew members are described at the following website: https://www.omao.noaa.gov/learn/small-boat-program/resources/training

permit issued by NMFS may include a longer period of advance notice (e.g., 48 hours) to ensure a NMFS vessel can be readied and NMFS hunt observers can be on location for a hunt if NMFS so desires.

Once notified, the lead NMFS observer will coordinate directly with the whaling captain regarding the timing, location, and other logistics of the hunt.

D. Monitoring the hunt

1. Collect and record hunt data

The NMFS and tribal observers will be responsible for collecting and recording hunt information. The tribal observer must record specific information in a hunting logbook (§ 216.117(a)(1)) and provide information to NMFS in incident reports, hunting reports, and annual approach reports (§§ 216.117(a)(6)(ii)-(iv)). The information specified in the hunt regulations includes all information that must be reported under Whaling Convention Act regulations (50 C.F.R. § 230.8(b)).

The NMFS observer will collect the same information, such that it can serve as independent verification of the tribal hunt observer's data. The NMFS observer should also record information regarding hunting effort (e.g., dates, locations, daily begin/end times) and whales seen in the area (including those that are not approached) (e.g., numbers, locations, water depth, whether calves are present, behavior). NMFS will develop a data form for recording such information.

If a whale is struck and lost, the NMFS and /or tribal observer will attempt to examine the harpoon to determine whether any whale tissue remains affixed. If tissue is present, the observer will attempt to collect a specimen.

2. Collect photographs

NMFS and hunt observers are authorized to collect visual images (e.g., still photographs, motion pictures) as needed to document gray whales approached, struck, or landed (§ 216.113(a)(5)). Tribal hunt observers must photograph landed whales as well as whales encountered in the course of hunting, to the extent practicable (§ 216.117(a)(1)). The NMFS observer is not subject to that requirement, but will attempt to photograph all whales encountered during the hunt.

3. Measure and sample landed whales

The Whaling Convention Act and hunt regulations require certain measurements be taken from all landed whales. Hunt regulations also require the Tribe to give NMFS personnel access to landed whales for the purpose of collecting specimen samples (§ 216.115(a)(19). Consistent with the regulations and any cooperative agreement between NMFS and the Tribe, the NMFS observer will request access to the whale from the whaling captain and collect measurements and samples. Data and sample collection may be done in conjunction with the tribal hunt observer

and/or tribal biologist. Samples should be properly stored and transferred in accordance with a sampling protocol that will be developed ahead of the hunting season.

E. Reporting

Tribal hunt observers must submit reports to NMFS pursuant to regulations at § 216.117(a)(6). The NMFS observer is not subject to these requirements, but is expected to notify the NMFS West Coast Regional Office in Seattle as soon as possible following incidences of struck and lost or struck and landed whales and to transmit any photographs for use in implementing the Photo-ID Protocol. As soon as practicable following the conclusion of the hunt, the NMFS observer should submit a report to the NMFS West Coast Regional Office in Seattle that presents and summarizes their hunt data and observations. Data sheets (original or photocopies) should be appended to the report. Photographs should be transmitted per the Photo-ID Protocol.

F. Evaluation of hunt humaneness

As required by hunt regulations (§ 216.117(b)(2)), NMFS and tribal hunt observers will participate on a team convened by NMFS following the report of the eighth gray whale struck over the course of the 10-year waiver. The team will evaluate the humaneness of the hunt, including the effectiveness of the hunting methods used by the Tribe, the availability and practicability of other such methods, the time to death of hunted whales, and any other matters deemed appropriate by the Regional Administrator and the team. The team's evaluation will be made available to the public no more than 120 days after NMFS receives the incident report of the eighth struck whale.

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
West Coast Region
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Long Beach, California 90802-4213

MEMORANDUM FOR: THE RECORD

FROM: Chris Yates
Assistant Regional Administrator – Protected Resources Division, WCR

DATE: March 26, 2019

SUBJECT: Responses to Comments from the U.S. Marine Mammal Commission on a Proposed Waiver and Regulations Related to the Makah Indian Tribe's Request for a Waiver of the Marine Mammal Protection Act Moratorium on Take of Eastern North Pacific Gray Whales

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SUMMARY

This memorandum supports the National Marine Fisheries Service's (NMFS) proposed waiver and regulations governing Makah tribal hunts of Eastern North Pacific (ENP) gray whales. Here we provide the NMFS West Coast Region's (WCR) responses to the recommendations received from the Marine Mammal Commission (MMC) during consultation under the Marine Mammal Protection Act (MMPA) regarding the proposed waiver and regulations.

BACKGROUND

The MMPA requires that NMFS consult with the MMC in issuing a waiver and regulations (16 U.S.C. § 1371(a)(3)(A), 1373). The MMC is composed of experts in marine ecology and resource management and, among other duties, provides recommendations to federal officials for the protection and conservation of marine mammals (16 U.S.C. §§ 1401-02). The WCR consulted informally with the MMC staff throughout development of the proposed waiver and regulations and twice formally requested consultation with the MMC. The MMC also provided written comments on our draft Environmental Impact Statement (DEIS).

We first formally requested MMC consultation by letter dated May 12, 2017, enclosing a preliminary draft of our proposed waiver and regulations. The MMC replied by letter dated July 11, 2017, generally supporting our proposals and recommending several issues for further consideration. We subsequently modified our proposed regulations and requested a second

formal consultation with the MMC by letter dated December 19, 2017, enclosing our revised draft waiver and regulations. The MMC replied by letter dated March 13, 2018, again expressing support for our proposals and for our modifications. Below we provide our response to all of the MMC's recommendations contained in their 2017 and 2018 consultation letters.

FIRST CONSULTATION

1. In its 2017 letter, the MMC noted that its primary concern was the need to avoid, to the maximum extent practicable, the accidental taking of WNP gray whales and, secondarily, to avoid taking that could disadvantage the PCFG regardless of whether it is considered a stock. The MMC approved NMFS's proposal for alternating hunt seasons, stating: "The design of an odd year/even year hunting pattern is key to both controlling the harvest of PCFG whales and minimizing any take of WNP gray whales," and further stating: "The Commission believes that the proposed rule strikes an appropriate balance between the goals of protecting WNP and PCFG whales."

   NMFS WCR Response: Keeping this comment in mind, we retained the odd year/even year hunting pattern in the proposed regulations.

2. The MMC's 2017 letter recommended that NMFS clarify what the implications would be if the PCFG were recognized as a separate stock, especially whether hunting would be allowed to continue under this rule or if new rulemaking be would be necessary to consider the status of PCFG whales relative to OSP before the taking of PCFG whales could be authorized.

   NMFS WCR Response: Consistent with the Tribe's request, we are only proposing a waiver of the MMPA's take moratorium for the ENP gray whale stock and we have elected not to address hypothetical situations in the proposed waiver. If the PCFG were recognized as a separate stock after a waiver and hunt regulations were in place, it would be most appropriate for the agency to consider the implications in light of the facts at that time.

3. With respect to provisions in the regulations related to identification of WNP and PCFG whales, the MMC's 2017 letter recommended that NMFS address in the rule-making mechanisms to ensure the continued ability to rely on identification processes through photo-ID or other means.

   NMFS WCR Response: We added a provision to the proposed regulations (proposed section 216.113(a)(7)(iv)) requiring that the Regional Administrator, prior to issuing any hunt permit, determine that there are adequate photo-identification catalogs and processes available to allow for identification of PCFG whales. We also prepared the *NMFS Protocol for Identifying Gray Whales Encountered in Makah Hunts* to assist the Regional

Administrator in making the required determination and guide our implementation of the identification process.

4. In its 2017 letter, the MMC observed that "approaches and attempted strikes would have far less severe and more transitory impacts on gray whales than striking or killing." The MMC expressed concern that if the proposed limits on approaches and attempted strikes were too restrictive, it could have the "unfortunate, and perhaps counterproductive" effect of limiting training exercises and reducing hunt efficiency. The MMC recommended that NMFS consider separate authorizations for hunt training and allow training activities to be conducted throughout the year.

   NMFS WCR Response: We incorporated provisions that maximize hunt training opportunities. Our proposed regulations would allow training activities year-round in even-numbered years and in odd-numbered years would allow training approaches at any time but limit the months of training harpoon throws to reduce the overall risk to WNP gray whales (see proposed section 216.113(a)(3)-(4)).

5. Regarding use of whale products, the MMC's 2017 consultation letter noted that our proposed regulations differed somewhat from similar provisions applicable to Alaska Natives who engage in subsistence whaling and recommended that NMFS coordinate with the Makah Tribe to ensure the Tribe's preferences were taken into consideration.

   NMFS WCR Response: We consulted with the Makah Tribe to develop provisions in the proposed regulations that allow for wide use of whale products on the reservation while requiring marking and certification of tribal handicrafts for products intended for commercial use.

6. In its 2017 letter, the MMC approved of our proposal to halt hunting if a WNP gray whale were harvested, stating: "We agree that such a closure would be an appropriate immediate response." The MMC also agreed "that the regulations should allow for reopening the even-year hunting seasons if steps can be taken to provide reasonable assurance that no further WNP whales would be struck or killed." The MMC recommended that NMFS consider building flexibility into the regulations to allow a small increase in the numbers of whales that could be struck and landed in odd-year hunts should it become necessary to close the even-year hunt.

   NMFS WCR Response: We considered incorporating such flexibility into the regulations but did not pursue this recommendation out of concern for increased impacts on PCFG whales. This decision is consistent with the precautionary approach analyzed in Alternative 4 of the

2015 DEIS, which estimated that approximately one PCFG whale might be killed during summer/fall hunts.

7. The final recommendation from the MMC's 2017 consultation letter was that NMFS address whether there would be circumstances (*e.g.*, a die-off of gray whales) that could prompt NMFS to revisit or revise the regulations before the end of their anticipated lifetime.

   NMFS WCR Response: We modified our hunt provisions to provide additional safeguards (e.g., in the case of a significant decline in PCFG whales) and consulted again with the MMC (see Comment #2 below).

SECOND CONSULTATION

Subsequent to our 2017 consultation with the MMC we modified our proposed regulations as noted in the responses above and also changed the management method for setting a limit on PCFG mortality, specifically changing the original limits based on the PCFG's potential biological removal (PBR) to limits based on number of strikes and a low-abundance trigger.. We requested MMC consultation on our revised approach by letter dated December 19, 2017. The MMC replied by letter dated March 13, 2018, expressing support for our modified proposal.

1. In its 2018 letter, the MMC stated that our proposed revisions were not expected to have any negative effect on the possibility that WNP gray whales will be taken and that "the Commission stands by its earlier comment that the risk of killing or seriously injuring a WNP gray whale appears to be sufficiently low that it should not present an insurmountable obstacle to NMFS moving forward with a proposed rule to authorize the Makah Tribe to take whales from the [ENP] stock."

   NMFS WCR Response: Comments noted.

2. Regarding our proposal to manage impacts to the PCFG through the strike limits and low abundance triggers instead of a PBR-like approach, the MMC agreed with our revised approach, stating: "For PCFG whales, NMFS has over 20 years of data from annual surveys, which yield relatively precise abundance estimates and enable the agency to use a population forecast model for regulating the taking of PCFG whales. NMFS contends that this approach is more appropriate than a PBR approach for managing the taking of PCFG whales, because population information is readily available. Also, NMFS states that, because it is proposing to issue regulations for a ten-year period, this shorter-term management approach is appropriate. . . . The Commission agrees that, given the availability of reliable information on the abundance and trends of PCFG whales and rates of recruitment of whales to this putative stock, there is no reason to manage removals under a PBR framework. Further, the Commission believes that setting the allowable strike limit at 16 PCFG whales over a 10-year

period should provide reasonable certainty that the proposed level of hunting PCFG whales will not have adverse impacts on this 'stock.'"

NMFS WCR Response: Comments noted.

3. The MMC's 2018 letter noted that the harvest levels in our proposed regulations (no more than one whale landed per year during odd-year hunts and up to three whales landed per year during even-year hunts) was well short of the Makah Tribe's identified subsistence need and the Tribe's waiver request and encouraged NMFS to assess the relationship between the adopted harvests levels and the Tribe's subsistence and cultural needs as part of the final environmental impact statement for this action.

   NMFS WCR Response: We support this suggestion.

4. In its 2018 letter, the MMC concurred, from a biological standpoint, with NMFS's proposal to include a sub-limit on strikes of PCFG females but expressed concern that the limit could cause additional shortfalls in meeting the Tribe's subsistence needs, for example, if the first whales struck in a given 10-year period happened to be female. Also, the MMC questioned the basis for our presumption that females are expected to comprise 50 percent of the PCFG. The MMC recommended that NMFS and other appropriate experts work with the Tribe to develop hunting methods that minimize the chances that the female strike limit will be reached early in any 10-year period.

   NMFS WCR Response: We support the suggestion to work with appropriate experts and the Tribe to minimize the chance of a female strike limit constraining the harvest and have included provisions in the proposed regulations that require evaluating various hunt elements, including whale identification and the effectiveness of hunting methods, after eight gray whales have been struck. Also, the proposed regulations include a provision making it unlawful for hunters to hunt or make a training harpoon throw on an adult gray whale accompanying a calf, which should further reduce the likelihood of reaching the female strike limit early in the waiver period. We based our 50 percent estimate for female PCFG whales on more recent data obtained by Dr. Aimée Lang and conveyed to Steve Stone of my staff by personal communication/e-mail on October 17, 2017. In that communication, Dr. Lang noted that "the sex ratio of sampled [PCFG] whales is now closer to 50:50" (in contrast to the 59:41 female bias that she and other researchers reported for PCFG whales in their 2010 analysis[1]). The proposed regulations provide that in cases where we must make a

[1] Lang, A. R., B. L. Taylor, J. Calambokidis, V. L. Pease, A. Klimik, J. Scordino, K. M. Robertson, D. Litovka, V. Burkanov, P. Gearin, J. C. George, and B. Mate. 2011b. Assessment of stock structure among gray whales utilizing feeding grounds in the Eastern North Pacific. Paper SC/M11/AWMP4 presented to the International Whaling Commission Scientific Committee.

presumption about a whale's identity as PCFG/non-PCFG or as male/female, we would rely on the most up-to-date information at that time.

5. Finally, the MMC's 2018 letter expressed support for our proposal to establish low-abundance thresholds as part of managing hunt impacts on the PCFG and stated that the 192/171 values we proposed were good starting points for examination in the course of rule-making. The MMC observed that the thresholds would act as an on-off switch and suggested NMFS consider intermediate thresholds that would lower allowable hunting levels.

   NMFS WCR Response: In response to this comment we explored the utility of different stop-hunt thresholds for the PCFG, including incremental levels both above and below the selected threshold as well as stop-hunt triggers based on a rate of decline. The proposed rule maintains a single abundance threshold, primarily because the threshold chosen relies on empirical information (past observable abundance levels and trends) and selection of intermediate thresholds would be somewhat arbitrary. Moreover, given the many provisions in the proposed regulations aimed at minimizing mortality of PCFG whales, we concluded that an intermediate threshold was not necessary to further protect PCFG whales.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OREGON 97232-1274

December 19, 2017

BY ELECTRONIC MAIL

Dr. Rebecca Lent
Executive Director
Marine Mammal Commission
4340 East-West Highway, Room 700
Bethesda, MD 20814-4498

Dear Dr. Lent: Rebecca

Thank you for your comments earlier this year on the initial draft of our proposed determination and regulations regarding the Makah Tribe's request for a limited waiver of the Marine Mammal Protection Act's (MMPA) moratorium on the taking of marine mammals. We are now considering revising certain aspects of those proposed regulations and are seeking your input.

Your comments, and those from the public on our 2015 draft environmental impact statement, have prompted us to consider whether a revised approach might be warranted to manage hunt-related impacts on the Pacific Coast Feeding Group of gray whales (PCFG). While most aspects of our original proposal would remain the same, our proposed revised approach would replace the PCFG mortality limit based on a potential biological removal formula. Instead, we propose using: (1) a strike limit of 16 PCFG whales for the proposed 10-year waiver period, and (2) a requirement that all hunting stop if PCFG abundance falls below a set threshold.

The enclosed draft *Federal Register* notice describes the approach and is provided in redline-strikeout format to facilitate your review. This draft also reflects revisions responsive to Commission comments on other parts of the initial draft. We request the Commission's comments as continued consultation on this matter, consistent with Sections 10l (a)(3)(A) and Section 103(a) of the MMPA.

If you have any questions, please contact Steve Stone of my staff at steve.stone@noaa.gov or by phone at 503-231-2317.

Sincerely,

Barry A. Thom
Regional Administrator

enc

Billing Code: 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 216

[Docket No. xxxxxx]

RIN XXXX-XXXX

Regulations Governing the Taking of Marine Mammals

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; notice of hearing.

SUMMARY: On February 14, 2005, the National Marine Fisheries Service (NMFS) received a request from the Makah Indian Tribe for a limited waiver of the Marine Mammal Protection Act (MMPA) moratorium on take of Eastern North Pacific (ENP) gray whales (*Eschrichtius robustus*). The Tribe requested that NMFS authorize a tribal hunt in the coastal portion of the Tribe's usual and accustomed fishing area (U&A) for ceremonial and subsistence purposes, and authorize the making and sale of handicrafts. The MMPA imposes a general moratorium on the taking of marine mammals but authorizes the Secretary of Commerce to waive the moratorium and issue regulations governing the take of marine mammals if certain statutory criteria are met. The decision to waive the moratorium and issue regulations must be made on the record after an opportunity for an agency hearing on both the waiver and regulations. The hearing is governed by agency regulations, which call for the appointment of an administrative law judge and prescribe other procedures (50 CFR 228). This notice announces the proposed waiver and regulations and the commencement of such a hearing. On March 13, 2015, NMFS released a Draft Environmental Impact Statement (DEIS) analyzing the impacts on the human environment of the Tribe's proposed hunt and five alternatives, including a no-action alternative.

DATES: NMFS has scheduled a formal hearing before an Administrative Law Judge [NAME] to consider the issuance of a limited waiver of the take moratorium and the

regulations. It will begin at [TIME AND DATE] in [LOCATION]. A pre-hearing conference is scheduled at [TIME AND DATE].

Filing deadlines

By [DATE], any interested person desiring to participate as a party must file an initial notice of intent to participate in the hearing, and submit any direct testimony and any documentary evidence. By [DATE], any rebuttal testimony and documentary evidence must be filed. Interested parties should consult procedural regulations at 50 CFR part 228 (65 FR 39560, June 27, 2000) for additional deadlines and hearing procedures.

ADDRESSES: All filings associated with the hearing, including those of NMFS, become part of the record. All original filings and written comments should be sent to: [Add name and address of ALJ].

Also, the record for the proposed rule and the DEIS is available at the following NMFS offices:

(1) NMFS, West Coast Region, Protected Resources Division

7600 Sand Point Way Northeast

Seattle, WA 98115

(2) NMFS, West Coast Region, Protected Resources Division

1201 NE Lloyd Boulevard, Suite 1100

Portland, OR 97232

Information related to the hearing and the DEIS will be available on the NMFS, West Coast Region website at: *http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/cetaceans/whale_hunt.html.*

FOR FURTHER INFORMATION CONTACT: Steve Stone, Protected Resources Division, NMFS West Coast Region, 1201 NE Lloyd Blvd., Suite 1100, Portland, OR 97232-1274; 503-231-2317.

SUPPLEMENTARY INFORMATION

The following table of contents is intended as an aid to readers:

I. List of Acronyms

CFR	Code of Federal Regulations
DEIS	Draft Environmental Impact Statement

ENP	Eastern North Pacific
ESA	Endangered Species Act
ICRW	International Convention for the Regulation of Whaling
K	Carrying Capacity
MMC	Marine Mammal Commission
MMPA	Marine Mammal Protection Act
MNPL	Maximum Net Productivity Level
MtDNA	Mitochondrial Deoxyribonucleic Acid
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
OSP	Optimum Sustainable Population
PBR	Potential Biological Removal
PCFG	Pacific Coast Feeding Group
PRA	Paperwork Reduction Act
RFA	Regulatory Flexibility Act
SAR	Stock Assessment Report
U&A	Usual and Accustomed (Fishing Area of the Makah Tribe)
U.S.C.	United States Code
WCA	Whaling Convention Act
WNP	Western North Pacific

II. Background

Whaling is governed by both international and domestic law. On February 14, 2005, the Makah Indian Tribe, pursuant to its express treaty right to hunt whales as defined in the 1855 Treaty of Neah Bay and consistent with international authorization pursuant to the International Convention for the Regulation of Whaling (ICRW), submitted a request seeking domestic authorization under the MMPA for a whale hunt. The Tribe requested a limited waiver of the MMPA take moratorium to authorize a tribal hunt for ENP gray whales in the coastal portion of the Tribe's U&A in northwest Washington State for ceremonial and subsistence purposes, and to allow the making and

sale of handicrafts. The Tribe's request was subsequent to a 2004 Ninth Circuit Court of Appeals decision holding that the Tribe must obtain a waiver of the MMPA take moratorium (*Anderson* v. *Evans*, 371 F.3d 475 (9th Cir. 2004)(()) (*Anderson*) in order to pursue whaling.

Consistent with the *Anderson* court's decision, the Tribe submitted its 2005 request to Dr. William Hogarth, the Assistant Administrator of NMFS at the time. Dr. Hogarth delegated authority to the Northwest Region (now the West Coast Region) of NMFS to complete an analysis under the National Environmental Policy Act (NEPA) and make the initial waiver determination under the MMPA. On May 9, 2007, we, the West Coast Region of NMFS, released a DEIS. We later terminated that DEIS because of new scientific information, published a notice of intent to prepare a new DEIS, and opened a scoping process (77 FR 29967, May 21, 2012). On March 13, 2015, we released a new DEIS (80 FR 13373). The Tribe's application is included as an attachment to the DEIS. The present Notice of a proposed rule represents our initial waiver determination and proposed regulations governing Makah tribal hunts of ENP gray whales and is based on the detailed information found in the 2015 DEIS and public comments on the DEIS, and developed during our review of the Tribe's application.

A. MMPA Provisions Relevant to a Waiver Determination

The primary objective of marine resource management under the MMPA is to maintain the health and stability of the marine ecosystem (16 U.S.C. §1361). The MMPA states that species and population stocks should not be permitted to diminish beyond the point at which they cease to be a significant functioning element of the ecosystem, and they should not be permitted to diminish below their optimum sustainable population (OSP). The MMPA defines OSP as "the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem in which they form a constituent element." NMFS regulations further define OSP as: "[A] population size which falls within a range from the population level of a given species or stock which is the largest supportable within the ecosystem [known in biological terms as carrying capacity, abbreviated as K] to the population level that results in maximum net productivity [known as the maximum net productivity level, or MNPL]." (50 CFR 216.3).

The MMPA defines the term "population stock" or "stock" to mean "a group of marine mammals of the same species or smaller taxa in a common spatial arrangement, that interbreed when mature." NMFS' ~~stock assessment~~ guidance on preparing stock assessments (NMFS, 2005; NMFS, 2016) includes guidelines for determining what constitutes a "stock" for MMPA management purposes. Those guidelines direct the agency to use demographic independence to identify stocks and they provide a number of factors to evaluate in identifying demographic independence. Where stocks are demographically independent, "separate management is appropriate." Demographic independence means that the population dynamics of the affected group are more a consequence of births and deaths within the group . . . rather than immigration or emigration (NMFS, 2016). The guidelines state that stock identification should be consistent with the objective of section 2 of the MMPA (16 U.S.C. §1361) that marine mammals remain a functioning element of their ecosystem.

Section 117(a) of the MMPA requires NMFS~~, in consultation with regional scientific review groups~~ and the U.S. Fish and Wildlife Service, to prepare a stock assessment report (SAR) for each marine mammal stock occurring in waters under U.S. jurisdiction (16 U.S.C. §1386(a)). The SAR is to, among other things, describe the stock's geographic range, estimate its minimum abundance and productivity, estimate human-caused mortality, and estimate the potential biological removal (PBR) for the stock. Section 3(20) of the MMPA defines PBR as the "maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population" (16 U.S.C. §1362(20)). The definition also prescribes a formula for calculating PBR. The SARs are reviewed by regional scientific review groups and made available for public comment and review. The Marine Mammal Commission routinely reviews and comments on the SARs during the public comment period (Carretta et al., ~~2015~~2017; 80 FR 50599, August 20, 2015).

The MMPA requires that the assessment occur every year for strategic stocks and stocks for which significant new information is available, and every 3 years for all other stocks. Because the SARs are published as a collection of individual stock reports by region, the report for an individual stock within that collection might be updated or it

might repeat the text from a previous SAR. In addition, SARs take many months to finalize after scientific review and public comment, thus the citation might have a year that is different from the reference year for the report. For example, the most recent Pacific SAR that includes a report for ENP gray whales is Carretta et al. (2017). This is considered the 2016 Pacific SAR. The ENP gray whale stock report that appears in Carretta et al. (2017) first appeared in its present form in the 2014 SAR, which was published in 2015 as Carretta et al. (2015). To minimize confusion in this Notice, we will refer to the collection of individual stock reports as the "SAR" and cite the most recent year (2017), even if the relevant section for the stock of interest simply repeats the report for that stock from an earlier year.

To achieve the general purposes and policies of section 2 of the MMPA (16 U.S.C. §1361), among other measures, Congress established a moratorium on the taking and importing of marine mammals in section 101(a) (16 U.S.C. §1371(a)). Under section 3(13) of the MMPA, 'take' means to "harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal" (16 U.S.C. §1362(13)). This moratorium is not absolute. Statutory exceptions allow NMFS to issue direct take permits for scientific ~~or educational purposes~~research, public display, species enhancement, etc. (section ~~101(a)(3)(b~~104(c); 16 U.S.C. §~~1371(a)(3)(B~~1374(c)) and ~~permits~~authorizations for specified activities other than commercial fishing when the take is incidental but not intentional (section 101(a)(5); 16 U.S.C. §1371(a)(5)). Other exceptions allow take resulting from non-lethal actions to deter marine mammals from damaging gear or catch or private property or endangering personal safety (section 101(a)(4); 16 U.S.C. §1371(a)(4)); take incidental to commercial fishing (section 118 and 101(a)(5)(E); 16 U.S.C. §1387 and §1371(a)(5)(E)); take in defense of self or others (section 101(c); 16 U.S.C. §1371(c)); take to protect at-risk salmonid stocks (section 120; 16 U.S.C § 1389); and take necessary to avoid injury or death to entangled marine mammals (section 101(d); 16 U.S.C. §1371(d)). Statutory exemptions allow take of marine mammals by Alaskan Natives for subsistence purposes or to create and sell authentic native articles of handicraft and clothing (section 101(b); 16 U.S.C. §1371(b)) and take necessary for national defense (section 101(f); 16 U.S.C. §1371(f)).

The MMPA also authorizes the agency to waive the take moratorium from time to

time (16 U.S.C. §1371(a)(3)(A)), adopt suitable regulations governing that take (16 U.S.C. §1373), and issue permits authorizing take (16 U.S.C. §1374), if certain statutory criteria are met. The Makah Tribe has requested that NMFS waive the take moratorium and issue regulations allowing a tribal hunt for ENP gray whales. If a waiver is granted and regulations are promulgated the Tribe must also separately seek an MMPA permit to implement a hunt (16 U.S.C. §1374).

Section 101(a)(3)(A) (16 U.S.C. §1371(a)) authorizes and directs the Secretary of Commerce "from time to time" to "determine when, to what extent, if at all, and by what means, it is compatible" with the MMPA "to waive the Section 101(a) take moratorium." The Tribe has requested that NMFS waive the moratorium only with respect to the ENP gray whale stock and with certain limitations. Pursuant to section 101(a)(3)(A), any decision to waive the MMPA take moratorium must:

1. Be based on the best scientific evidence available;
2. Be made in consultation with the Marine Mammal Commission (MMC);
3. Have due regard to the distribution, abundance, breeding habits, and times and lines of migratory movements of the marine mammal stock potentially subject to take; and
4. Be supported by a finding that the taking is in accord with sound principles of resource protection and conservation as provided in the purposes and policies of the MMPA (which include maintaining marine mammals as "a significant functioning element in the ecosystem of which they are a part," "maintain[ing] the health and stability of the marine ecosystem," and "obtain[ing] an optimum sustainable population keeping in mind the carrying capacity of the habitat").

Section 103(a) authorizes the Secretary to prescribe such regulations with respect to the taking or importing of marine mammals as he or she "deems necessary and appropriate to insure that such taking will not be to the disadvantage of" the species or stock and "will be consistent with the purposes and policies [of the MMPA in section 2]" (16 U.S.C. §1373(a)). Court decisions have interpreted "disadvantage" in relation to the impact of take on the stock's OSP (*Committee for Humane Legislation* v. *Richardson*, 540 F.2d 1141 (1976); *Kokechik* v. *Secretary of Commerce*, 839 F.2d 795 (1988)). Section 101(a)(3)(B) prohibits a waiver for a stock that is designated by the Secretary as

"depleted" (16 U.S.C. §1371(a)(3)(B)). Section 3(1)(A) defines depleted as being below OSP (16 U.S.C. §1362(3)(1)(A)).

Section 103(b) (16 U.S.C. §1373(b)) requires the agency to consider the effect of such regulations on the following:

1. Existing and future levels of marine mammal species and population stocks;
2. Existing international treaty and agreement obligations of the United States;
3. The marine ecosystem and related environmental considerations;
4. The conservation, development, and utilization of fishery resources (not applicable in this case); and
5. The economic and technological feasibility of implementation.

Section 103(c) of the MMPA lists some of the allowable restrictions that regulations may include for governing the take of marine mammals, such as limits on the number, age, size, and sex of animals taken, as well as the season, manner, location, and fishing techniques that may be used (for marine mammals caught in fishing gear incidental to fishing activities) (16 U.S.C. §1373(c)). Regulations are subject to periodic review and modification to carry out the purposes of the MMPA (16 U.S.C. §1373(e)).

Section 103(d) of the MMPA (16 U.S.C. §1373(d)) provides that regulations governing the take of marine mammals in the event of a waiver "must be made on the record after an opportunity for an agency hearing on both the Secretary's determination to waive the moratorium . . . and on such regulations." Agency regulations govern the conduct of the agency hearing, call for the appointment of an administrative law judge, and prescribe other procedures (50 CFR 228).

Pursuant to MMPA section 103(d) (16 U.S.C. §1373(d)), either before or concurrent with the public notice of its intention to issue regulations, we must make available to the public:

1. A statement of the estimated existing levels of the species and populations stocks of the marine mammal concerned;
2. A statement of the expected impact of the proposed regulations on the OSP of such species or population stock;
3. A statement describing the evidence before the agency that forms the basis for the regulations; and

4. Any studies made by or for the agency or any recommendations made by or for the agency or the MMC that relate to the establishment of the regulation.

If NMFS waives the MMPA take moratorium for ENP gray whales and issues regulations governing a tribal hunt, the Makah Tribe would have to obtain a permit under those regulations prior to taking any whales. The permit process, which is described in section 104 of the MMPA (16 U.S.C. §1374), includes the opportunity for public notice and comment. The Tribe, as applicant for the permit, must demonstrate that the taking of any marine mammal under such permit will be consistent with the purposes and policies of the MMPA and the applicable regulations established under MMPA section 103 (16 U.S.C. §1373). A permit issued under MMPA section 104(b) (16 U.S.C. §1374(b)) must be consistent with applicable regulations and must specify the following:

1. The number and kinds of animals authorized to be taken;
2. The location and manner (which the Secretary must determine to be humane) in which they may be taken;
3. The period during which the permit is valid; and
4. Other terms or conditions that the Secretary deems appropriate.

The MMPA defines 'humane' as "that method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved" (16 U.S.C. §1362(4)).

The permit process is subsequent to and separate from the waiver ~~process~~hearing and therefore not part of this waiver process. The permit process is described here and discussed elsewhere in this Notice to provide context for consideration of the proposed regulations.

B. Whaling Convention Act Processes Relevant to a Waiver

Because the Tribe's request involves a large whale species, the Tribe would need to obtain authorization from NMFS in accordance with the Whaling Convention Act (WCA), which implements United States obligations under the International Convention for the Regulation of Whaling (ICRW). The purpose of the ICRW is to "provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry" (ICRW, Dec. 2, 1946, 161 United Nations Treaty Series 72). The ICRW established the International Whaling Commission (IWC), an international

organization whose charge includes adopting provisions for the conservation and utilization of whale resources by periodically amending the Schedule, an integral document of the ICRW that, among other things, provides for the protection of certain species and sets catch limits for aboriginal subsistence whaling.

Beginning in 1996, the Russian Federation and the United States submitted a joint proposal to the IWC for an aboriginal subsistence whaling catch limit for ENP gray whales on behalf of Chukotkan natives and the Makah Tribe, respectively. In response the IWC has repeatedly established catch limits for ENP gray whales, the most recent of which runs from 2013 through 2018 and is for aborigines "only when the meat and products of such whales are to be used exclusively for local consumption and distribution" (IWC, 2012a). The 6-year harvest limit is for 744 whales with an annual cap of 140 whales. A bilateral agreement between the United States and Russian Federation sets overall and annual limits for the two countries (Fominykh and Smith, 2017), with the Makah Tribe entitled to a maximum of 5 whales in any one year and 24 whales over 6 years, for an average of 4 whales per year.

The Makah Tribe's request for domestic review of its proposed whaling under the MMPA recognizes the international catch limit authorized by the IWC. If NMFS waives the MMPA take moratorium for ENP gray whales and issues regulations governing a tribal hunt, the Makah Tribe and NMFS would need to complete procedures established in the WCA and implementing regulations at 50 CFR Part 230 to allocate a domestic catch limit for ENP gray whales to the Makah Tribe consistent with the IWC Schedule and bilateral agreement, which include publishing those catch limits and entering into a cooperative agreement. Those processes are subsequent to and separate from the MMPA process of waiving the take moratorium and issuing regulations.

C. North Pacific Gray Whales

The life history, status, and distribution of North Pacific gray whales are described in detail in the DEIS (Subsection 3.4, Gray Whales). We summarize that information here and discuss the ENP gray whale stock in more detail in a companion biological report (NMFS, ~~2017~~2018), which is incorporated by reference.

NMFS and the IWC recognize two stocks of gray whales, one in the western and one in the eastern north Pacific (IWC, 2013; Carretta et al., ~~2015~~2017). The

~~World~~International Union for Conservation ~~Union~~of Nature also recognizes these two stocks (Reilly et al., 2008). Genetic studies have found ~~distinct~~ differences between the two populations (LeDuc et al., 2002; Lang et al., 2010; Lang et al., 2011a; Meschersky et al., 2012). Some researchers have suggested the two populations may not be distinct, citing recent information that a portion of the western North Pacific (WNP) ~~and~~ population mix with the eastern North Pacific (ENP) ~~populations mix~~population in the ENP migratory corridor and on the wintering ground (Bickham et al., 2013). Through the ~~stock assessment report~~SAR process, NMFS concluded that the best scientific information available consists of genetic information showing significant mitochondrial and nuclear genetic differences between the WNP and ENP stocks, which demonstrates demographic independence (Carretta et al., ~~2015~~2017).

Commercial whaling from the mid-nineteenth through early twentieth centuries dramatically reduced the abundance of the gray whale, leading to its protection by a suite of international agreements and federal laws including the WCA and MMPA. The gray whale was listed as an endangered species under the U.S Endangered Species Act (ESA) and its predecessor statute beginning in 1970 (35 FR 8495, June 2, 1970). As a result of protection from commercial exploitation, the ENP gray whale stock recovered and in 1994 was removed from the ESA's list of endangered and threatened wildlife (59 FR 21094, June 16, 1994). The WNP stock remains listed as endangered (50 CFR 223.102).

As required under section 4(g) of the ESA, NMFS completed a plan to monitor the status of the ENP stock for at least five years following the delisting. The comprehensive status review, completed in August of 1999 (Rugh et al. 1999), recommended that the population continue under a non-listed, non-threatened classification. In 2001, NMFS received a petition to relist the gray whale under the ESA. NMFS found that the petition did not present substantial scientific or commercial information indicating that relisting may be warranted (66 FR 32305, June 14, 2001). On October 21, 2010, NMFS received a petition under the MMPA to review the status of the ENP gray whale population and designate it as depleted under the MMPA. NMFS found that the petition did not present substantial information indicating that a status review may be warranted (75 FR 81225, December 27, 2010). NMFS has continued monitoring the population since its delisting (Carretta et al., ~~2015~~2017).

NMFS recognizes the ENP gray whale population as a single stock, which spends the winter as far south as the Baja California Peninsula and Gulf of California in northwestern Mexico and migrates north to summer feeding areas as far as the Chukchi and Beaufort Seas. A small group of ENP whales, referred to as the Pacific Coast Feeding Group~~, or (~~PCFG~~,~~) exhibits seasonal fidelity to feeding grounds off the West Coast of the United States and Canada. Whales that are photo-identified within the region between northern California and northern Vancouver Island (from 41°N to 52°N) during the summer feeding period of June 1 to November 30, in two or more years, are defined by the IWC as belonging to ~~this group~~the PCFG (IWC, 2011a; IWC, 2011b; IWC, 2011c). NMFS has adopted this definition (Carretta et al., ~~2015~~2017).

Scientists have ~~observed~~studied the PCFG for several decades and NMFS has monitored the PCFG for evidence of stock structure for more than 15 years. The size of the group has remained relatively stable at about 200 animals since ~~2003 (Carretta~~2002 (Calambokidis et al., ~~2015~~2017). Notwithstanding their small numbers relative to the larger ENP gray whale stock, about 40 percent of gray whales in the Makah Tribe's U&A during the spring ~~has consisted of~~are PCFG animals (Calambokidis et al., 2014). NMFS scientists and others examined the genetic information for evidence that the PCFG is demographically independent (Frasier et al., 2011; Lang et al., 2011b). They found that sampled whales that meet the definition of the PCFG had small but significant differences in the diversity of mitochondrial DNA (mtDNA), which is inherited only from the mother, compared to whales on the northern feeding grounds of the Bering, Chukchi, and Beaufort Seas. However, no significant differences were found between these two groups when nuclear microsatellite data, which represent the DNA inherited from both parents, were analyzed. Similar results were found by ~~the~~ other researchers (~~Frasier et al., 2011,~~ D'Intino et al., 2013~~), even though the~~) despite sample ~~sets~~set differences used to represent the PCFG and the larger ENP stock ~~differed between the two studies. Both groups concluded that these~~. These results indicate that (1) structure is present among gray whales using different feeding areas, (2) matrilineal fidelity plays a role in creating such structure, and (3) individuals from different feeding areas may interbreed. In other words, calves likely follow their mothers to feeding areas and to some extent they return to those feeding areas in subsequent years. ~~(Lang et al., 2011b also note~~

~~that 59 percent of PCFG whales of known sex are female.)~~ Whales that frequent one feeding area, however, are not necessarily reproductively isolated from whales that frequent other feeding areas.

Based on this evidence, the IWC concluded that it is plausible that the PCFG is demographically distinct and the group's dynamics warranted further investigation (IWC, 2011a) to better inform and analyze the impact of the Tribe's hunt on these whales, which it has done (discussed further below in the analysis of effects). The IWC does not have an equivalent stock identification process as provided for domestically under the MMPA. However, the IWC continues to set catch limits for "gray whales from the Eastern stock in the North Pacific" as a single group (IWC, 2012) and has ~~recently~~ convened ~~several workshops~~a series of beginning in 2014 to review the range-wide status and structure of North Pacific gray whales (IWC, 2014; ~~IWC, 2015).~~2015; 2016; 2017). A final workshop is scheduled for March 2018.

Domestically, under the MMPA, NMFS considered whether the PCFG warrants designation as a stock through the SAR process. Over the past several years and in response to new studies, NMFS has issued SARs evaluating this issue (78 FR 19446, April 1, 2013; 79 FR 49053, August 19, 2014; 80 FR 50599, August 20, 2015). NMFS continues to ~~conclude~~find that the existing information ~~on population dynamics is~~does not ~~sufficiently well quantified to indicate~~support a conclusion that the PCFG is a stock. ~~The current SAR (Carretta~~This finding is based in part on the deliberations of a NMFS task force that found the evidence was equivocal as to whether the population dynamics of the PCFG are more a product of internal recruitment (calves coming to the area with mothers) versus external recruitment (whales recruiting to the area who are not calves of PCFG mothers) (Weller et al~~., 2015~~. 2013). The current SAR (Carretta et al., 2017) represents NMFS' determination on this issue, although NMFS will continue to evaluate through the SAR process any new science on this issue as it does for the identification of marine mammal stocks in general. Accordingly, this waiver process applies at the level of the ENP gray whale stock as a whole (which includes whales in the PCFG), since that is the stock NMFS recognizes.

As previously described, NMFS' regulations define OSP as a population size ranging between a stock's carrying capacity (K) and maximum net productivity level

(MNPL). Punt and Wade (2012) analyzed the status of the ENP gray whale stock relative to OSP. They concluded that the MNPL level for the ENP was approximately 66 percent of K. They estimated the 2009 population to be at 85 percent of K, and at 129 percent of MNPL, with a probability of 0.884 (88 percent chance) that the population is above MNPL. Those results were consistent across all the model runs and with previous assessments, and supported a finding that the population was within OSP (Punt and Wade, 2012; see also 75 FR 81225, December 27, 2010). This conclusion has been accepted by NMFS through the SAR process, as the best ~~scientific~~ information available ~~from the SAR~~ (Carretta et al., ~~2015), which~~2017). The most recent SAR notes that abundance will continue to fluctuate in response to human and natural factors affecting carrying capacity, "[e]ven though the stock is within OSP" (Carretta et al~~., 2015~~. 2017). The report states "[t]his is consistent with a population approaching K" (Carretta et al., ~~2015~~2017). In 2012, the IWC Scientific Committee reviewed the analysis of Punt and Wade (2012) and agreed that the results were within the bounds considered in the Committee's gray whale assessment. Thus, through the SAR process, NMFS has found that the best scientific information available indicates that the ENP gray whale stock is at OSP.

The most recent SAR calculates the PBR for the ENP gray whale stock to be 624 whales per year (Carretta et al., ~~2015~~2017). The primary source of human-caused mortality is the Chukotkan hunt, which took ~~127~~128 whales per year on average from ~~2008~~2012 to ~~2012.~~2016 (IWC, 2017). Other sources of human-caused mortality in U.S. waters, such as ship strikes and entanglement in fishing gear, result in about 6 ENP gray whale deaths per year. The SAR does not calculate a separate PBR for ENP gray whales in U.S. waters, nor report on human-caused mortality outside of U.S. waters except for ENP gray whales killed in the Chukotkan hunt. This is in contrast to WNP gray whales, for which the SAR does calculate a PBR for U.S. waters only (Carretta et al. 2017). NMFS guidance on preparing stock assessments (NMFS, 2016) advises calculating a PBR for U.S. waters for transboundary stocks when there is no international conservation regime in place.

Although NMFS does not recognize the PCFG ~~to be~~as a separate stock, the ~~most recent SAR (~~2012 ENP gray whale report (published in Carretta et al., ~~2015) also~~

~~calculates~~2013) and subsequent SARs have reported on population parameters and calculated a separate PBR for the PCFG, "[b]ecause the PCFG appears to be a distinct feeding aggregation and may warrant consideration as a distinct stock in the future." The term "distinct feeding aggregation" is used by biologists in the scientific literature to describe concentrations of whales that forage in a specific area but the term is not intended to signify that such whales constitute a 'stock' as that term is defined under the MMPA. The SAR notes that calculating this separate PBR "allows NMFS to assess whether levels of human-caused mortality are likely to cause local depletion within this population." In other words, if human-caused mortality for the PCFG is less than or equal to its PBR, we would expect the PCFG to maintain its presence in the PCFG feeding area at a level equivalent to a "theoretical OSP range" for the group, or to eventually achieve its theoretical OSP if the PCFG is currently below this level. (By "theoretical OSP range" we mean a range that is between the carry capacity of the PCFG area during the summer feeding period and a level below carrying capacity that that is analogous to MNPL). It is unknown whether the PCFG, if it were eventually designated a stock, would be within OSP due to uncertainties in population parameters such as emigration and immigration rates, bycatch mortality, and recruitment (Punt and Moore, 2013). ~~The PBR reported for the PCFG in Carretta et al. (2015) is 3.1 whales per year and human-caused mortality is reported as 0.25 whales per year, which~~

Consistent with agency practice (NMFS, 2016), PBR calculations reported in the SARs for PCFG whales rely on a minimum abundance estimate or 'Nmin.' Nmin is the lower 20th percentile of the distribution of the most recent mark-recapture estimate and is the value selected by Wade (1998) in developing the PBR methodology. The most recent assessment of PCFG whales (Calambokidis et al., 2017) estimates the PCFG abundance in 2015 at 243 whales with an Nmin of 228. It also notes that PCFG abundance estimates "show a high rate of increase in the late 1990s and early 2000s" and "now appear to be relatively stable since 2002." The table below shows the abundance estimates and minimum population estimates for the PCFG during the available time series.

Year	Abundance Estimate	Minimum Population

		Estimate
1996	38	36
1997	80	72
1998	126	117
1999	145	133
2000	146	135
2001	178	167
2002	197	185
2003	207	193
2004	216	202
2005	215	194
2006	197	180
2007	192	171
2008	210	195
2009	208	191
2010	200	184
2011	205	192
2012	217	208
2013	235	224
2014	238	222
2015	243	228

The most recent SAR (Carretta et al., 2017) reports human-caused mortality of PCFG whales in U.S. waters as 0.25 whales per year, based on data from 2008 through 2012. This is a minimum estimate because not all whales killed as a result of human causes are necessarily documented. Similar to the analysis for the entire ENP stock, the SAR does not calculate a separate PBR for PCFG whales in U.S. waters, or report on human-caused mortalities outside of U.S. waters. It is uncertain whether there would be sufficient information and an appropriate methodology to calculate a U.S.-only PBR for PCFG whales.

The ~~most recent~~ SAR ~~(Carretta et al., 2015)~~ identifies a variety of concerns for

ENP gray whales, including injuries due to fisheries, ship strikes, and marine debris, as well as a number of habitat concerns ~~for ENP gray whales. Industrialization~~such as industrialization, pollution, and shipping congestion throughout the nearshore migratory corridors ~~increase risks from pollutants and ship strikes~~. Climate change, especially in Arctic waters, is likely to affect the availability of habitat and prey species, ~~especially for shell-forming species subject to increased ocean acidification.~~but species such as gray whales (which feed on both benthic and pelagic prey) are expected to adapt better than trophic specialists (Bluhm and Gradinger, 2008). Human exploration activities (e.g., for oil and gas deposits) are also expected to increase in the Arctic and elsewhere, which in turn could increase risks to whales from spills, ship strikes, and anthropogenic noise. The SAR does not indicate that these factors are a threat to the OSP status of the ENP stock at this time~~, noting that the stock has been fluctuating around its average carrying capacity for the last 30 years and will continue to do so as the population adjusts to natural and human-caused factors affecting carrying capacity~~.

Section 101(a)(3)(A) of the MMPA requires that a waiver and regulations "must . . . [h]ave due regard to the distribution, abundance, breeding habits, and times and lines of migratory movements of the marine mammal stock potentially subject to take" (16 U.S.C. §1371(a)(3)(A)). The DEIS contains a detailed discussion of these factors, which we summarized in a separate biological report (NMFS, ~~2017~~2018). In that report we describe these factors and also examine the feeding ecology of ENP gray whales.

II. Proposed Regulations

The Tribe's 2005 request included a harvest level of 20 ENP gray whales every 5 years, and a limit of 7 strikes per hunting season. It also included provisions to observe IWC regulations, achieve ~~the~~a recommended management goal of avoiding "local depletion" of PCFG whales, safeguard public and hunter safety, and preserve cultural aspects of the hunt while promoting humaneness.

The proposed waiver and regulations would authorize a limited hunt by the Makah Indian Tribe for ENP gray whales in the coastal portion of the Tribe's U&A. ~~The~~In addition to information reviewed in the DEIS, the proposed regulations are informed by the Tribe's initial request~~,~~; new scientific information available since the

Tribe's initial request~~, and~~; public, tribal, and MMC comment on the two DEISs~~,~~ and MMC comment on initial draft regulations; and the agency's gray whale SARs. They also reflect our consultation with the Makah Tribe pursuant to Executive Order 13175 ~~on consultation with tribes~~, as well as~~,~~ our consultation with the MMC pursuant to the MMPA.

The proposed regulations would be effective for a 10-year period, in contrast to the Tribe's request for permanent regulations. We conclude that permanent regulations would not adequately allow for modifications to the regulations based on hunt monitoring or new scientific information that may become available in the future, and that 10 years is a short ~~-~~enough period to allow for meaningful reconsideration based on any new information (e.g., if the Tribe were to seek a subsequent waiver). The proposed regulations respond to the ~~Tribes'~~Tribe's application and the requirements of the MMPA by, among other things: (1) imposing various restrictions designed to ensure that a hunt (and hunt training) poses limited risk to any WNP gray whales that might be encountered, (2) limiting impacts on PCFG whales to achieve ~~the~~NMFS' management goal of avoiding local depletion, and (3) complying with international obligations of the United States under the ICRW.

The MMPA and implementing regulations do not define or contain requirements regarding local depletion, nor has the agency developed guidance defining that term. ~~In adopting the Tribe's management goal in the proposed regulations (avoid~~One option would be to interpret local depletion~~), we define it~~ to mean ~~that the hunting regime would not contribute to PCFG abundance being~~a level below ~~its~~the theoretical OSP range. Another option, similar to the approach taken by Weller et al. (2013), would be to consider local depletion in the context of a drop in PCFG abundance below levels seen during the period of recent stability. We rely on both of these options as explained in more detail below. We note that ~~this interpretation~~our approach is unique to the specific circumstances of the PCFG in the context of the Tribe's request. In addition to limiting mortality to achieve the management goal of avoiding local depletion, the proposed regulations limit the number of whales that may be approached or subjected to unsuccessful harpoon attempts. The management goal of these provisions is to limit the potential risk of whales being disturbed by non-lethal hunt-related interactions.

A. Managing Risk to WNP Whales

The Tribe originally proposed limiting the hunting season to the period December 1 through May 31, when most ENP gray whales are migrating to and from northern feeding grounds (the "migration season"), to minimize the potential that a PCFG whale would be killed. Scientists subsequently observed WNP whales in the ENP, including whales off the Tribe's U&A, during the migration season. (Mate et al., 2015). This creates the possibility that a tribal hunt at that time could kill a WNP whale, which the Tribe has not requested, is not internationally authorized, and cannot be authorized through an MMPA waiver. To limit the risk of a WNP whale being killed, the proposed regulations would authorize a hunt during the migration season with two important restrictions: (1) hunting would only be allowed every other year, proposed for even years, and (2) only three whales could be struck in an even-year hunt. (The Tribe's proposal presumed that a struck whale would die, which is the same presumption we made in our analyses supporting the proposed regulations.). Additional restrictions would limitrestrict the number of attempted strikes and approaches, to limit potential risk of interactions withbetween hunters and WNP whales.

The proposed regulations would also allow up to two strikesauthorize a hunt in odd year hunts years during the period from feeding season (July 1 through October 31,), when WNP whales would be feeding in the western North Pacific ("feeding season"). Because WNP whales are not expected to be in the Tribe's U&A during the feeding season, authorizing a hunt at this time would avoid impacts to WNP whales. The potential impacts of odd-year hunts on PCFG whales, and the restrictions aimed at limiting those impacts, are discussed in the following section.

As described further in the section below, "*Effect of the proposed waiver and regulations on the WNP gray whale stock*," these limits result in about a 3 percent chance that a WNP whale would be struck during the 10-year duration of the regulations, or considered another way, the Tribe would be expected to strike one WNP whale out of every thirty 10-year periods (i.e., every 300 years) if tribal hunters struck the full number of whales allowed in each even-year hunt (Moore and Weller, 2017in prep). The discussion below under *Effect of the proposed waiver and regulations on the WNP gray whale stock* also explains our conclusion that this level of risk is acceptable under the

MMPA.

The proposed regulations contain additional provisions to limit the risk to WNP whales. For example, in addition to limits on strikes, the Tribe would be limited to 18 unsuccessful strike attempts in even-year hunts (when WNP whales might be present) and 353 approaches per year. (This is the maximum number of approaches analyzed in the DEIS, based on the Tribe's estimate of numbers of whales approached during the 1999 and 2000 hunts.) Over the 10-year duration of the regulations (and assuming all unsuccessful strike attempts and approaches are made) there is a 17 percent chance that at least one WNP whale would be subjected to an unsuccessful strike attempt and a 93 percent chance that one or more WNP whales would be approached. Considered another way, it is expected that the Tribe would make an unsuccessful strike attempt on one WNP whale every 57 years and approach about 8 WNP whales over 10 years (Moore and Weller, ~~2017~~in prep).

During an even-year hunt, the Tribe may strike only one whale in a 24-hour period as a precaution against striking multiple WNP gray whales that might be travelling together in a group (Weller et al., 2012). Once a whale is landed in an odd-year hunt the Tribe would cease hunting for that season. In an even-year hunt, once a whale is landed the Tribe would not be able to issue an additional hunting permit until NMFS has notified the Tribe whether the landed whale was a WNP whale. In the unlikely event the Tribe did strike a WNP whale (in either an even- or odd-year hunt), all hunting would cease unless and until the Regional Administrator determines that measures have been taken to ensure that no additional WNP gray whales are struck during the duration of the existing permit and the remainder of the waiver period.

B. Managing Impacts on PCFG Whales

Although the PCFG is not recognized as a stock, the Tribe's initial request for a waiver proposed a number of measures in addition to the seasonal restriction described above aimed at avoiding local depletion of PCFG whales. The proposed regulations ~~also aim to avoid such depletion as we define it and include measures~~adopt that ~~would limit~~ management goal and consider the impacts ~~to PCFG whales to ensure that the~~ of a tribal hunt ~~does not prevent ENP gray whales from maintaining or achieving their presence in the PCFG feeding area at a level that is within their~~ both on the theoretical OSP ~~range.~~of

the PCFG and on the current abundance of the PCFG.

Consistent with the Tribe's proposal, the proposed regulations authorize hunting only in the coastal portion of the Tribe's U&A. Hunting in the Strait of Juan de Fuca is prohibited in part as a human safety measure, but also because during the migration season there is a higher proportion of PCFG whales in the Strait. The regulations also limit the number of strikes, attempted strikes, and approaches on PCFG whales. Approaches associated with hunt training are allowed in the coastal portion of the Tribe's U&A and counted towards the overall approach limit.

The proposed regulations differ from the Tribe's proposal in how PCFG mortality would be regulated to avoid local depletion. The Tribe's proposal would set an annual harvest limit on PCFG whales equal to total PBR, not accounting for struck and lost whales or other sources of human-caused mortality. within or outside U.S. waters. In contrast, the proposed regulations rely onemploy seasonal strike limits as the primary method of limiting PCFG , a mortality with an additional protective measure in the form of a PBR limit that is adjusted to account for other sources of human-caused mortality ("adjusted PBR").of 16 PCFG whales over the 10 years of the regulations (of which no more than 8 may be females), and a provision to cease hunting if PCFG abundance drops below a set number of whales. Struck and lost whales are counted against the adjusted PBR PCFG mortality limit. The most recent SAR (Carretta et al. 2015) reports a PBR for PCFG whales of 3.1 and a current level of annual human-caused mortality of 0.25 (based on the SAR's 5-year data summary), which would result in an adjusted PBR of 2.85 (or 28.5 over the 10 years of the regulations if current conditions continue).

As noted above, to protect WNP whales, the proposed regulations would limit to 3 the number of strikes authorized during the migration season in even-year hunts, and move hunts to the summer feeding season during odd-numbered years, when WNP whales are not expected to be in the hunt area. For odd-year hunts, when all whales struck would count as PCFG whales, the proposed regulations would impose a 2-strike limit, to manage impacts to PCFG whales. As an additional protection for PCFG whales, the proposed regulations would limit the landing of whales in odd-year hunts to one whale per year, creating the potential for a single strike during odd-year hunts.

The combination of a 3-strike limit during the migration season in even-year

hunts (when PCFG whales are mixed with the broader migrating population and about 40 percent of animals encountered in the hunt area are expected to be from the PCFG) and a 2-strike limit during the feeding season in odd-year hunts (when whales encountered are likely to be PCFG whales) would result in an expected mortality of 16 PCFG whales ~~being killed~~ over 10 years if strike limits ~~are~~were reached in all years~~.~~, or an annual average mortality of 1.6 PCFG whales. This expected mortality estimate is based on a likelihood that 6 PCFG whales would be killed in even-year hunts (3 strikes times 40 percent = 1.2 PCFG whales per year, times 5 years of even-year hunts, for a total of 6 PCFG whales over 10 years) and 10 PCFG would be killed in odd-year hunts (2 strikes times 100 percent = 2.0 PCFG whales per year, times 5 years of odd-year hunts, for a total of 10 PCFG whales over 10 years). ~~As reported in the most recent SAR (Carretta et al., 2015), abundance estimates for PCFG whales have been relatively stable since 2003, fluctuating between 194 and 219 animals and most recently estimated at 209 whales (Calambokidis et al., 2014). The annual harvest of 1.6 PCFG whales is much lower than the adjusted PBR for PCFG whales. It is also much lower than the PCFG's average year-to-year change in abundance (plus or minus 9 animals per year since 2003; Calambokidis et al. 2014), and less than the number of new whales that would be expected to recruit to the feeding area over the 10 years of the regulations, which would be about 4 animals per year or 40 whales over 10 years based on genetic simulations (Lang and Martien, 2012). Even if killed whales were not replaced with new recruits, the potential removal of 16 PCFG whales over 10 years from a population of 209 animals would reduce the PCFG to 193 animals, which is not significantly different than the lowest abundance estimated (194 whales) during this recent period of stability. Therefore, we would not expect the primary strike limits (3 in even-year hunts and 2 in odd-year hunts) to substantially reduce the abundance of PCFG whales or contribute to the PCFG not maintaining or achieving its theoretical OSP.~~To ensure this expected level of PCFG mortality is not exceeded, the proposed regulations would impose a 10-year mortality limit (or strike limit) of 16 PCFG whales of which no more than 8 may be females. Setting a strike limit on PCFG females is a precautionary measure given recent evidence that maternally directed site fidelity contributes to the population structure of the PCFG (Frasier et al., 2011; Lang et al., 2011).

In the unlikely event that all whales struck during the 10-year hunt period (regardless of season) were PCFG whales, the total number of PCFG whales killed would amount to 2.5 annually (3 strikes in even-year hunts plus 2 strikes in odd-year hunts = 5, divided by 2 = annual average of 2.5), or 25 PCFG whales over the 10-year period of the regulations. These higher levels would still be lower than the adjusted PBR for PCFG whales, and much lower than the PCFG's expected recruitment over the 10-year period and the recently observed year-to-year change in abundance.

Limiting PCFG mortality to an adjusted PBR provides additional assurance against local depletion in the hunt area. The adjusted PBR of 2.85 (or 28.5 over the 10 years of the regulations if current conditions continue) is greater than the maximum PCFG mortality that could occur under the proposed regulations if tribal hunters struck the full number of whales authorized. It is also greater than the expected PCFG mortality likely to occur under the proposed regulations based on presence of PCFG whales in the Tribe's U&A.

The table below displays the likely and maximum mortality of PCFG whales that might occur under the proposed regulations, as compared to the adjusted PBR limit under current conditions.

	Strike Limit		**Likely PCFG mortality**		**Maximum PCFG mortality**		**Adjusted PBR limit under current conditions**	
	Annual	10-year	Annual	10-year	Annual	10-year	Annual	10-year
Even-year hunt	3	15	1.2	6	3	15	**2.85**	**28.5**
Odd-year hunt	2	10	2	10	2	10		
Total	**2.5**	**25**	**1.6**	**16**	**2.5**	**25**		

In counting struck whales against this adjusted PBR16-whale limit, the regulations propose that all whales struck during odd-year hunts would count as PCFG whales. For whales that are landed during an even-year hunt, NMFS would compare

photographs of the landed whale to photographs of known PCFG whales. (Tissue samples may also be used if genetic data are available to inform the identification.) Whales identified as PCFG whales would count as 1 whale against the PCFG mortality limit. Whales that are struck and lost would be counted in proportion to the presence of PCFG whales identified in the Makah Tribe's U&A, unless there were sufficient photographs of the struck and lost whale to identify it as a PCFG whale or as not a PCFG whale. Females are expected to comprise 50 percent of the PCFG (A. Lang, NMFS, personal communication) and that percentage would be factored into the accounting for struck and lost whales against the 8-whale limit described previously for PCFG females.

~~Two provisions in the proposed regulations are designed to prevent the Tribe from accidentally exceeding the PCFG mortality limit. For example, the Tribe would not be allowed to hunt if the PCFG mortality limit is less than one, either at the beginning of the season or as a result of in-season accounting for struck and lost or landed whales. Also, once a whale is landed in an even-year hunt, the Tribe would not be able to issue an additional hunting permit until NMFS has notified the Tribe whether the landed whale was a PCFG whale.~~

In addition to the seasonal strike limits and PCFG strike limits, the proposed regulations would not allow hunting in a given year if the estimated PCFG abundance for that year is below 192 whales or the Nmin is below 171 whales (low abundance triggers). Published population estimates typically lag one or more years behind the most currently available survey data, so estimates for the upcoming hunting season will be projected using a population forecast model fit to the time series of data. The threshold values of 192 and 171 represent the best and minimum (20th percentile) estimates of abundance for the PCFG in 2007. These are the lowest values estimated for the population during the recent period of stability starting in 2002 (Calambokidis et al., 2017). This combination of measures is intended to manage hunting so that it does not contribute to reducing the population to levels below those observed since 2002 or below its theoretical OSP.

We have not followed a PBR approach in the proposed regulations, based on a number of considerations. Public comments on the DEIS and Marine Mammal Commission comments on the initial proposal we presented to them for consultation under Section 101(a)(3)(A)(1) (16 U.S.C. §1371(a)) pointed out that a PBR approach

should account for total human-caused mortalities, including those outside U.S. waters. As noted above, the SAR for ENP gray whales (Carretta et al., 2017) calculates only an overall PBR for the PCFG and not an allocation of PBR for U.S. waters (in contrast to the treatment of WNP gray whales), and reports only human-caused mortality in U.S. waters. Though future SARs might attempt such estimates, the information to do so is incomplete and we anticipate such an estimate may be many years away.

Additionally, informed by the DEIS, best available science and best professional practice, in this context we do not find the PBR approach to be the best tool to address risk to the PCFG. The PBR approach is appropriate for managing chronic population removals over a long time period (decades) but less relevant for evaluating impacts of removals occurring once or for a relatively short time period such as the 10-year waiver period contemplated in the proposed regulations. Also, the PBR approach was developed as a precautionary way to manage stocks for which relatively little data about their abundance exists (imprecise and infrequent estimates), trends, and productivity (Wade, 1998). When population dynamics are well-understood (e.g., population size and growth are measured accurately in near real time), such as for the PCFG, management decisions can be better informed than from reliance on a PBR approach. In the case of the PCFG, we have over 20 years of annual surveys that, relative to other cetacean populations, yield relatively precise abundance estimates. These estimates in turn allow us to employ a population forecast model (mentioned above) to assist in making more timely decisions regarding the PCFG (NMFS, 2018). The alternative method we propose for controlling PCFG mortality via a strike limit and an abundance trigger (observed and forecasted) relies on currently available and regularly updated information, as described further in the following discussion. Such an approach is appropriate for a feeding aggregation such as the PCFG where population information is readily available.

We first considered that Punt and Moore (2013) concluded there is not enough information to determine if the PCFG is within OSP. They stated that the recent stable period for the PCFG could reflect the fact that the population is at K, or it could be that the PCFG area would support more whales but the number is regulated by human-caused mortality and emigration that offsets immigration and internal production. Given the uncertain status of PCFG whales relative to OSP, we first considered the impact of the

loss of 16 whales over 10 years on the status of the PCFG relative to its recent abundance levels and trends and what we know about immigration into the PCFG.

Lang and Martien (2012) estimated that a likely level of external immigration into the PCFG (that is, animals that did not come into the PCFG as calves with mothers) was about 4 whales per year from 2004 to 2008, within the period of relative stability. Over the 10 years of the regulations, that would result in 40 new animals immigrating into the group, which is more than 3 times as many animals as the maximum of 16 that could be killed under the regulations. Thus, even with likely emigrations and deaths there would not be a net loss.

We also considered the most recent population estimate of 243 PCFG whales (Calambokidis et al., 2017) and the population trends since 2002, which have been relatively stable and recently increasing. Based on the recent 14-year stable period for the PCFG the forecast model projects that the PCFG will continue to grow, with or without hunting. For example, the model projects that at the end of a 10-year hunting period that began in 2018, the PCFG would number 298 animals without hunting versus 281 animals with hunting (1.6 whales per year), which is well above the 2007 low abundance level of 192 whales. If the population remains at the most recent (2015) level of 243 whales, the death of 16 whales over 10 years would result in an abundance level of 227 animals. That is an abundance that is well above the low abundance of 192 whales estimated in 2007, a level from which the PCFG was able to grow over 25 percent in 8 years (that is, from 192 whales in 2007 to 243 whales in 2015) (Calambokidis et al., 2017).

We also considered the strike limit of 16 whales over 10 years, or 1.6 whales per year on average, against the overall PBR in light of available estimates of human-caused mortality in U.S. and Canadian waters, the primary range of the PCFG. The most recent SAR (Caretta et al., 2017) calculates a PBR of 3.1 PCFG whales per year and reports human-caused mortality in U.S. waters of 0.25 whales per year. If human-caused mortality were similar in Canadian waters and both U.S. and Canadian estimates were added to mortality from a hunt, the result would be an overall human-caused mortality of 2.1 PCFG whales per year which is still well below the calculated PBR. Using different methods than the SAR, Scordino and Mate (2011) estimated PCFG human-caused mortality at 1.83 whales per year in the area from California (1990-2010 data) through

British Columbia (1990-1995 data). Scordino et al. (2014) estimated human-caused mortality in the same area plus southeast Alaska at 2.3 PCFG whales per year (2008-2012 data). While some stranding data are available for Mexican waters (Jones and Swartz, 1986; Gulland et al., 2005), there are no reliable estimates of PCFG human-caused mortality for that area and the PCFG represents a very small proportion (less than 1 percent) of the entire ENP gray whale stock using Mexican waters. Based on the estimates from Scordino et al. (2014), an additional 1.6 PCFG whales per year killed in a tribal hunt does have the potential to result in human-caused mortality exceeding the current PBR estimate (1.6 whales in a tribal hunt plus 2.3 whales from other sources would equal a total human-caused mortality of 3.9 whales per year, which is higher than the current PBR of 3.1 whales per year).

Since it is possible that PCFG abundance will decline in the future rather than increase, we propose an additional protection beyond the 16-strike limit, which is a low abundance trigger that would require hunting to stop if the PCFG reached a certain abundance level. We chose the lowest level seen during the recent period of relative stability, which is 192 animals in 2007, because it is a level from which we observed the population to grow by 25 percent over 8 years, as described above. (We note that a population decline of 51 PCFG whales (from 243 to 192) would be the result of causes other than a tribal hunt, since a tribal hunt would be limited to 16 PCFG whales killed.)

Recognizing that PCFG abundance estimates may become less precise and reliable if monitoring decreases, or may lag behind real-time hunt management, the proposed regulations include two additional measures to address these potential concerns. The first is that in addition to the low abundance trigger of 192 whales, the regulations include an Nmin trigger of 171 whales. If changes in monitoring (e.g., fewer field surveys) decrease the precision of an abundance estimate, then we would expect to see a related decline in the associated Nmin estimate. This is further described in the biological report accompanying this proposed rule (NMFS, 2018). The second measure is to estimate PCFG abundance and Nmin based on the forecasting model each year before hunting begins. For example, if we relied only on population estimates from completed field surveys, and the estimates lag on average 2 years behind real time, we might not detect a population decline and hunting could occur even though the population had

declined to the low abundance trigger. By using the model to forecast real-time estimates, the regulations mitigate for that risk. An example of this is also described in the accompanying biological report.

We tested the selected low abundance triggers against available information about PCFG abundance. As noted above, Punt and Moore (2013) could not determine OSP parameters for the PCFG and therefore could not determine whether the PCFG is currently within a theoretical OSP. Nevertheless, we can make some provisional conclusions about OSP parameters for this group. The most recent population estimate of 243 whales in 2015 is the highest abundance estimated for the PCFG. Since that time we have not seen the PCFG react in a way that would suggest it had exceeded K (such as a rapid population decline). Therefore, it is reasonable to conclude that K for this group must be at least 243 animals. Punt and Wade concluded that MNPL for the ENP population was 66 percent of K. If the same is true for the PCFG, then the lowest possible MNPL level for the PCFG would be 160 whales. The threshold we selected is well above this level and is closer to the level obtained if one assumed that K is 290 animals (i.e., a value our model projects the PCFG could achieve by 2028 if it continues to grow).

As is the case for WNP whales, limits on approaches and unsuccessful strike attempts are intended to limit the risk of non-lethal interactions to PCFG whales.

~~In utilizing the adjusted PBR limit, we note that Congress included the PBR formula in the MMPA as a method for monitoring and managing marine mammal mortality incidental to commercial fishing operations (NMFS, 1992) and not as a method for managing potential harvest of marine mammals. The proposed regulations address these concerns by setting a primary strike limit likely to result in mortality well below the level that could lead to local depletion (see rationale above regarding the expected mortality of 16 PCFG whales); the adjusted PBR limit is included as an additional protective measure. The regulations also respond to these concerns in the way that the adjusted PBR limit is structured, specifically (1) it is used to set a mortality level rather than a harvest level (that is, it is a limit rather than a target and it accounts for all whales that are struck during a hunt and not just whales that are landed), and (2) it accounts for other sources of human-caused mortality. Finally, the PCFG is not recognized as a marine mammal stock under the MMPA, thus we incorporate these protections to meet~~

~~the management goal of avoiding local depletion and not due to MMPA requirements related to maintaining stocks at OSP levels. For these reasons we conclude that the adjusted PBR limit is an appropriate additional tool in this case, where the goal is to avoid local depletion of a feeding aggregation that is not recognized as a marine mammal stock.~~

The proposed regulations impose these restrictions on PCFG mortality to meet the management goal of avoiding local depletion of this feeding aggregation and not due to MMPA requirements related to maintaining stocks at OSP levels, because the PCFG is not recognized as a marine mammal stock under the MMPA. In section IV below we discuss our conclusions regarding the consistency of this proposed management regime with MMPA principles of resource protection.

C. Managing Other Aspects of the Hunt

The Tribe proposed harvesting an average of 4 and maximum of 5 whales per year, consistent with the current IWC catch limit issued in response to the joint request of the United States and Russian Federation. To date, the catch limit has been implemented through a series of yearly agreements signed by the United States and Russia. The proposed regulations acknowledge this process and provide that the number of ENP gray whales the Tribe may harvest will not exceed the annual number agreed between the United States and Russian Federation as the U.S. share of the catch limit established by the IWC. Given the strike limits in the proposed regulations, the Tribe would be unable to harvest 4-5 whales per year as specified under the current catch limit. In an even-year hunt the strike limit would restrict the harvest of whales to a maximum of three and in an odd-year hunt the regulations would limit the number of whales that could be harvested to one. The regulations would also limit the Tribe to no more than three struck and lost whales in any calendar year.

The Tribe proposed hunting from canoes using toggle point harpoons to strike and secure whales and a .50 caliber rifle to kill whales. The proposed regulations do not specify a method of hunting but instead refer to the permitting process, which would follow the adoption of final regulations. The permitting provisions of the MMPA require that permits must specify, among other things, the manner in which marine mammals may be taken, which NMFS must determine is humane. The MMPA defines 'humane' as

"that method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved" (16 U.S.C. §1362(4)).

III. Section-by-Section Discussion

Section 216.110 – Purpose. To establish regulations governing the take of ENP gray whales by the Makah Indian Tribe.

Section 216.111 – Scope. Authorizes only the taking of ENP gray whales and only by enrolled members of the Makah Indian Tribe.

Section 216.112 – Definitions. Incorporates the definitions in other regulations governing the take of marine mammals, unless the terms are defined otherwise in this section:

(z) "Bonilla-Tatoosh Line" is defined according to the Makah Tribe's whaling ordinance.

(aa) "Calf" is defined consistent with the WCA definition as any whale less than 1 year old. The WCA definition includes an animal with milk in its stomach. That provision is not included here because it would not be possible for a tribal hunter to determine that fact until after a whale had been killed and landed.

(bb) "Enrolled member" or "member" of the Makah Indian Tribe is a person on the official tribal membership roll.

(cc) "ENP gray whale" is defined with reference to the NMFS SAR.

(dd) "Even-year hunt" is defined as a 6-month hunting season from December 1 in an odd-numbered year to May 31 in the following even-numbered year.

(ee) "Gray whale" means a member of the species *Eschrichtius robustus*.

(ff) "Harpooner" is one of several definitions of Makah tribal members who have designated roles in a hunt and have been certified by the Tribe as having the training and qualifications for that role.

(gg) "Humane" has the same meaning as contained in 50 CFR 216.3.

(hh) "Hunt" and "hunting" are defined to include activities associated with a hunt: pursue, strike, harpoon, shoot or land an ENP gray whale or to attempt any such act. A "hunt" means any act of hunting. Hunting approaches, training approaches, and training harpoon throws are defined separately because there are distance and weapon provisions specific to those activities.

(ii) "Hunt permit" is defined as a permit issued by NMFS under these regulations to hunt ENP gray whales and to approach and to make training harpoon throws on such whales as part of a hunt or hunt training.

(jj) "Hunting approach" means to cause, in any manner, a vessel to be within 100 yards (91 m) of a gray whale during a hunt. The 100-yard limit is consistent with permit conditions NMFS imposes for research vessels on large cetaceans (e.g., 60 FR 3775, January 19, 1995; 66 FR 29502, May 31, 2001), as well as guidelines for all motorized and non-motorized vessels as defined in NMFS "Be Whale Wise" guidelines that recommend staying 100 yards (91 m) from all marine mammals, noting that there is a regulation prohibiting approaches closer than 200 yards (183 m) for killer whales in inland waters of Washington (50 CFR 103(e)).

(kk) "Land" and "landing" are defined as bringing an ENP gray whale, including parts, onto land in the course of hunting.

(ll) "Makah Indian handicrafts" are defined as articles made by Makah tribal members that contain nonedible products of an ENP gray whale, ~~and~~ are significantly altered from their natural form. They cannot be produced through various methods of mass production. The definition gives examples of the types of articles contemplated but is not limited to those examples.

(mm) "Makah Indian Tribe" or "Tribe" is defined as the entity described in the list of federally recognized Indian tribes maintained by the U.S. Department of the Interior.

(nn) "Minimum population estimate" for PCFG gray whales is defined as the lower 20th percentile of the PCFG population estimate and is denoted as 'Nmin.'

~~(nn)~~(oo) "NMFS hunt observer" is defined as a person authorized by NMFS to accompany and observe a hunt. We anticipate that hunting under these regulations will be observed by NMFS~~. In the DEIS we included an estimate of likely costs associated with NMFS oversight, including the cost of providing an observer~~.

~~(oo)~~(pp) "Odd-year hunt" is defined as a hunting season from July 1 to October 31 in an odd-numbered year. The PCFG feeding season is June 1 to November 30. The reason for removing a month from the beginning and end of this season is to provide extra protection against killing a WNP whale during an odd-year hunt.

~~(pp)~~(qq) "Pacific Coast Feeding Group (PCFG) gray whale" or "PCFG whale" is

defined consistent with the IWC definition as gray whales observed in at least 2 years between June 1 and November 30 in the eastern North Pacific between 41° N. lat. and 52° N. lat., excluding areas in Puget Sound. Individually identifiable whales are those entered into a photo-identification catalog(s) recognized by the Regional Administrator.

For many years photo-identification catalogs have been maintained by Cascadia Research Collective, which receives some but not all of its catalog funding for gray whales from NMFS. Several researchers participate in Cascadia's photo-identification program and provide photographs to Cascadia. Photographs taken by researchers under NMFS funding are also provided to NMFS Marine Mammal Lab in Seattle, Washington. Because these regulations would impose constraints to limit the risk of interactions with WNP and PCFG whales, there should be a reliable method of identifying such whales in a variety of circumstances, including: whales in the Makah Tribe's U&A during the migration season in order to be able to estimate their proportion; whales landed in the course of hunting; and whales that are struck and lost in an even-year hunt. For whales that are struck and lost, it may not be possible to make an identification, in which case the regulations would count them as PCFG whales in proportion to their observed presence in the Makah Tribe's U&A during each month.

Because of the importance of the photo-identification process, the regulations require that before issuing a hunt permit to the Tribe, the Regional Administrator must determine that there are adequate photo-identification catalogs and processes available to allow for the identification of PCFG and WNP whales. In addition to the quality of the catalogs, there must be reliable processes in place for making identifications. Currently the Cascadia Research Collective provides this service and has demonstrated an ability to make matches within 24 hours (J. Calambokidis, Cascadia Research Collective, personal communication, 2017). NMFS ~~intends to~~will either develop a contractual mechanism or in-house expertise prior to issuing permits to ensure an adequate catalog is maintained and matches can be quickly made. As an interim step, we have developed a protocol that describes the requirements for an adequate catalog and photo-identification processes (NMFS, 2017 [in prep]).

~~(qq) "Potential biological removal (PBR) level" has the same meaning as contained in 50 CFR § 229.2.~~

(s) "PCFG population estimate" means an abundance estimate based on data derived from photo-identification surveys and catalog(s) recognized by the Regional Administrator. Such data will also be the basis for projecting PCFG population estimates in future hunting seasons

(t) "Recordkeeping" and "reporting" are defined as the collection and delivery of photographs, biological data, harvest data, and other information regarding activities conducted under these regulations, as required by NMFS.

(u) "Regional Administrator" is defined as the Regional Administrator of NMFS for the West Coast Region.

(v) "Rifleman" is one of several definitions of Makah tribal members who have designated roles in a hunt and have been certified by the Tribe as having the training and qualifications for that role.

(w) "Safety officer" is one of several definitions of Makah tribal members who have designated roles in a hunt and have been certified by the Tribe as having the training and qualifications for that role.

(x) "Stock assessment report" is defined as the most recent and final stock assessment produced by NMFS under 16 U.S.C. §1386.

(y) "Strike" or "struck" are defined consistent with the WCA definition as causing a harpoon or other device to penetrate a whale's skin or an instance in which a whale's skin is penetrated by a harpoon or other device while hunting.

(z) "Struck and lost" refers to a whale that is struck but not landed.

(aa) "Take" has the same meaning as contained in 50 CFR 216.3.

(bb) "Training approach" means to cause, in any manner, a training vessel to be within 100 yards (91 m) of a gray whale.

(cc) "Training harpoon throw" is defined as an attempt to contact a gray whale with a blunted spear-like device that is incapable of penetrating a whale's skin.

(dd) "Training vessel" is defined as a canoe or other watercraft used in hunt training that does not carry weapons typically used to strike a gray whale, such as harpoons and rifles.

(ee) "Tribal hunt observer" is one of several definitions of Makah tribal members who have designated roles in a hunt and have been certified by the Tribe as having the training

and qualifications for that role.

(ff) "U&A" or "Makah Indian Tribe's U&A" are defined as the Makah Indian Tribe's usual and accustomed fishing grounds, consistent with the 1855 Treaty of Neah Bay and as adjudicated in *United States.* v. *Washington*, 626 F. Supp. 1405, 1467 (W.D. Wash. 1985).

(gg) "WNP whale" is defined with reference to the NMFS SAR, and as whales that are entered into a photo-identification catalog(s) recognized by the Regional Administrator. Currently there are two WNP whale catalogs maintained by Russian researchers at the Kamchatka and Vladivostok Far Eastern Branches of the Russian Academy of Sciences ~~and the Institute of Marine Biology~~. These catalogs include photographs of whales sighted off Sakhalin Island and Kamchatka in the Russian Far East, with many of the same whales included in both of the catalogs. As with the PCFG catalog, curators of those catalogs are able to quickly make matches between photographs of whales taken by researchers with existing photographs in the catalog. The regulations require, as with PCFG whales, that the Regional Administrator must determine an adequate catalog and photo-identification processes exists for WNP whales prior to issuing a permit. The protocol described above for maintaining a catalog and making matches would also apply to WNP whales.

(hh) "Whaling captain" is one of several definitions of Makah tribal members who have designated roles in a hunt and have been certified by the Tribe as having the training and qualifications for that role.

(ii) "Whaling crew" is defined as those members of the Makah Indian Tribe taking part in a hunt under the control of a whaling captain and accompanied by a tribal hunt observer.

§ 216.113 – Take authorizations. Establishes the authority of the Regional Administrator to issue hunt permits to the Makah Indian Tribe under prescribed conditions and protocols, authorizes the collection of data, authorizes Makah tribal members to approach and practice throws with a training harpoon on ENP gray whales in the course of training, and authorizes the utilization of ENP gray whale products taken in accordance with a hunt permit.

(a) This subsection authorizes the Regional Administrator to issue hunt permits to the Makah Indian Tribe.

(1) *Hunt permit duration.* Pursuant to the MMPA, the maximum term for a permit would be five years. The regulations authorize the Regional Administrator to issue permits effective for up to 5 years, except that the first permit is limited to 3 years. The first few years of hunting may reveal areas for improvement; limiting the term of the initial permit to 3 years ensures that improvements can be made in a timely manner.

(2) *Hunting seasons.* Even-year hunts would only be permitted from December 1 of an odd-numbered year through May 31 of the following even-numbered year. Odd-year hunts would only be permitted from July 1 through October 31 in an odd-numbered year. During the even-year hunt season, both WNP and PCFG whales may be encountered in the hunt area; during the odd-year hunt season, WNP whales are not expected to be present and all whales encountered are presumed to be PCFG whales. Limits on the numbers of whales that may be struck in each season are described later in this subsection and are intended to manage risk to WNP whales and limit impacts to PCFG whales.

(3) *Training period.* Hunt permits may authorize training approaches and training harpoon throws in any month, including outside a hunting season.

(4) *Limits on the number of gray whales approached, subjected to unsuccessful strike attempts, struck, struck and lost, and landed.*

(i) *Approaches*. The hunt permit would authorize no more than 353 approaches of ENP gray whales ~~to be approached~~(both hunting and training approaches) each year, of which no more than 142 of such approaches may be on PCFG whales. As with strikes, approaches are accounted for proportionally in the migrating season and presumed to all be PCFG whales in the feeding season. These values were analyzed in the DEIS and are maximum estimates based on observations during the Tribe's hunt in 2000 (Gearin and Gosho, 2000). The purpose of this provision is to prevent or limit the extent to which WNP and PCFG whales may be encountered and possibly disturbed in the hunt area.

(ii) *Unsuccessful strike attempts*. The hunt permit would authorize no more than 18 gray whales to be subjected to unsuccessful strike attempts in an even-year hunt and 12 gray whales to be subjected to unsuccessful strike attempts in an odd-year hunt. These limits are based on experience gained from Makah gray whale hunts conducted in 1999

and 2000 and, as described in the DEIS, rely on a 6:1 ratio of unsuccessful strike attempts to successful strikes. Also, each training harpoon throw will count as an unsuccessful strike attempt. Similar to the limit on approaches, the purpose of these provisions is to prevent or limit the risk of non-lethal impacts on WNP and PCFG whales. Training harpoon throws are also counted as strike attempts, because the level of impact on whales is expected to be the same as an unsuccessful strike attempt using a hunting harpoon.

(iii) *Strikes.* The hunt permit would authorize no more than ~~3~~three gray whales to be struck in an even-year hunt and no more than two gray whales to be struck in an odd-year hunt. Over the 10-year course of the regulations, these strike provisions limit the risk of a WNP whale being killed to about 3 percent, corresponding to an expectation of one WNP gray whale being killed every 300 years (assuming constant hunt parameters and no change in ENP and WNP population sizes or migration patterns~~), and limit the likelihood of strikes on PCFG whales to 16 (assuming a total of 6 PCFG whales are killed in all even-year hunts and 10 are killed in all odd-year hunts). If all whales struck under these limits were PCFG whales, the hunt authorized by the regulations would kill 25 PCFG whales. Under current conditions, taking into accounting existing levels of human-caused mortality, the adjusted PBR limit for PCFG whales over the 10 years of the regulations would be 28.5.~~). The proposed strike limits are intended to result in minimal risk that a WNP whale will be struck~~, and to result in a hunt that avoids local depletion of~~. The strike limits would also limit strikes on PCFG whales. The proposed regulations ~~include the additional protection of a mortality limit based on adjusted PBR to further~~also impose a mortality limit of 16 PCFG whales per year (of which no more than 8 may be females), and a cessation of hunting if the PCFG declines - or is projected to decline - below an abundance estimate of 192 whales or an Nmin estimate of 171 whales to ensure a tribal hunt meets the management goal of avoiding local depletion of the PCFG. The Regional Administrator may authorize the full number of strikes in the initial hunt permit and will adjust strikes downward in subsequent permits if necessary to ensure that strikes on PCFG whales do not exceed 16 over the waiver period.

Also, in light of evidence that at least some WNP gray whales may travel together in a group (Weller et al., 2012) and tracking data (Mate et al., 2015) indicate that it could take such whales several hours to traverse the hunt area (~~Mate et al., 2015),~~NMFS, 2018)

the regulations specify that the Tribe can strike no more than one whale in a 24-hour period.

(iv) *Struck and lost*. Consistent with the Tribe's application, the hunt permit may authorize no more than 3 ENP gray whales to be struck and lost in any calendar year.

(v) *Landings.* The number of whales landed would be limited based on the joint agreement between the United States and the Russian Federation establishing catch shares pursuant to the IWC Schedule. In addition, the hunt permit would authorize no more than 3 ENP gray whales to be landed in an even-year hunt and no more than 1 ENP gray whale to be landed in an odd-year hunt. In an even-year hunt, the number of landed whales would be constrained by the strike limit. In an odd-year hunt, the Tribe could only land one whale, using a 2-strike limit. Thus, in some odd-year hunts the Tribe could land one whale with only one strike.

(vi) *PCFG whales.* Notwithstanding the limits specified in this subsection, no hunting will be authorized for an upcoming hunting season if the Regional Administrator determines that either of the following conditions applies:

1. The most recent PCFG population estimate based on photo-identification surveys is less than 192 whales or the associated minimum population estimate is less than 171 whales; or

2. The PCFG population estimate for the upcoming hunting season is projected to be less than 192 whales or the associated minimum population estimate is projected to be less than 171 whales.

3. The Regional Administrator will inform the Tribe of any such determination pursuant to § 216.114(a)(1) of this subpart.

~~(vi)~~(vii) *WNP gray whales.* The hunt permit would provide that in the event the Regional Administrator determines a WNP gray whale was struck during a hunt and notifies the Makah Indian Tribe in writing, the Tribe would cease hunting unless and until the Regional Administrator determines that measures have been taken to ensure no additional WNP gray whales are struck during the duration of the existing permit. Also, no further permits would be issued unless and until the Regional Administrator determines that measures have been taken to ensure no additional WNP gray whales are struck during the ~~duration~~remainder of the waiver period.

(5) *Images and samples.* NMFS, tribal hunt observers, and tribal members training to hunt would be authorized to collect visual images (e.g., still photographs, motion pictures) as needed to document gray whales approached, struck, or landed. Persons authorized by NMFS and the Makah Indian Tribe may also collect, store, transfer, and analyze specimen samples from landed whales. The regulations also require photographs to be taken of landed whales as well as in the course of hunting, to the extent practicable.

(6) *Hunt permit terms and conditions.* Each hunt permit would specify:

(i) Those terms required by 16 U.S.C. § 1374(b);

~~(ii)~~ The ~~maximum number of gray whales that may be approached per calendar year;~~

~~(iii) The maximum number of gray whales that may be subjected to unsuccessful strike attempts, including training harpoon throws, per hunting season and per calendar year;~~

~~(iv) The maximum number of gray whales that may be struck per hunting season;~~

~~(v) The maximum number of gray whales that may be struck and lost per calendar year;~~

~~(vi)~~(ii) ~~The maximum number of gray whales that may be landed per hunting season and over the duration of the hunt permit, which will not exceed the number agreed between the United States and the Russian Federation as the U.S. share of the catch limit~~limits established ~~by the IWC~~under paragraph (4) of this subsection;

~~(vii)~~(iii) The area where approaches, training harpoon throws, and ENP gray whale hunts would be allowed, which is the coastal portion of the Tribe's U&A. In addition, this provision authorizes the Regional Administrator to include a requirement in the permit that hunters avoid certain areas to prevent and/or reduce the risk of disturbance to Olympic Coast National Marine Sanctuary resources such as seabirds and pinnipeds. This provision is intended to protect other living resources in the area, as deemed necessary by the Regional Administrator at the time the permit is issued. Because a hunt for ENP gray whales may result in the incidental take of other marine mammals during the course of hunting (for example, flushing pinnipeds from rocks and islands), § 216.113 (a)(7)(v) of the regulations requires the Regional Administrator to determine that the Tribe has obtained any relevant authorization from NMFS for incidental takes of other marine mammals prior to hunting ENP gray whales;

~~(viii)~~(iv) The type and timing of notice that the Makah Indian Tribe ~~would need to~~ must provide to NMFS before ~~it approves~~issuing a tribal whaling permit authorizing a hunt, hunting or training approaches, or training harpoon throws;

~~(ix)~~(v) Measures to be taken by the hunt permit holder to provide for the safety of the whaling crew, the public, and others during an ENP gray whale hunt. In its application the Tribe declared its intention to hunt from a wooden canoe accompanied by a motorized chase vessel. Whales would be struck with steel-tipped toggle point harpoons and dispatched with a .50 caliber rifle. The DEIS analyzes this method of hunting as well as hunting with an explosive device. These regulations do not specify the manner or method of hunting that the Tribe may or must employ; section 104 of the MMPA (16 U.S.C. §1374) provides for the manner and method of take to be evaluated during the permit process. Evaluation of manner and methods during the permit process ensures that best practices ~~may~~will be included in a timely manner.

~~(x)~~(vi) That the hunt permit authorizes only the take of ENP gray whales and not the take of any other marine mammals. The WNP gray whale stock is listed as endangered under the ESA and as depleted under the MMPA. The Tribe did not request authorization to take WNP whales nor could the MMPA take moratorium be waived for WNP gray whales. In addition, during a tribal hunt there is a risk that other marine mammals ~~may~~will be encountered. As described in the *Required determinations* section below, the regulations anticipate that the Tribe has obtained any relevant authorization from NMFS for incidental takes of other marine mammals prior to hunting ENP gray whales;

~~(xi)~~(vii) Such other provisions as the Regional Administrator deems necessary.

(7) *Required determinations.* Before issuing a hunt permit the Regional Administrator must make the following determinations:

(i) The authorized manner of hunting is humane. The MMPA requires this finding before a permit may be issued, and the proposed regulations repeat that requirement. The MMPA defines 'humane' as "that method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved" (16 U.S.C. §1362(4); 50 CFR 216. 3). Although there is no definitive humane killing requirement or methodology adopted by the IWC, the IWC has focused on reducing the length of time to death of a whale (i.e., reducing the amount of time between the strike and the death of a

whale) to improve the humaneness of whaling (IWC, 2004; IWC, 2007; IWC, 2012b) as well as to address hunting efficiency. The IWC has also recognized the need to factor hunter safety into any measures used to improve humane killing methods. The IWC definition of humane killing is "[d]eath brought about without pain, stress, or distress perceptible to the animal. . . . Any humane killing technique aims first to render an animal insensitive to pain as swiftly as technically possible. In practice this cannot be instantaneous in a scientific sense" (IWC 12 Resolution 2004-3). The Makah Tribe proposed to use a toggle point harpoon as the weapon for striking whales and a .50 caliber rifle as the weapon for killing whales. The DEIS describes the detailed analyses commissioned by NMFS and others to examine the suitability of using a .50 caliber rifle to dispatch a gray whale and the conclusions of the reviewers that a .50 caliber rifle is capable of quickly killing a gray whale (DEIS Section 3.4.3.5.4, Method of Killing and Time to Death). To ensure that advances in science and methodology addressing efficiency and humaneness ~~may~~can be incorporated in a timely fashion this issue will be regularly reviewed during the permit process. During that process the Regional Administrator would consider the Tribe's proposal and evidence of alternative methods. The permitting process affords opportunities for public involvement. Also, § 216.117 (b)(2) of these regulations provides that NMFS will convene a team of experts to evaluate hunt humaneness and effectiveness after at least 8 gray whales have been struck.

(ii) The Makah Indian Tribe has enacted a tribal ordinance governing the hunt that is consistent with these regulations. This requirement would ensure the Tribe has the legal capacity to enforce the requirements of the regulations with respect to tribal members;

(iii) The Makah Indian Tribe has in place certification procedures for whaling captains, riflemen, harpooners, tribal hunt observers, and safety officers and a process to ensure compliance with those procedures. This requirement would ensure that Makah tribal members participating in a hunt are trained and have been certified by the Tribe for their respective roles. This requirement will support public safety and contribute to an increased likelihood that struck whales will be quickly killed and landed;

(iv) There are adequate photo-identification catalogs and photo-identification processes available to allow the identification of WNP and PCFG gray whales. This requirement ensures that NMFS will continue to evaluate the adequacy of the photo-

identification catalogs and support the collection and analysis of the photo-identification data; ~~and~~

(v) The most recent PCFG population estimate is at least 192 whales and the associated minimum population estimate is at least 171 whales;

(vi) The PCFG population estimate for the first hunting season covered by the permit is projected to be at least 192 whales and the associated minimum population estimate is projected to be at least 171 whales; and

~~(v)~~(vii) The Makah Indian Tribe has obtained any relevant incidental take authorization for WNP gray whales or other marine mammals. A Makah hunt for ENP gray whales has the potential to ~~effect~~affect other marine mammals. This requirement ensures necessary incidental take authorization is in place prior to the Regional Administrator issuing a permit authorizing a hunt.

~~(vi)~~(viii) Except for the initial hunt permit, before issuing a hunt permit the Regional Administrator must determine that the Makah Indian Tribe has complied with the permit terms and conditions and with the requirements of these regulations in carrying out any gray whale hunts or training approaches previously authorized, or if the Makah Indian Tribe has not complied, that it has adopted measures to ensure compliance.

(b) The subsection describes how ENP gray whales landed under a hunt permit may be utilized.

(1) Enrolled members of the Makah Indian Tribe may possess, consume, and share, within the Makah Indian Tribe's reservation boundaries, nonedible and edible products of ENP gray whales. This provision allows members of the Tribe to use any products of landed whales as they see fit, ~~including exchange with other tribal members,~~ so long as the products remain within the reservation boundaries. Outside the Makah Indian Tribe's reservation boundaries, enrolled members of the Makah Indian Tribe may possess and consume edible products of ENP gray whales, and may share such edible products with any person attending a tribal or intertribal gathering, so long as there is not more than two pounds of edible ENP gray whale products per person attending the gathering. The purpose of this provision is to allow tribal members to share edible products at gatherings and events where non-tribal members will be present. The reason for the limit of two pounds per person is to ensure the event is a one-time event and not an opportunity for

commercial exchange of edible gray whale products. Except for handicrafts, enrolled members of the Makah Indian Tribe may not sell, offer for sale, or purchase~~, or barter~~ any ENP gray whale products. The purpose of this provision is to prevent the commercial exchange of gray whale products, except when the products have been fashioned into handicrafts by members of the Makah Indian Tribe ~~(and except for barter among tribal members on the reservation, as described in the first sentence).~~.

(2) Enrolled members of the Makah Indian Tribe may possess, make~~, barter~~, and sell in the United States, Makah Indian handicrafts taken pursuant to these regulations, provided each handicraft, when sold, is permanently marked with a distinctive marking approved by the Makah Tribal Council, and is accompanied by a certificate of authenticity issued by the Makah Tribal Council or its designee, and entered in the Tribe's official record of Makah Indian handicrafts. This provision authorizes tribal members to sell handicrafts they have made so long as they include the specified means of identifying such handicrafts later, if and when they enter the stream of commerce.

(3) Any person may possess, purchase, or re-sell, in the United States, Makah Indian handicrafts made from ENP gray whales taken pursuant to these regulations, provided each handicraft is permanently marked with a distinctive marking approved by the Makah Tribal Council and is accompanied by a certificate of authenticity issued by the Makah Tribal Council or its designee, and entered in the Tribe's official record of Makah Indian handicrafts. This provision allows persons who have obtained handicrafts to transfer them. ~~The MMPA allows such handicrafts to also be exported and no limitation on export is included in these regulations.~~

(4) Any person may consume edible ENP gray whale products within the boundaries of the Makah reservation if products are received from an enrolled member of the Makah Indian Tribe, or outside the boundaries of the Makah reservation at a tribal or intertribal gathering if products are received from an enrolled member of the Makah Indian Tribe, so long as the products are consumed exclusively at the gathering, and are not further distributed. Subparagraph (1) above authorizes tribal members to share edible products with non-tribal members; this provision authorizes non-tribal members to receive and consume those products.

(c) The Makah Indian Tribe is responsible for managing all activities of any Makah Indian tribal member carried out under this section.

§ 216.114 – Accounting and identification of gray whales.

(a) The subsection describes specific notifications by the Regional Administrator to the Makah Indian Tribe.

(1) Thirty days prior to the beginning of a hunting season, the Regional Administrator will notify the Makah Indian Tribe in writing of the ~~limit on~~maximum number of PCFG whales, including females, that may be struck during the upcoming hunting season. The limit will ~~be a value equal to~~take into account the ~~PBR level~~number of PCFG whales and the number of strikes made on PCFG whales as described ~~in the NMFS stock assessment report, minus the average annual number of human-caused mortalities from sources other than the Makah Indian Tribe's hunt as described in that same report.~~under § 216.113(a)(4)(iii).

(2) By November 1 ~~and prior to the beginning~~ of ~~a hunting season~~each year, the Regional Administrator will notify the Makah Indian Tribe in writing of the proportion of gray whales that will be presumed to be PCFG whales for each month of the upcoming calendar year based on ~~such~~PCFG whales' occurrence in the Makah U&A, as determined by the Regional Administrator. The presumed proportions will be used to account for PCFG whales that are subjected to hunting or training approaches or unsuccessful harpoon attempts, or struck and lost during hunting or hunt training as well as the requirements under § 216.117.

(3) The Regional Administrator will notify the Makah Indian Tribe in writing when the Tribe has reached the limit of PCFG whales that may be struck in any hunting season.

(b) The subsection describes the process for identifying and accounting for gray whales during hunts and training approaches.

(1) *Even-year hunts*. Based on available evidence, the Regional Administrator will determine whether a gray whale that is subjected to a hunting approach, struck and lost, or struck and landed in an even-year hunt is a WNP gray whale, a PCFG whale, or cannot be identified as either. A whale affirmatively identified as a PCFG whale will be counted accordingly. A whale that is struck and lost and cannot be identified will be presumed to be a PCFG whale in accordance with the proportions specified in § 216.114(a)(2) and

will be counted accordingly. As described in the companion biological report (NMFS, ~~2017~~2018), data from recent photo-identification surveys indicate that there is a 40~~%~~ percent chance that an encounter with a gray whale in the Makah U&A during December through May would be a PCFG animal, which is at least 180 times greater than the chance of encountering a WNP whale during those months. Therefore, we assume any struck and lost whale is a PCFG whale. The Regional Administrator will notify the Makah Indian Tribe of the identification determination in writing as soon as practicable.

(2) *Odd-year hunts*. Although we do not expect tribal hunters to encounter WNP gray whales in the hunt area during odd-year hunts, this provision provides a mechanism for monitoring and managing for that possibility. Based on available evidence, the Regional Administrator will determine whether a gray whale that is subjected to a hunting approach, struck and lost, or struck and landed in an odd-year hunt is a WNP gray whale or cannot be identified as such. A gray whale that cannot be identified as a WNP gray whale will be counted as a PCFG whale. The Regional Administrator will notify the Makah Indian Tribe of this determination in writing as soon as practicable.

(3) *Training approaches*. All gray whales subjected to training approaches are presumed to be PCFG whales in accordance with the proportions specified in § 216.114(a)(2). Training approaches are likely to be made in canoes and without a chase boat or tribal hunt observer. Therefore, we expect crews to focus on maneuvering the vessel and logging approaches rather than taking photographs. As such, we will instead rely on the presumed proportion of PCFG whales in the hunt area as reported in photo-identification surveys by gray whale researchers.

§ 216.115 Prohibited acts.

The regulations make it unlawful for the Makah Indian Tribe or any enrolled Makah Indian tribal member to engage in a variety of activities:

(a) Take any ENP gray whale, except as authorized by a hunt permit or any other provision of part 216. This subparagraph also describes that any gray whale that is struck without a hunt permit will be counted toward the limits set out in the regulations and any whale that is landed will be counted as part of the U.S. share of the catch limit established by the IWC.

(b) Hunt a gray whale without a copy of the hunt permit and tribal whaling permit on board.

(c) Make a training approach or training harpoon throw on a gray whale without a copy of the hunt permit and a training logbook on board.

(d) Participate in a gray whale hunt as a whaling captain, rifleman, harpooner, tribal hunt observer, or safety officer, unless the individual has been certified by the Tribe to do so and is named in a tribal certification report.

(e) Violate any provision of any hunt permit.

(f) Hunt or make a training approach on a gray whale calf or an adult gray whale accompanying a calf.

(g) Hunt or strike a gray whale outside the authorized hunting area, unless the whale was first struck within the authorized hunting area.

(h) Hunt, make a hunting or training approach, or make a training harpoon throw on a gray whale after the Tribe has reached any of the established limits on strikes, approaches, unsuccessful strike attempts, struck and lost whales, or landings.

(i) Hunt a gray whale if the limit on PCFG whales that may be struck is less than one, including as a result of accounting for whales struck and lost or landed.

(j) Hunt a gray whale after the Tribe has been notified by the Regional Administrator that it has reached the limit for PCFG whales that may be struck~~.~~ or that the PCFG abundance is below the limits specified in § 216.113(a)(4)(vi).

(k) Hunt a gray whale after a whale has been landed and before the Tribe has received notification from the Regional Administrator regarding the identity of the landed whale.

(l) Sell, offer for sale, or purchase~~, or barter~~ any gray whale products, except Makah Indian handicrafts that are permanently marked with a distinctive marking approved by the Makah Tribal Council and accompanied by a certificate of authenticity issued by the Makah Tribal Council or its designee.

(m) Possess gray whale products except from whales taken under the authority of this subsection or some other provision of law.

(n) Make a false statement in an application for a hunt permit or in a report required under the regulations.

(o) Transfer or assign a hunt permit issued under this subpart.

(p) Fail to submit reports required by this subpart.

(q) Deny persons designated by NMFS access to landed whales for the purpose of collecting specimen samples.

(r) Fail to provide required permits and reports for inspection upon request by persons designated by NMFS.

(s) Allow anyone other than enrolled Makah Indian tribal members to be part of a whaling crew or to allow anyone other than such members or tribal hunt observers to be in a training vessel making a training approach.

§ 216.116 Applications for hunt permits.

(a) This subsection identifies the information that must be contained in the application from the Tribe for the initial hunt permit from NMFS.

(1) The maximum number of ENP gray whales subjected to hunting or training approaches, struck, landed, and subjected to unsuccessful strike attempts;

(2) A demonstration that the proposed method of taking is humane;

(3) A demonstration that the proposed taking is consistent with these regulations;

(4) A copy of the currently enacted Makah Indian tribal ordinance governing whaling by Makah Indian tribal members; and

(5) A description of the certification process for whaling captains, riflemen, harpooner, tribal hunt observers, and safety officers, including any guidelines or training manuals used by the tribe to certify such persons.

(b) Subsequent applications from the Tribe would require the same information, plus additional information to demonstrate compliance with previous permits.

(1) A description of how the Makah Indian Tribe has complied with the requirements of these regulations and previously issued hunt permits;

(2) A description of previous hunts in which whales were struck and lost and what the Tribe has done to prevent future whales from being lost; and

(3) A description of products obtained from whales landed under the most recent permit, including a description of the disposition of any whale products deemed unsuitable for use by Makah Indian tribal members. Such products could come from ‘stinky’ whales like those occasionally encountered in Chukotkan hunts (IWC, 2016) or

from whales with contaminant levels that are unsafe for human consumption. In such cases the whales would still count as landed whales. However, with proper evidence and documentation of the unsuitable products, we would not consider such products to be wasted under the MMPA.

(c) The Regional Administrator will notify the Tribe if the application is complete, or return it with an explanation if not complete. The Tribe will have 60 days to modify the application.

(d) Once the application is complete and any required NEPA documentation is available, the Regional Administrator will publish a notice in the Federal Register.

§ 216.117 Requirements for monitoring, reporting, and recordkeeping.

(a) In addition to the reporting provisions described in the WCA regulations, the Tribe will:

(1) Ensure a certified tribal hunt observer accompanies each hunt. The tribal hunt observer will record in a hunting logbook the time, date, and location of each approach of a whale or group of whales, each attempt to strike a whale, and each whale struck. For each whale struck, the tribal hunt observer will record whether the whale was landed. If not landed, the tribal hunt observer will describe the circumstances associated with the striking of the whale and estimate whether the animal suffered a wound that might be fatal. For every gray whale approached by the whaling crew, the tribal hunt observer will ~~attempt to take~~collect digital photographs useful for photo-identification purposes.

(2) Ensure that each vessel involved in a training approach has on board a training logbook for recording the date, location, and number of gray whales approached. Each training approach must be reported to the tribal hunt observer within 24 hours.

(3) Maintain hunting and training logbooks and allow NMFS-designated personnel to inspect them.

(4) Ensure each whaling captain allows a NMFS hunt observer to accompany and observe a hunt.

(5) Maintain an official record of all articles of Makah Indian handicraft and provide a copy to NMFS personnel on request.

(6) Ensure that the following reports are filed with the NMFS West Coast Regional Office in Seattle, Washington, by the indicated date:

(i) *Tribal certification report*. Thirty days prior to the beginning of a hunting season, provide a report that includes the names of all tribal hunt observers and enrolled Makah Indian tribal members who have completed the training and been certified to participate in a gray whale hunt as whaling captains, riflemen, harpooners, and safety officers. Names may be added during the hunting season.

(ii) *Incident report*. Upon striking a gray whale, submit an incident report within 48 hours, which may address multiple whales so long as it's submitted within 48 hours of the first whale being struck.

1. Reports involving struck and lost whales must include: the whaling captain's name; the tribal hunt observer's name; the date, location (latitude and longitude, accurate to at least the nearest second), time, and number of strikes and attempted strikes if any; the method(s) of strikes and attempted strikes; an estimate of the whale's total length. The report will describe the circumstances associated with the striking of the whale and estimate whether the animal suffered a wound that might be fatal. The report will include all photographs taken by a tribal hunt observer of gray whales struck and lost by the whaling crew. The report may also contain any other observations concerning the whale(s) or circumstances of the hunt.

2. Reports involving struck and landed whales must include the same information as above, as relevant, plus physical details and photographs of the landed whale. The report must also describe the time to death (measured from the time of the first strike to the time of death as indicated by relaxation of the lower jaw, no flipper movement, or sinking without active movement) and the disposition of all specimen samples collected and whale products, including any whale parts or products deemed unsuitable for use by Makah Indian tribal members.

(iii) *Hunt report*. Within 30 days after the end of each hunting season, submit a report that contains the information in the above reports for struck whales and also information regarding approaches and unsuccessful strike attempts, as relevant.

(iv) *Annual approach report.* By January 15 of each year, submit a report that contains the dates, location, and number of whales subjected to hunting approaches, training approaches, and training harpoon throws during the previous calendar year. The

report may also contain any other observations by the Makah Indian Tribe concerning the whales or circumstances of the approaches and training harpoon throws.

(v) *Annual handicraft report*. By ~~September 30~~April 1 of each year, submit a report describing all handicrafts certified by the Makah Tribal Council or its designee during the previous calendar year. The report must contain specified information intended to aid in the subsequent identification of the handicrafts as authentic.

(vi) NMFS will maintain such reports and make the hunt reports, annual approach reports, and annual handicraft reports available for public review.

(b) After receiving incident reports documenting that 8 ~~or more~~ gray whales have been struck, the Regional Administrator will evaluate the following:

(1) The photo-identification and notification processes, to ensure confidence in NMFS' ability to quickly identify PCFG and WNP whales that may be affected by a tribal whale hunt.

(2) The humaneness of the hunting method, to ensure that any new weapons or techniques are evaluated to help improve the humaneness of the tribal whale hunt.

(c) This subparagraph gives the physical address of the NMFS West Coast Regional office.

§ 216.118 Expiration and amendment.

(a) This provision provides that the regulations will expire after 10 years, unless extended.

IV. Analysis of Effects of Proposed Regulations and Finding of Consistency with MMPA Requirements

Relying on the best available scientific evidence (including information developed in preparing the DEIS), and the statutory factors related to gray whale biology and ecosystem considerations, this section presents the analysis and findings that the proposed regulations (1) are in accord with sound principles of resource protection, as provided in the purposes and policies of the MMPA (section 101(a)(3); 16 U.S.C. §1371(a)(3), and (2) ensure that the taking will not be to the disadvantage the ENP gray whale stock (section 103(a); 16 U.S.C. §1373(a)).

A. Accordance with Sound Principles of Resource Protection

The purposes and policies of the MMPA include maintaining marine mammal stocks as "a significant functioning element in the ecosystem of which they are a part," "maintain[ing] the health and stability of the marine ecosystem," and "obtain[ing] an optimum sustainable population keeping in mind the carrying capacity of the habitat." Thus we considered the effects of the proposed regulations on both the ecosystem and the affected stock and documented those findings in a separate biological report (NMFS, ~~2017~~2018). The conclusions below summarize those findings as they pertain to the effect the proposed regulations would have on (1) the ~~functioning~~role of ENP gray whales ~~as a significant element of~~in their marine ecosystem, and on the ~~related~~ health and stability of that ecosystem; (2) the status of the ENP gray whale stock relative to ~~its~~ OSP ~~range;~~ and on the distribution of ENP gray whales in the PCFG feeding area; (3) the ~~status~~management goals of ~~PCFG whales relative to a theoretical OSP range.~~avoiding local depletion and limiting the risk of whales being disturbed by non-lethal hunt-related interactions; and (4) the WNP gray whale stock

1. Effect of the proposed waiver and regulations on the role of ENP gray whales in their marine ecosystem, and on the health and stability of that ecosystem

This proposed waiver and regulations are unlikely to have an appreciable effect on any of the ecosystems of which the whales are a part, for the reasons detailed in the biological report and summarized below.

Section 2(2) of the MMPA states that "species and population stocks should not be permitted to diminish beyond the point at which they cease to be a significant functioning element in the ecosystem of which they are a part" (16 U.S.C. §1361(2)). Section 2(6) further provides that "the primary objective of [marine mammal] management should be to maintain the health and stability of the marine ecosystem" (16 U.S.C. §1361(6)). The MMPA does not specify a geographic scale for identifying marine mammal ecosystems.

Because of their long migration route, ENP gray whales occupy multiple large marine ecosystems at different times. The smallest marine ecosystem identified in the literature that includes the coastal portion of the Makah Tribe's U&A is the northern California Current ecosystem (Longhurst, 2006; Sherman and Alexander, 1989).

The entire range of the ENP gray whale stock is vast and crosses many large marine ecosystems, including the Pacific Central American Coast, California Current, Gulf of Alaska, and Bering and Chukchi Seas (Longhurst, 2006; Sherman and Alexander, 1989). The proposed regulations could result in the removal of up to 2.5 whales annually, on average, from the Makah Tribe's U&A. This level of removal is an order of magnitude less than the natural variability of the population, which numbers ~~between 19,000 and 23~~nearly 27,000 individuals in 2016, and would not have an appreciable effect on the functioning of ENP gray whales as an element of these large ecosystems, or on the health of the ecosystems themselves. To the extent approaches and attempted strikes affect whales, those actions would do so in a tiny local area of one of these large ecosystems and would therefore be unlikely to result in a change in gray whale use of any of these large ecosystems.

The proposed waiver will also not result in gray whales ceasing to be a significant functioning element of the smaller northern California Current ecosystem or the environment of the northern Washington coast for two reasons. First, these habitats are shaped by dynamic, highly energetic, large-scale processes and the role of ENP gray whales in structuring these habitats is limited. Moreover, the Tribe's proposal is unlikely to result in an appreciable decrease in the numbers of whales present in the northern California Current ecosystem or the northern Washington coastal environment. The analysis supporting these conclusions is presented in the DEIS (Section 4.3, Marine Habitat and Species, and Section 4.4.3.2, Alternative 2), and discussed further in the Biological Report.

Based on the analysis presented in the Biological Report, we conclude that the proposed waiver and regulations would not cause ENP gray whales "to cease to be a significant functioning element in the ecosystem of which they are a part." To summarize:

- Gray whales annually traverse five large marine ecosystems;
- Average annual removal by Makah hunters of up to 2.5 ENP gray whales from a population of approximately ~~21~~27,000 individuals would not have an appreciable effect on the functioning of ENP gray whales in any of these large marine ecosystems or on the ecosystems themselves;

- The northern California current ecosystem is the smallest recognized marine ecosystem that encompasses the area of the proposed hunt;
- ENP gray whales play a limited role in structuring the northern California current ecosystem, which is shaped by dynamic, highly energetic, large-scale ecosystem processes;
- There will continue to be approximately ~~21~~27,000 ENP gray whales migrating along the coast through the northern California current ecosystem, thus the functioning of ENP gray whales in that ecosystem will not change;
- At the scale of the northern Washington coast (the coastal portion of the Makah U&A), PCFG whales play a limited role in structuring the habitat, which is shaped by dynamic, highly energetic, large-scale ecosystem processes;
- There are likely to continue to be ~~non-PCFG~~ENP gray whales in the Makah Tribe's U&A and the rest of the PCFG range during the summer/fall feeding period, even though they may not subsequently recruit to the feeding area;
- ~~The number of PCFG whales that may be killed in a hunt under the primary strike limits does not exceed the current PBR. The additional protection afforded by the adjusted PBR limit that accounts for other sources of human-caused mortality will ensure that the PBR of PCFG gray whales is not exceeded. By avoiding~~By regulating the hunt to avoid local depletion, the proposed waiver and regulations will allow ENP gray whales to continue being a significant functioning element of their ecosystem during the summer feeding period in the PCFG range;
- There is no evidence to suggest that a hunt, as carried out under the proposed regulations, would cause gray whales to abandon the Tribe's U&A as a summer feeding area and thus interfere with their ability to continue being a significant functioning element of their ecosystem during the summer feeding period in the PCFG range.

2. Effect of the proposed waiver and regulations on the status of the ENP gray whale stock relative to OSP and on the distribution of ENP gray whales in the PCFG feeding area

The proposed waiver and regulations are unlikely to have an appreciable effect on

the ENP gray whale stock's abundance and its status relative to OSP. They are also unlikely to result in ENP gray whales abandoning any area within the PCFG range or otherwise changing their distribution. The proposal would result in a maximum of 3 strikes/deaths per even year and 2 strikes/deaths per odd year. Three animals represent 0.~~014~~011 percent of the population of ~~21~~27,000 animals. This very small level of mortality is also a small fraction of the annual variability in the stock's abundance (~16,000-~~21~~27,000 animals since the mid-1990s). This small number of removals would not have an appreciable effect on ENP abundance or OSP status. Moreover, any portion of the IWC quota for ENP gray whales that is not harvested by the Makah Tribe is likely to be harvested by Chukotkan hunters, based on recent practice and as articulated in a joint U.S-Russia monitoring agreement (e.g., Fominykh and Smith, 2017). Thus, the proposed waiver and regulations are unlikely to have a net effect on ENP gray whale stock abundance or OSP status.

The proposed waiver and regulations are unlikely to have an appreciable effect on the distribution of ENP gray whales through disturbance of migrating whales or feeding whales. Even-year hunts and training exercises conducted from December through May would encounter mostly migrating whales that must pass through the ocean portion of the Makah U&A during their lengthy north- and southbound transits. These whales are slow but steady swimmers that often exhibit directed swimming and predictable breathing and dive patterns (Jones and Swartz, 2002). Whales travelling at 3-6 miles per hour (5-10 km per hour; Jones and Swartz, 2002) would be able to transit the widest portion of the Makah U&A (approximately 32 miles or 51 km north-south) in several hours. During migration, gray whales generally remain close to shore (especially where the continental shelf is narrow) and the best available information indicates that most northbound and southbound whales migrate within 27 miles (43 km) of shore (Pike, 1962; Green et al., 1992; Green et al., 1995). Some researchers have suggested that gray whales ~~may~~ alter their migration distance from shore in response to vessels and other human activity (Rice, 1965; Hubbs and Hubbs, 1967; Wolfson, 1977; Schulberg et al., 1989; Mate and Urbán-Ramirez, 2003), however the ENP population has also demonstrated a tolerance and resiliency to human activities as reflected by the successful recovery of the population from over-exploitation (~~Cowles et al., 1981;~~ Moore and Clarke, 2002).

During even-year hunts, adverse weather conditions in the Makah U&A in winter and early spring coupled with shorter periods of daylight would keep most hunts and training exercises close to shore and of shorter duration than during the summer. Hunts also would be localized and have only a few vessels associated with the hunt (generally 5 or less). Chukotkan hunters typically use a similar number of motorized vessels to pursue individual whales but use significantly more harpoons and bullets – approximately 9 harpoons and 70 bullets per whale in recent years (IWC, 2016). Since the 1950s, Chukotkan hunters have landed, on average, over 100 ENP gray whales per year (Borodin et al. 2012), and an average of 126 whales per year during the past decade (IWC, 2016). During that decade the majority of whales have consistently been killed in the Chukotsky region with no apparent change in the distance offshore that whales are killed (IWC, 2016). Given these considerations as well as the extremely limited number of whales that could be harvested during an even-year hunt, it is reasonable to expect that most of the roughly ~~20~~27,000 ENP whales would be subject to little or no hunting pressure in the Makah U&A. Those animals subject to hunting and hunt training activities would experience them as temporary and localized nearshore events within the vast area of the Pacific Ocean. It is therefore reasonable to expect that whales traveling through the Makah U&A during the migration season ~~are unlikely to~~will not change their migration patterns and avoid the area.

Odd-year hunts during July through October would likely encounter whales exhibiting feeding behavior, including milling in small, localized areas close to shore and typically within 3 miles (5 km) of shore (Brueggeman et al., 1992; Darling, 1984; Sumich, 1984; Mallonée, 1991; Dunham and Duffus, 2001; Scordino et al., 2011). Some animals have been seen clustering relatively far offshore (12-16 miles or 19-26 km) but these sightings are considered unusual (Calambokidis et al., 2009). During summer hunts and training exercises most whales would be found in the PCFG range from northern California to northern Vancouver Island, within which the Makah U&A is a relatively small portion (less than 5 percent of the coastline in the PCFG range). Whales are known to focus on specific areas within this range but also move extensively in search of food (Calambokidis et al., 1999; Calambokidis et al., 2004; Calambokidis et al., 2014). Odd-year hunts would result in fewer whales being pursued or struck (1 or 2 per year) than in

even-year hunts (up to 3 per year). The proposed regulations would also limit the number of approaches on PCFG whales.

As noted above, despite hundreds of whales being hunted and killed in Chukotkan hunts (many of which are killed during the summer months) there has not been a discernible change in the availability and location of hunted whales (IWC, 2016). Although the proposed regulations allow for over 350 approaches on gray whales each year, most of these approaches would likely involve paddle-driven canoes that, compared to the motorized vessels used in Chukotkan hunts, have much less speed and maneuverability to pursue and maintain close contact with approached whales. Given these considerations as well as the extremely limited number of whales that could be harvested under the proposed regulations, it is reasonable to expect that those animals exposed to hunting and hunt training activities within the Makah U&A would experience a hunt-related encounter as a temporary and localized nearshore event within the expansive PCFG range between northern California and northern Vancouver Island. As a result it is unlikely that PCFG whales would abandon the Makah U&A.

Because the proposed regulations will not interfere with ENP gray whales continuing to be a significant functioning element in any of the ecosystems of which they are a part, will not appreciably affect the status of the ENP gray whale stock relative to its OSP, and will not affect the distribution of the ENP gray whale stock, we conclude that the proposed regulations are in accordance with sound principles of resource protection.

3. Effect of the proposed waiver and regulations on the management goals of avoiding local depletion and to limit the risk of whales being disturbed by non-lethal hunt-related interactions.

Through hunt-related mortality, the proposed regulations may reduce the abundance of PCFG whales~~, thereby reducing the abundance of ENP gray whales in the PCFG feeding area, depending on the rate at which new whales recruit to the PCFG.~~ by up to 16 whales over a 10-year period. It is possible that hunt-related mortality, in combination with other sources of human-caused mortality, could exceed PBR for PCFG whales. We nevertheless conclude that the proposed regulations will meet the management goal of avoiding local depletion. As described above:

- Genetic simulations indicate that a plausible range of external recruitment

is greater than 1 and fewer than 10 whales per year, with 4 whales per year being most consistent with empirical data (Lang and Martien, 2012) ~~and nearly twice the number of whales that may be struck annually under the proposed regulations. A tribal hunt under the proposed regulations would not, however, cause PCFG whales to fall below their theoretical OSP range, or fail to achieve their theoretical OSP range, because, as described above under "Regulating Impacts on PCFG Whales," the strike limits in the proposed regulations would result in a mortality level for PCFG whales that is well below the adjusted PBR limit for PCFG whales under current conditions. If conditions changed and caused a decrease in the adjusted PBR limit (for example, a decline in PCFG abundance or an increase in other sources of human-caused mortality) the new adjusted PBR limit would ensure that hunt-related mortality, combined with other sources of human-caused mortality, did not exceed the PBR level.~~which is more than twice the number of whales that may be struck annually under the proposed regulations.

~~Because the PCFG may warrant consideration as a distinct stock in the future, the SAR (Carretta et al. 2015) calculates a separate PBR for these whales to "assess whether levels of human-caused mortality are likely to cause local depletion." As described above, we have defined the management goal of "avoiding local depletion" to mean that the hunting regime would not contribute to PCFG abundance being below its theoretical OSP range. As long as total human-caused mortality remains below PBR, it should not prevent a marine mammal stock from achieving or maintaining its OSP level. In some cases, if a stock is declining it is possible that mortality levels as low as PBR could be a cause for concern (e.g., stock declines were cited as one of the reasons for NMFS denial of an import permit for beluga whales in the Georgia Aquarium decision (NMFS, 2013)). However, the PCFG is not a recognized stock and has remained relatively stable at about 200 animals since 2003, and the proposed regulations include an adjusted PBR limit that takes into account human-caused mortalities as well as changes in PCFG abundance. Thus, we conclude that mortality from a tribal hunt, combined with other sources of human-caused mortality, is unlikely to result in local depletion of whales in the PCFG~~

~~feeding area.~~

- Agency modeling indicates that the PCFG is likely to grow in the future with or without a tribal hunt. The proposed regulations include protections in the event the PCFG declines rather than increases.
- If PCFG abundance continues to be stable, a reduction of 16 PCFG whales over 10 years is projected to result in an abundance of around 227 whales, which is well above the lowest abundance level observed during the recent period of relative stability. That level was 192 whales in 2005, and by 2012 the population had grown 25 percent to 243 animals.
- If PCFG abundance declines, the low abundance trigger ensures that no hunting will occur if abundance falls below levels observed during a recent 14-year stable period, specifically 192 animals or an Nmin of 171 animals. The inclusion of an Nmin trigger provides a safeguard against incomplete or lagging abundance estimates.
- The low abundance trigger is well above the theoretical bottom of the OSP range assuming the PCFG is currently at K, and is above the theoretical bottom of the OSP range even if K is 290 animals, which is the projected abundance in 2028.

The proposed regulations also include measures aimed at limiting the potential for and the effect of non-lethal interactions between hunters and whales. Under the proposed regulations, Makah hunters could approach 3,530 whales during hunts and training exercises over the 10 years of the regulations. Gray whales throughout the North Pacific are subject to a considerable number of vessel approaches each year, including whale-watching operations in the U.S., Canada, and Mexico, and pursuit by Chukotkan hunters in Russia. Such approaches are likely to elicit a range of reactions from whales showing no response to whales showing more pronounced and aberrant behaviors that may include diving, fluke slapping, or changing direction. Such reactions are generally short term and of a low impact and not likely to disrupt the migration, breathing, nursing, feeding, breeding, or sheltering behavior of marine mammals (NMFS, 2004).

Because the proposed waiver and regulations are unlikely to cause the PCFG to drop below abundance levels seen during the recent period of relative stability, and would

not ~~prevent~~contribute to PCFG whales ~~from maintaining or reaching~~being below the theoretical OSP range of the group, the proposed waiver and regulations are unlikely to result in local depletion. The limits on approaches and unsuccessful harpoon attempts will limit the potential for a tribal hunt and associated training to disturb ENP gray whales.

4. Effect of the proposed waiver and regulations on the WNP gray whale stock

The Makah Tribe did not request a waiver of the MMPA take moratorium for WNP whales, and could not because there is no international authorization and the WNP stock is endangered and therefore classified as depleted. To date it has not been determined whether or not this stock is at OSP. As noted previously, section 101(a)(3)(B) prohibits a waiver for a depleted stock (16 U.S.C. §1371(a)(3)(B)). Even though the WNP is not the subject of this request, because there is evidence of WNP gray whales in the hunt area, we consider the risk that a Makah tribal hunt for ENP gray whales under the proposed waiver and regulations would pose to WNP gray whales. In addition, prior to issuing final regulations, NMFS would analyze under section 7(a)(2) of the ESA the potential impacts on WNP gray whales from a proposed hunt for ENP whales.

NMFS does not have formal guidance on evaluating potential risks to other marine mammals in the context of a request for a waiver to take marine mammals from a different stock. There is one federal court decision from 1988 (*Kokechik* v. *Secretary of Commerce* 839 F.2d 795 (D.C. Cir 1988)) examining a somewhat related situation. In *Kokechik*, the court was asked to consider whether the MMPA allowed NMFS to grant a waiver to a foreign entity to allow the taking of marine mammals of a specified stock, where the facts demonstrated that the underlying activity (gillnet fishing) would also cause the lethal take of marine mammals from a depleted stock, for which an optimum sustainable population had not been determined. Because the court determined that the MMPA did not allow NMFS to authorize any take from the depleted stock under those circumstances, and ~~because~~ the lethal taking was a 'certainty,' the court interpreted the MMPA as precluding issuance of the permit. The court distinguished the facts at issue from a ~~potential~~ scenario where there would be only 'a very remote possibility' of take of other marine mammals, stating that the MMPA 'may not prohibit issuance of a permit' in those circumstances (*Kokechik*, 839 F.2d at 801). Although the facts underlying the

Kokechik decision are different from those associated with the Tribe's application and the court's holding is otherwise not controlling here ~~because, unlike the foreign applicant in *Kokechik*, the Makah Tribe is eligible to seek MMPA authorization~~, we nevertheless ~~find~~consider the ~~*Kokechik* decision informative in evaluating~~court's reasoning to inform our evaluation of the potential risk ~~of lethal take of~~to WNP whales.

To evaluate the risk to WNP gray whales we consider both: (1) the probability of encountering a WNP gray whale (exposure) during an ENP gray whale hunt; and (2) the likelihood that an encounter would disturb, injure or kill a WNP whale or disrupt its behavioral patterns. To address the first question and to reduce the risk of encountering WNP gray whales during an ENP hunt, the regulations include several important restrictions: (1) hunting would only be allowed every other year (proposed for even-numbered years) during the migration season when WNP gray whales may be present and; (2) only three whales could be struck in an even year hunt; and (3) if a WNP is confirmed to be struck in any year the hunt will cease until steps are taken to ensure such an event will not recur.

To address the second question we note that the MMPA defines take broadly to include "harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal" (16 U.S.C. §1362(13)). Harass in turn is defined as any act that has the potential to injure a marine mammal or disturb a marine mammal by causing disruption of behavioral patterns (16 U.S.C. §1362(18~~(~~)(A)). Striking a WNP gray whale has the potential to kill or injure it resulting in "take." An unsuccessful strike attempt on a WNP gray whale could disturb it by disrupting behavioral patterns constituting harassment or "take." An approach by a tribal whaling crew on a WNP gray whale might or might not constitute a "take," depending on the reaction of the whale to the approach (that is, depending on whether the animal is disturbed to a degree that qualifies as harassment). As noted below, when issuing permits under the MMPA for activities involving vessel approaches (typically for motorized research vessels) on large cetaceans, NMFS generally places limits on the number of approaches using a specific distance, usually ~~less than~~ 100 yards or less. The draft regulations employ this 100-yard provision in the definition for hunting and training approaches and, moreover, place specific limits on the number of such approaches.

With hunting at the time of year when WNP gray whales may be present limited to every other year and strikes limited to 3 (and thus limited to 15 over the 10-year regulation period), there is about a 3 percent probability of hunters encountering and striking one WNP gray whale over the 10 years of the regulations (Moore and Weller, ~~2017~~in prep). This probability is the most likely point estimate; the 95 percent confidence interval ranges from 0.2 percent to 7.8 percent. With strike attempts during even-year hunts limited to 18, there is about a 17 percent probability (95 percent confidence interval range from 0.9 percent to 39 percent) that one WNP whale would be subjected to an unsuccessful strike attempt over the 10 years of the regulations (Moore and Weller, ~~2017~~in prep). Stated another way, the most likely point estimates indicate that one in thirty 10-year hunt periods (i.e., one year out of 300) would result in an individual WNP gray whale being struck by Makah hunters, and one animal would be subjected to an unsuccessful strike attempt about every 57 years, if the Tribe made the maximum number of strikes attempts allowed in even-year hunts and if ENP and WNP population sizes and migration patterns remained constant (Moore and Weller, ~~2017~~in prep). If the 95 percent confidence intervals are considered, the expectation is that one WNP whale would be struck out of every 128 years of hunting and one WNP whale would be subjected to an unsuccessful strike attempt every 26 years. The proposed regulations would also limit the number of approaches to 353 in any year, which would result in the expected approach of 8 WNP gray whales over the 10 years of the regulations (Moore and Weller, ~~2017~~in prep).

We conclude that the risk of a lethal take for WNP gray whales posed by the proposed regulations is minimal, even under the *Kokechik* standard, for the following reasons. The killing of a single WNP whale would be a serious concern for this endangered stock at its current status. Under the proposed regulations, the probability of such an encounter is about 3 percent over 10 years, which is equivalent to one encounter in 300 years (if the maximum number of strikes are made). This level of risk is far from the certainty of take at issue in *Kokechik*. Additionally, and importantly, a 300-year time period stretches into several gray whale generations as well as human generations making predictions about the status of the population and the potential impacts on the population extremely attenuated. Accordingly, we find that the risk of a lethal taking of a WNP is

remote. In addition, such a level of mortality is well below the sustainable level of human-caused mortality for WNP gray whales reported in the current SAR and calculated using the PBR method (currently 0.06 WNP gray whales per year, or approximately 1 whale every 17 years).

Making an unsuccessful strike attempt on a WNP gray whale is also a concern but would not result in death or injury and would likely elicit a response similar to that observed in whales that are tagged or biopsied for research purposes (DEIS Subsection 4.4.3.3.2, Change in Abundance and Viability of the WNP Gray Whale Stock). The best available scientific evidence suggests that such encounters would be unlikely to have a lasting effect on the health of the affected animal. Although the probability of such an encounter (once in 57 years) is greater than the probability of a successful strike (once in 300 years), it too is far from the certainty or "inevitable" lethal take at issue in *Kokechik*. We consider this risk to be slight, as well, because there is no mortality associated with unsuccessful strike attempts, impacts associated with such an event are temporary, and because the interval of 57 years is also multiple gray whale generations.

Activities that employ vessel approaches on large whales are regularly reviewed by NMFS under the MMPA. When issuing permits under the MMPA, NMFS generally limits the number of approaches within defined distances (typically less than 100 yards for large cetaceans) because of the potential for such approaches within those limits to affect or disrupt whale behavior. For example, NMFS Permit #15569 for ENP gray whales (77 FR 35657, June 14, 2012) authorized 5,000 approaches of gray whales over the course of 5 years. While this is a large number of authorized approaches, the NEPA analysis prepared for that permit found that approaches during research have not been shown to result in long-term or permanent adverse effects on individual animals regardless of the number of times the activity occurs because the frequency and duration of the activities allows adequate time for animals to recover from any potential adverse effects such that additive or cumulative effects of the action on its own are not expected. That analysis further notes that no measurable effects on population demographics are anticipated because any sub-lethal effects are expected to be short-term, and the proposed action is not expected to result in mortality of any animals.

Based on the best available information, gray whales would likely display a range

of reactions to hunting- or training-related approaches, and it is uncertain whether any of the approaches would disrupt normal whale behavior. However, to be precautionary we believe it is reasonable to conclude that some of those approaches have the potential to disrupt whale behavior, so the regulations limit the number of approaches. It is also reasonable to conclude that it is unlikely that any of the estimated 8 approaches on WNP whales in the context of more than 3,500 approaches estimated to occur over the 10-year span of these regulations would in and of themselves elicit a behavioral response that rises to the level of potential harassment. The geographical area where the approaches might occur is not known to be biologically important for WNP gray whales and the very limited number of likely approaches on WNP whales does not create the magnitude, frequency (continuous, chronic) and duration of encounter that experience suggests might cumulatively disrupt their behavior. Actual approach distances are not possible to predict. However, as was the case in the Tribe's 1999 and 2000 hunts, even-year hunts would occur during a time when gray whales are actively migrating (as opposed to feeding and breeding), which may further limit close and sustained approaches on gray whales and chronic, repeated, or cumulative exposure to individual whales. Also, some of the approaches could be made during training exercises involving only paddle-driven canoes that have limited ability to pursue and maintain close contact with whales that are actively migrating. Consequently, although there is a likelihood that over the course of the 10-year waiver period 8 WNP gray whales would be approached within 100 yards, we consider any risks to such whales to be slight because there is no mortality associated with approaches, some approaches may be so far away as to be undetectable by the whales, and any reactions by approached whales would likely be temporary and not interfere with the whales' active migration through an area not used for breeding or feeding.

Under the proposed regulations, there is a 3 percent probability of killing and an 18 percent probability of an unsuccessful strike attempt on at least one WNP gray whale and a likelihood of approaching 8 WNP gray whales over the 10-year period of the regulations, which translates to a probability of a Makah tribal hunt killing one WNP gray whale every 300 years, attempting to strike one WNP gray whale every 57 years, and approaching on average of less than one WNP whale per year over 10 years. We find

that this constitutes an acceptable level of risk for management purposes and under the MMPA.

B. The Proposed Regulations Will Not Disadvantage the ENP Gray Whale Stock

Because the proposed regulations will not appreciably affect the status of the ENP gray whale stock relative to its OSP, we conclude that the proposed regulations will not disadvantage the ENP gray whale stock.

V. Required Procedures and Statements Related to the Intention to Issue Regulations

Section 103(d) of the MMPA requires that regulations regarding the taking of marine mammals be made on the record after opportunity for an agency hearing (16 U.S.C. §1373(d)).

Notice of Hearing: Regulations at 50 CFR 228 contain detailed requirements for the procedures for conducting an agency hearing on the proposed regulations to limit the harvest. People interested in participating in the hearing are advised to review these procedural regulations. The procedures require specific information to be included in the notice of the hearing, and that information follows:

(1) The nature of the hearing: The purpose of the hearing is to allow parties affected by the agency's proposed regulations to present additional testimony and evidence for inclusion in the administrative record. At the conclusion of the hearing and after consideration of the whole record, the Administrative Law Judge shall make a recommendation to the Secretary regarding adoption of the regulations.

(2) The place and date of the hearing: (see ADDRESSES and DATES).

(3) The legal authority for the hearing: The hearing is held under the authority of section 103 of the MMPA (16 U.S.C. 1373) and implementing regulations (50 CFR part 228).

(4) The proposed regulations and statements required by MMPA section 103(d) (16 U.S.C. 1373(d)): See the proposed regulatory text at the end of this document and the statements below.

A. A statement of the Estimated Existing Levels of the Species and Population Stocks of the Marine Mammal Concerned.

ENP gray whales are the subject of the proposed waiver and regulations and are recognized as a distinct population stock under the MMPA (Carretta et al., ~~2015~~2017). The most recent population assessment by Durban et al. (~~2013~~2017) estimates the abundance of the ENP gray whale stock at ~~19,230~~24,420 to ~~22,900~~29,830 whales, with a point estimate of ~~20,990. The~~26,960 and resultant minimum abundance estimate, used for calculating PBR, ~~is 20,125 (Carretta et al., 2015).~~of 25,849.

NMFS does not currently recognize further stock structure within the ENP gray whale stock. We have said, however, that the PCFG may warrant consideration as a stock in the future and the SAR process will continue to evaluate any relevant information on this issue. The most recent assessment of PCFG whales (Calambokidis et al., ~~2014~~2017) estimates its abundance at ~~209~~243, with a minimum abundance estimate of ~~197~~228. The latest NMFS stock assessment report (Carretta et al., ~~2015) uses this~~2017) used the previously reported minimum abundance estimate of 197 (Calambokidis et al., 2014) to calculate a PBR for PCFG whales of 3.1 animals per year.

B. A Statement of the Expected Impact of the Proposed Regulations on the Optimum Sustainable Population of Such Species or Population stock.

The proposed regulations will not appreciably affect the ENP gray whale stock relative to its OSP. The regulations would at most allow the Tribe to harvest 3 whales in even years and 1 whale during odd years, for a maximum ~~total~~harvest of 20 whales over 10 years. Total mortality of ENP whales could ~~equal~~reach 25 whales over 10 years ~~(as a result~~if the maximum number of ~~some~~strikes are made (3 in even years and 2 in odd years) and all whales ~~being struck and lost during the odd-year hunting season).~~die. The ENP stock numbers approximately ~~21~~27,000 whales, and 25 whales over 10 years would have no appreciable effect on the population. The IWC catch limit for ENP whales equates to 124 whales per year, most of which are harvested by Chukotkan Natives. It is highly likely that any whales not harvested by the Makah Tribe would be harvested by Russian natives, as has been the case over the past several years. Thus the regulations would have no effect on the number of ENP whales harvested.

C. A Statement Describing the Evidence Before the Agency that Forms the Basis for the Regulations.

In proposing the waiver and regulations, we relied on the references cited in the March 2015 Draft Environmental Impact Statement on the Makah Tribe Request to Hunt Gray Whales and incorporate those here by reference. We also list relevant references to the scientific literature in a separate biological report (NMFS, ~~2017~~2018), which identifies other and more recent studies not included in the DEIS.

D. Any Studies or Recommendations Made By or For the Agency or the Marine Mammal Commission that Relate to the Establishment of the Regulation.

Relevant studies include those on gray whale abundance and stock structure (Punt and Wade, 2012; Weller et al., 2013; Calambokidis et al., ~~2014~~2017), estimation of potential biological removal levels and human caused mortalities (Carretta et al., ~~2015~~2017), and probabilities of encountering WNP gray whales (Moore and Weller, ~~2017~~in prep). Relevant recommendations include those by the MMC (see *Written advice received from the MMC,* below).

Issues of fact which may be involved in the hearing: Public comments related to the DEIS and comments from the MMC indicate that there may be several disputed facts regarding the gray whale populations subject to the proposed regulations. Among the potential factual issues are the following:

(1) Whether the regulations disadvantage the ENP gray whale stock;

(2) Whether the regulations adequately address the risk of taking whales from the WNP gray whale stock; and

(3) Whether the regulations adequately address the risk of negative impacts on PCFG gray whales.

Draft Environmental Impact Statement (DEIS): The DEIS is available online and may be viewed upon request (see ADDRESSES).

Written advice received from the MMC: The following summarizes ~~a letter~~letters sent to NMFS by the MMC with recommendations specific to proposed regulations.

Letter dated xxx, 2017

1. xxx

2. xxx

Letter dated xxx, 2018

1. xxx

2. xxx

[NOTE: To be filled in following consultation with the Marine Mammal Commission]

VI. Classification [Note – other classification components under development]

- *NEPA*

NMFS has prepared a DEIS under the requirements of NEPA. NMFS believes that a limited waiver of the MMPA take moratorium along with federally-approved hunt regulations for gray whales constitutes a major action subject to the requirements of NEPA. Therefore, these proposed regulations will not be finalized until a final Environmental Impact Statement has been issued and a Record of Decision is made.

- *Paperwork Reduction Act*

This proposed rule does not contain a collection-of-information requirement for purposes of the Paperwork Reduction Act of 1980.

- *ESA [Under development]*
- *Executive Order 12866—Regulatory Planning and Review [Under development]*
- *Regulatory Flexibility Act [Under development]*
- *Executive Order 12898—Federal Actions to Address Environmental Justice in Minority Populations and Low-Incomed Populations [Under development]*
- *Consultation with State and Local Government Agencies [Under development]*
- *Executive Order 13084-Consultation and Coordination with Indian Tribal Governments [Under development]*

List of Subjects in 50 CFR Part 216

Administrative practice and procedure, Exports, Fish, Imports, Indians, Labeling, Marine mammals.

Dated: _____

[Signature block]

For the reasons set out in the preamble, 50 CFR part 216 is proposed to be amended as follows:

PART 216—REGULATIONS GOVERNING THE TAKING AND IMPORTING OF MARINE MAMMALS

1. The authority citation for part 216 continues to read as follows:

Authority: 16 U.S.C. 1361 et seq., unless otherwise noted.

2. Subpart J is added to read as follows:

Subpart J—Taking of Eastern North Pacific (ENP) Gray Whales (*Eschrichtius robustus*) by the Makah Indian Tribe off the Coast of Washington State

§ 216.110 Purpose.

§ 216.111 Scope.

§ 216.112 Definitions.

§ 216.113 Take authorizations.

§ 216.114 Accounting and identification of gray whales.

§ 216.115 Prohibited acts.

§ 216.116 Applications for hunt permits.

§ 216.117 Requirements for monitoring, reporting, and recordkeeping.

§ 216.118 Expiration and amendment.

[Note: The draft regulations are provided to the MMC as a separate document during this part of the review process. The regulations will be inserted here in the FRN prior to publication.]

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[Note: These will not be published with the FRN but will be posted on the NMFS website]

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Subpart J—Taking of Eastern North Pacific (ENP) Gray Whales (*Eschrichtius robustus*) by the Makah Indian Tribe off the Coast of Washington State

§ 216.110 Purpose.

The purpose of this subpart is to establish regulations governing the take of whales from the eastern North Pacific (ENP) gray whale (*Eschrichtius robustus*) stock by the Makah Indian Tribe and its enrolled members in accordance with the Secretary's determination to issue a limited waiver of the MMPA take moratorium pursuant to 16 U.S.C. 1371(a)(3).

§ 216.111 Scope.

This subpart authorizes only the taking of ENP gray whales and only by enrolled members of the Makah Indian Tribe.

§ 216.112 Definitions.

In addition to the definitions provided in the MMPA, for purposes of this subpart, the following definitions apply:

(a) "Bonilla-Tatoosh Line" means the line running from the western end of Cape Flattery (48°22'53" N. lat., 124°43'54" W. long.) to Tatoosh Island Lighthouse (48°23'30" N. lat., 124°44'12" W. long.) to the buoy adjacent to Duntze Rock (48°28'00" N. lat., 124°45'00" W. long.), then in a straight line to Bonilla Point (48°35'30" N. lat., 124°43'00" W. long.) on Vancouver Island, British Columbia.

(b) "Calf" means any gray whale less than 1 year old.

(c) "Enrolled member" or "member" of the Makah Indian Tribe means a person whose name appears on the membership roll maintained by the Makah Tribal Council.

(d) "ENP gray whale" means a member of the eastern North Pacific stock of gray whales (*Eschrichtius robustus*), as defined in the NMFS stock assessment report.

(e) "Even-year hunt" means a hunting season spanning six consecutive months from December 1 in an odd-numbered year to May 31 in the following even-numbered year.

(f) "Gray whale" means a member of the species *Eschrichtius robustus*.

(g) "Harpooner" means a member of the Makah Indian Tribe who has been certified by the Tribe as having demonstrated the qualifications commensurate with the duties and

responsibilities of harpooning a gray whale.

(h) "Humane" has the same meaning as contained in 50 CFR § 216.3.

(i) "Hunt" and "hunting" mean to pursue, strike, harpoon, shoot, or land a gray whale under a hunt permit issued under § 216.113(a), or to attempt any such act, but does not include hunting approaches, training approaches, or training harpoon throws. A "hunt" means any act of hunting.

(j) "Hunt permit" means a permit issued by NMFS in accordance with 16 U.S.C. 1374 and this subpart that authorizes hunting, hunting approaches, training approaches, and training harpoon throws.

(k) "Hunting approach" means to cause, in any manner, a vessel to be within 100 yards of a gray whale during a hunt.

(l) "Land" and "landing" mean bringing a gray whale or any products thereof onto the land in the course of hunting.

(m) "Makah Indian handicrafts" means articles made by a member of the Makah Indian Tribe that are obtained pursuant to a license issued under the Whaling Convention Act and implementing regulations at 50 CFR part 230 and (1) contain any nonedible products of an ENP gray whale, and (2) are significantly altered from their natural form and which are produced, decorated, or fashioned in the exercise of traditional Makah Indian handicrafts without the use of pantographs, multiple carvers, or similar mass copying devices. Makah Indian handicrafts include, but are not limited to, articles that are carved, beaded, drawn, or painted.

(n) "Makah Indian Tribe" or "Tribe" means the Makah Indian Tribe of the Makah Indian Reservation as described in the list of federally recognized Indian tribes maintained by the U.S. Department of the Interior.

(o) "Minimum population estimate" for PCFG gray whales is the lower 20th percentile of the PCFG population estimate;

~~(o)~~(p) "NMFS hunt observer" means a person designated by NMFS to accompany and observe a hunt.

~~(p)~~(q) "Odd-year hunt" means a hunting season spanning four consecutive months from July 1 to October 31 in an odd-numbered year.

~~(q)~~(r) "Pacific Coast Feeding Group (PCFG) gray whale" or "PCFG whale" means an individually identifiable ENP gray whale observed in at least 2 years between June 1 and November 30 in the eastern North Pacific between 41° N. lat. and 52° N. lat., excluding areas in Puget Sound, and entered into a photo-identification catalog(s) recognized by the Regional Administrator.

~~(r) "Potential biological removal (PBR) level" has the same meaning as contained in 50 CFR § 229.2.~~

(s) "PCFG population estimate" means an abundance estimate based on data derived from photo-identification surveys and catalog(s) recognized by the Regional Administrator. Such data will also be the basis for projecting PCFG population estimates in future hunting seasons.

~~(s)~~(t) "Recordkeeping" and "reporting" mean the collection and delivery of photographs,

biological data, harvest data, and other information regarding activities conducted under the authority of these regulations.

~~(t)~~(u) "Regional Administrator" means the Regional Administrator of NMFS for the West Coast Region.

~~(u)~~(v) "Rifleman" means a member of the Makah Indian Tribe who has been certified by the Tribe as having demonstrated the qualifications commensurate with the duties and responsibilities of shooting a gray whale.

~~(v)~~(w) "Safety officer" means a member of the Makah Indian Tribe who has been certified by the Tribe as having demonstrated the qualifications commensurate with the duties and responsibilities of evaluating hunt conditions including but not limited to visibility, target range and bearing, and sea condition.

~~(w)~~(x) "Stock assessment report" means the most recent and final stock assessment report issued by NMFS under 16 U.S.C. 1386.

~~(x)~~(y) "Strike" or "struck" means to cause a harpoon or other device to penetrate a gray whale's skin or an instance in which a gray whale's skin is penetrated by a harpoon or other device while hunting.

~~(y)~~(z) "Struck and lost" refers to a gray whale that is struck but not landed.

~~(z)~~(aa) "Take" has the same meaning as contained in 50 CFR § 216.3.

~~(aa)~~(bb) "Training approach" means to cause, in any manner, a training vessel to be within 100 yards of a gray whale.

~~(bb)~~(cc) "Training harpoon throw" means an attempt to contact a gray whale with a blunted spear-like device that is incapable of penetrating the skin of a gray whale.

~~(cc)~~(dd) "Training vessel" means a canoe or other watercraft used to train for a hunt that does not carry weapons ordinarily used by a harpooner or rifleman to strike a gray whale.

~~(dd)~~(ee) "Tribal hunt observer" means a tribal member or representative designated by the Tribe who has been certified by the Tribe as having demonstrated the qualifications commensurate with the duties and responsibilities of monitoring and reporting on a hunt.

~~(ee)~~(ff) "U&A" or "Makah Indian Tribe's U&A" means the Tribe's usual and accustomed fishing grounds, which area consists of the United States waters in the western Strait of Juan de Fuca west of 123°42'17" W. long. and waters of the Pacific Ocean off the mainland shoreline of the Washington coast north of 48°02'15" N. lat. (Norwegian Memorial) and east of 125°44'00" W. long.

~~(ff)~~(gg) "WNP gray whale" means a member of the western North Pacific stock of gray whales (*Eschrichtius robustus*) as defined in the NMFS stock assessment report and entered into a photo-identification catalog(s) recognized by the Regional Administrator.

~~(gg)~~(hh) "Whaling captain" means a member of the Makah Indian Tribe who has been certified by the Tribe as having demonstrated the qualifications commensurate with the duties and responsibilities of leading a hunt and is authorized by the Makah Indian Tribe to be in control of the whaling crew.

~~(hh)~~(ii) "Whaling crew" means those members of the Makah Indian Tribe taking part in a hunt under the control of a whaling captain and accompanied by a tribal hunt observer.

§ 216.113 Take authorizations.

(a) The Regional Administrator may issue hunt permits to the Makah Indian Tribe authorizing hunting of ENP gray whales, as well as hunting approaches, training approaches and training harpoon throws by enrolled members in accordance with 16 U.S.C. 1374 and the requirements of this subpart.

(1) *Hunt permit duration.* The duration of the initial hunt permit may not exceed three years from its effective date, and thereafter the duration of a hunt permit may not exceed five years.

(2) *Hunting seasons.* Even-year hunts and hunting approaches will only be authorized from December 1 of an odd-numbered year through May 31 of the following even-numbered year. Odd-year hunts and hunting approaches will only be authorized from July 1 through October 31 in an odd-numbered year.

(3) *Training period.* Hunt permits may authorize training approaches and training harpoon throws in any month.

(4) *Limits on the number of gray whales approached, subjected to unsuccessful strike attempts, struck, struck and lost, and landed.*

(i) *Approaches.* A hunt permit may authorize no more than 353 approaches, including both hunting ~~or~~and training approaches, each calendar year of which no more than 142 of such approaches may be on PCFG whales.

(ii) *Unsuccessful strike attempts*. A hunt permit may authorize no more than 18 unsuccessful strike attempts in an even-year hunt and 12 strike attempts in an odd-year hunt. Each training harpoon throw will count as an unsuccessful strike attempt.

(iii) *Strikes.* A hunt permit may authorize no more than three strikes in an even-year hunt and no more than two strikes in an odd-year hunt. In an even-year hunt, no more than one strike may be authorized within the 24-hour period commencing at the time of strike. The Regional Administrator may authorize the full number of strikes in the initial hunt permit and will adjust strikes downward in subsequent permits if necessary to ensure that strikes on PCFG whales do not exceed 16 over the waiver period, of which no more than 8 strikes may be on females.

(iv) *Struck and lost*. A hunt permit may authorize no more than three ENP gray whales to be struck and lost in any calendar year.

(v) *Landings.* A hunt permit may authorize no more than three ENP gray whales to be landed in an even-year hunt and no more than one ENP gray whale to be landed in an odd-year hunt; the number of ENP gray whales that the hunt permit may authorize to be landed in any calendar year will not exceed the number agreed between the United States and the Russian Federation as the U.S. share of the catch limit established by the International Whaling Commission.

(vi) *PCFG whales.* Notwithstanding the limits specified in this subsection, no hunting will be authorized for an upcoming season if the Regional Administrator determines that either of the following conditions applies:

1. The most recent PCFG population estimate, based on photo-identification surveys, is less than 192 whales or the associated minimum population estimate is less than 171 whales; or
2. The PCFG population estimate for the upcoming hunting season is projected to be less than 192 whales or the associated minimum population estimate is projected to be less than 171 whales.
3. The Regional Administrator will inform the Tribe of any such determination pursuant to § 216.114(a)(1) of this subpart.

~~(vi)~~(vii) *WNP gray whales.* The hunt permit will provide that in the event the Regional Administrator determines a WNP gray whale was struck during a hunt, the Regional Administrator will notify the Makah Indian Tribe in writing, and require that the Tribe cease hunting for the duration of the permit, unless and until the Regional Administrator determines that measures have been taken to ensure no additional WNP gray whales are struck during the duration of the permit. No further hunt permits will be issued unless and until the Regional Administrator determines that measures have been taken to prevent additional WNP gray whales strikes during the ~~duration~~remainder of the waiver period.

(5) *Images and samples.* NMFS hunt observers, tribal hunt observers, and members of the Makah Indian Tribe may collect still or motion pictures as needed to document hunting and training approaches, strikes (successful and unsuccessful attempts), and landings. Persons designated by NMFS and by the Makah Indian Tribe may also collect, store, transfer, and analyze specimen samples from landed gray whales.

(6) *Hunt permit terms and conditions.* Each hunt permit will specify:

(i) Those terms required by 16 U.S.C. 1374(b);

~~(i) The maximum number of hunting and training approaches authorized per calendar year;~~

~~(ii) The maximum number of unsuccessful strike attempts, including training harpoon throws, authorized per hunting season and per calendar year;~~

~~(iii) The maximum number of strikes authorized per hunting season;~~

~~(iv) The maximum number of struck and lost gray whales authorized per calendar year;~~

~~(v) The maximum number of landings authorized per hunting season and over the duration of the hunt permit;~~

(ii) The limits established under paragraph (4) of this subsection;

~~(ii)~~(iii) The area where hunts, hunting approaches, training approaches, and training harpoon throws are allowed, which will be limited to the waters of the Makah Indian Tribe's U&A west of the Bonilla-Tatoosh Line except as specified in § 216.115(g), and specify any site and time restrictions to protect Olympic Coast National Marine

Sanctuary resources pursuant to consultation under 16 U.S.C. 1434(d) of the National Marine Sanctuary Act~~;~~ ;

~~(iii)~~(iv) The type and timing of notice that the Makah Indian Tribe must provide to NMFS before issuing a tribal whaling permit authorizing a hunt, hunting or training approaches, or training harpoon throws;

~~(iv)~~(v) Measures to be taken by the hunt permit holder to provide for the safety of the whaling crew, the public, and others during a hunt;

~~(v)~~(vi) That the hunt permit authorizes only the take of ENP gray whales and not the take of any other marine mammals; and

~~(vi)~~(vii) Such other provisions as the Regional Administrator deems necessary.

(7) *Required determinations.* Before issuing a hunt permit the Regional Administrator must make the following determinations:

(i) The authorized manner of hunting is humane;

(ii) The Makah Indian Tribe has enacted a tribal ordinance governing the hunt that is consistent with these regulations;

(iii) The Makah Indian Tribe has in place certification procedures for whaling captains, riflemen, harpooners, tribal hunt observers, and safety officers and a process to ensure compliance with those procedures;

(iv) There are adequate photo-identification catalogs and processes available to allow the identification of WNP gray whales and PCFG whales as described in § 216.114(b); ~~and~~

(v) The most recent PCFG population estimate is at least 192 whales and the associated minimum population estimate is at least 171 whales;

(vi) The PCFG population estimate for the first hunting season covered by the permit is projected to be at least 192 whales and the associated minimum population estimate is projected to be at least 171 whales; and

~~(v)~~(vii) The Makah Indian Tribe has obtained any relevant incidental take authorization for WNP gray whales or other marine mammals.

~~(vi)~~(viii) Except for the initial hunt permit, before issuing a hunt permit the Regional Administrator must determine that the Makah Indian Tribe has complied with the requirements of these regulations and all prior permit terms and conditions, or if the Makah Indian Tribe has not fully complied, that it has adopted measures to ensure compliance.

(b) Gray whales landed under a hunt permit may be utilized as follows:

(1) Enrolled members of the Makah Indian Tribe may possess, consume, and share, within the Tribe's reservation boundaries, nonedible and edible products of ENP gray whales. Outside the Makah Indian Tribe's reservation boundaries, enrolled members of the Makah Indian Tribe may possess and consume edible products of ENP gray whales, and may share such edible products with any person attending a tribal or intertribal gathering, so long as there is not more than two pounds of edible ENP gray

whale products per person attending the gathering. Except as provided in § 216.115(l), enrolled members of the Makah Indian Tribe may not sell, offer for sale, or purchase~~, or barter~~ any ENP gray whale products.

(2) Enrolled members of the Makah Indian Tribe may possess, make~~, barter~~, and sell in the United States, Makah Indian handicrafts made from ENP gray whales taken pursuant to these regulations, provided each handicraft, when sold, is permanently marked with a distinctive marking approved by the Makah Tribal Council, and is accompanied by a certificate of authenticity issued by the Makah Tribal Council or its designee and entered in the Tribe's official record of Makah Indian handicrafts.

(3) Any person may possess, purchase, or re-sell, in the United States, Makah Indian handicrafts made from ENP gray whales taken pursuant to these regulations, provided each handicraft is permanently marked with a distinctive marking approved by the Makah Tribal Council and is accompanied by a certificate of authenticity issued by the Makah Tribal Council or its designee and entered in the Tribe's official record of Makah Indian handicrafts.

(4) Any person may consume edible ENP gray whale products within the boundaries of the Makah reservation if the products are received from an enrolled member of the Makah Indian Tribe, or outside the boundaries of the Makah reservation at a tribal or intertribal gathering if products are received from an enrolled member of the Makah Indian Tribe, so long as the products are consumed exclusively at the gathering, and are not further distributed.

(c) The Makah Indian Tribe is responsible for managing all activities of any Makah Indian tribal member carried out under this section.

§ 216.114 Accounting and identification of gray whales.

(a) *Notifications*

(1) Thirty days prior to the beginning of a hunting season specified in § 216.113(a)(2), the Regional Administrator will notify the Makah Indian Tribe in writing of the ~~limit on~~maximum number of PCFG whales, including females, that may be struck during the upcoming hunting season. The limit will ~~be a value equal to~~take into account the ~~PBR level~~number of PCFG whales and the number of strikes made on PCFG whales as described ~~in the NMFS stock assessment report, minus the average annual number of human-caused mortalities from sources other than the Makah Indian Tribe's hunt as described in that same report.~~under § 216.113(a)(4)(iii).

(2) By November 1 ~~and prior to the beginning~~ of ~~a hunting season specified in § 216.113(a)(2),~~each year, the Regional Administrator will notify the Makah Indian Tribe in writing of the proportion of gray whales that will be presumed to be PCFG whales for each month of the upcoming calendar year based on ~~such~~PCFG whales' occurrence in the Makah U&A, as determined by the Regional Administrator. The presumed proportions will be used to account for PCFG whales that are subjected to hunting or training approaches or unsuccessful harpoon attempts, or struck and lost,

and for the requirements under § 216.117, except as otherwise determined by the Regional Administrator in § 216.114(b)(1).

(3) The Regional Administrator will notify the Makah Indian Tribe in writing when the Tribe has reached the limit of PCFG whales that may be struck in any hunting season.

(b) *Identification and accounting of gray whales*

(1) *Even-year hunts*. Based on available evidence, the Regional Administrator will determine whether a gray whale that is subjected to a hunting approach, struck and lost, or struck and landed in an even-year hunt is a WNP gray whale, a PCFG whale, or cannot be identified as either. A whale affirmatively identified as a PCFG whale will be counted accordingly. A whale that is struck and lost and cannot be identified will be presumed to be a PCFG whale in accordance with the proportions specified in § 216.114(a)(2) and will be counted accordingly. The Regional Administrator will notify the Makah Indian Tribe of this determination in writing.

(2) *Odd-year hunts.* Based on available evidence, the Regional Administrator will determine whether a gray whale that is subjected to a hunting approach, struck and lost, or struck and landed in an odd-year hunt is a WNP gray whale or cannot be identified as such. A gray whale that cannot be identified as a WNP gray whale will be counted as a PCFG whale. The Regional Administrator will notify the Makah Indian Tribe of this determination in writing.

(3) *Training approaches.* All gray whales subjected to training approaches are presumed to be PCFG whales in accordance with the proportions specified in § 216.114(a)(2).

§ 216.115 Prohibited acts.

It is unlawful for the Makah Indian Tribe or any enrolled Makah Indian tribal member to:

(a) Take any gray whale except as authorized by a hunt permit issued under § 216.113(a) or any other provision of part 216. Any gray whale that is struck without such authorization will be counted toward the limits established under a hunt permit issued pursuant to § 216.113(a). Any gray whale that is landed without such authorization will be counted toward the limits established under a hunt permit issued pursuant to § 216.113(a) and will be counted as part of the U.S. share of the catch limit established by the International Whaling Commission.

(b) Participate in a hunt while failing to carry onboard the vessel at all times a hunt permit issued by NMFS and a tribal whaling permit issued by the Makah Indian Tribe, or an electronic copy or photocopy of these permits.

(c) Make a training approach or a training harpoon throw while failing to carry onboard the training vessel at all times an electronic copy or photocopy of the hunt permit issued by NMFS and a training logbook approved by the Makah Indian Tribe for recording training approaches and training harpoon throws.

(d) Participate in a hunt as a whaling captain, rifleman, harpooner, tribal hunt observer, or safety officer, unless the individual's name is included in a tribal certification report issued under § 216.117(a)(6)(i).

(e) Violate any provision of any hunt permit issued under § 216.113(a).

(f) Hunt or make a training harpoon throw on a calf or an adult gray whale accompanying a calf.

(g) Hunt outside the geographic area identified in § 216.113(a)(6)(~~viii~~iii), unless in pursuit of a gray whale that has already been struck within that area.

(h) Hunt, make a hunting or training approach, or make a training harpoon throw after reaching the respective limits specified in the hunt permit in § 216.113(a)(4)(i) through (v).

(i) Hunt a gray whale if the limit on PCFG whales that may be struck is less than one~~, as specified in § 216.114(a)(1) or~~ as a result of accounting in § 216.114(b)(1) through (3).

(j) Hunt a gray whale after the Makah Indian Tribe has been notified in writing by the Regional Administrator under § 216.114(a)(3) that the limit of PCFG whales that may be struck has been reached~~.~~ or that the PCFG abundance is below the limits specified in § 216.113(a)(4)(vi).

(k) Hunt after a gray whale has been landed and before the Makah Indian Tribe has received notification from the Regional Administrator in accordance with § 216.114(~~e~~b).

(l) Sell, offer for sale, or purchase~~, or barter~~ any gray whale products, except Makah Indian handicrafts that are permanently marked with a distinctive marking approved by the Makah Tribal Council and accompanied by a certificate of authenticity issued by the Makah Tribal Council or its designee.

(m) Possess products from a gray whale taken under § 216.113, except as authorized under that section.

(n) Make a false statement in an application for a hunt permit or in a report required under this subpart.

(o) Transfer or assign a hunt permit issued under this subpart.

(p) Fail to submit reports required by this subpart.

(q) Deny persons designated by NMFS access to landed gray whales for the purpose of collecting specimen samples.

(r) Fail to provide required permits and reports for inspection upon request by persons designated by NMFS.

(s) Allow anyone other than enrolled Makah Indian tribal members to be part of a whaling crew or to allow anyone other than such members or tribal hunt observers to be in a training vessel making a training approach.

§ 216.116 Applications for hunt permits.

(a) To obtain an initial hunt permit, the Makah Indian Tribe must submit an application to the Regional Administrator, signed by an official of the Makah Tribal Council, that contains the following information and statements:

(1) The maximum number of ENP gray whales to be subjected to hunting or training approaches, struck, landed, and subjected to unsuccessful strike attempts;

(2) A demonstration that the proposed method of taking is humane;

(3) A demonstration that the proposed taking is consistent with these regulations;
(4) A copy of the currently enacted Makah Indian tribal ordinance governing whaling by Makah Indian tribal members; and
(5) A description of the certification process for whaling captains, riflemen, harpooners, tribal hunt observers, and safety officers, including any guidelines or manuals used by the Tribe to certify such persons.

(b) To obtain subsequent hunt permits, the Makah Indian Tribe must submit an application to the Regional Administrator, signed by an official of the Makah Tribal Council, that contains the information required in § 216.116(a) and the following information and statements:
(1) A description of how the Makah Indian Tribe has complied with the requirements of these regulations and previously issued hunt permits;
(2) A description of circumstances associated with gray whale(s) struck and lost under the most recently issued hunt permit, a description of the measures taken to retrieve such whale(s), and a description of measures taken by the Makah Indian Tribe to minimize future incidents of struck and lost gray whales; and
(3) A description of products obtained from gray whales landed under the most recently issued hunt permit, including a description of the disposition of any gray whale products deemed unsuitable for use by Makah Indian tribal members.

(c) The Regional Administrator will notify the Makah Indian Tribe of receipt of the application and will review the application for completeness. Incomplete applications will be returned with explanation. If the Makah Indian Tribe fails to resubmit a complete application within 60 days, the application will be deemed withdrawn.

(d) After receipt of a complete application, and the preparation of any NEPA documentation that the Regional Administrator has determined to be necessary, the Regional Administrator will publish a notice of receipt in the *Federal Register* and review the application as required by 16 U.S.C. 1374.

§ 216.117 Requirements for monitoring, reporting, and recordkeeping.

(a) In addition to the reporting provisions described in 50 CFR § 230.8, the Makah Indian Tribe will:
(1) Ensure a certified tribal hunt observer accompanies each hunt. The tribal hunt observer will record in a hunting logbook the time, date, and location (latitude and longitude, accurate to at least the nearest second) of each hunting approach of a gray whale, each attempt to strike a gray whale, and each gray whale struck. For each gray whale struck, the tribal hunt observer will record whether the whale was landed. If not landed, the tribal hunt observer will describe the circumstances associated with the striking of the whale and estimate whether the animal suffered a wound that might be fatal. For every gray whale approached by the whaling crew, the tribal hunt observer will attempt to take digital photographs.

(2) Ensure that each vessel involved in a training approach has onboard a training logbook for recording the date, location, and number of gray whales approached and the number of training harpoon throws. Each training approach and training harpoon throw must be reported to the tribal hunt observer within 24 hours.

(3) Maintain hunting and training logbooks specified in § 216.117(a)(1) and (2) and allow persons designated by NMFS to inspect them upon request.

(4) Ensure that each whaling captain allows a NMFS hunt observer to accompany and observe any hunt.

(5) Maintain an official record of all articles of Makah Indian handicraft, including the following information for each article certified by the Makah Tribal Council or its designee: the date of the certification; the permanent distinctive mark identifying the article as a Makah Indian handicraft; a brief description of the handicraft, including artist's full name, gray whale product(s) used, and approximate size; and at least one digital photograph of the entire handicraft. A copy of the official record of Makah Indian handicrafts will be provided to NMFS personnel, including NMFS enforcement officers, upon request.

(6) Ensure that the following reports are filed with the NMFS West Coast Region's office in Seattle, Washington, by the indicated date:

(i) *Tribal certification report*. Thirty days prior to the beginning of a hunting season, the Makah Indian Tribe must provide NMFS with a report that includes the names of all tribal hunt observers and enrolled Makah Indian tribal members who have been certified to participate in a hunt as whaling captains, riflemen, harpooners, and safety officers. The Tribe may provide additional names during the hunting season.

(ii) *Incident report*. After striking a gray whale, the Makah Indian Tribe must submit an incident report within 48 hours to NMFS. A report may address multiple gray whales so long as NMFS receives the report within 48 hours of the first gray whale being struck. For any gray whale(s) struck and lost, the report must contain the information in subparagraph (1) and for any gray whale(s) struck and landed the report must contain the information in subparagraph (2):

1. Struck and lost gray whale(s): the whaling captain's name; the tribal hunt observer's name; the date, location (latitude and longitude, accurate to at least the nearest second), time, and number of strikes and attempted strikes if any; the method(s) of strikes and attempted strikes; an estimate of the whale's total length. The report will describe the circumstances associated with the striking of the whale and estimate whether the animal suffered a wound that might be fatal. The report will include all photographs taken by a tribal hunt observer of gray whales struck and lost by the whaling crew. The report may also contain any other observations by the Makah Indian Tribe concerning the struck and lost whale(s) or circumstances of the hunt.

2. Struck and landed gray whale(s): the whaling captain's name; the tribal hunt observer's name; the date, location (latitude and longitude, accurate to at least the nearest second), time, and number of strikes and attempted strikes if any; the method(s) of strikes and attempted strikes; the whale's body length as measured from the point of the upper jaw to the notch between the tail flukes; an estimate of the whale's maximum girth; the extreme width of the tail flukes; the whale's sex and, if female, lactation status; the length and sex of any fetus in the landed whale; photographs of the whale(s), including the entire dorsal right side, the entire dorsal left side, the dorsal aspect of the fluke, and the ventral aspect of the fluke. All such photographs must include a ruler to convey scale and a sign specifying the Makah Indian Tribe's name, whaling captain's name, whale species, and date. The report must also describe the time to death (measured from the time of the first strike to the time of death as indicated by relaxation of the lower jaw, no flipper movement, or sinking without active movement) and the disposition of all specimen samples collected and whale products, including any whale products deemed unsuitable for use by Makah Indian tribal members. The report may also contain any other observations by the Makah Indian Tribe concerning the landed whale or circumstances of the hunt.

(iii) *Hunt report*. Within 30 days after the end of each hunting season the Makah Indian Tribe must submit a report to NMFS that describes the following information for each day of hunting:

1. Struck and lost gray whale(s): the report must contain the information specified in § 216.117(a)(6)(ii)(1).
2. Struck and landed gray whale(s): the report must contain the information specified in § 216.117(a)(6)(ii)(2).
3. Hunting approaches and unsuccessful strike attempt(s): For each gray whale approached or subjected to an unsuccessful strike attempt(s), the report must contain: the whaling captain's name; the tribal hunt observer's name; the date, location (latitude and longitude, accurate to at least the nearest second), time, and number of approaches and unsuccessful strike attempts; the method of attempted strikes; an estimate of the total length of any whale subjected to an unsuccessful strike attempt; and all photographs taken by a tribal hunt observer of gray whales approached by the whaling crew. The report may also contain any other observations by the Makah Indian Tribe concerning the whale(s) approached or subjected to unsuccessful strike attempts or circumstances of the hunt.

(iv) *Annual approach report*. By January 15 of each year, the Makah Indian Tribe must submit a report to NMFS containing the dates, location, and number of gray whales subjected to hunting approaches, training approaches, and training harpoon throws during the previous calendar year. The report may also contain

any other observations by the Makah Indian Tribe concerning the approached whales or circumstances of the approaches and training harpoon throws.

(v) *Annual handicraft report*. By ~~September 30~~April 1 of each year, the Makah Indian Tribe must submit a report to NMFS which describes all Makah Indian handicrafts certified by the Makah Tribal Council or its designee during the previous calendar year. The report must contain the following information for each handicraft certified: the date of the certification; the permanent distinctive mark identifying the article as a Makah Indian handicraft; a brief description of the handicraft, including artist's full name, gray whale product(s) used, and approximate size; and at least one digital photograph of the entire handicraft.

(vi) The hunt report, annual approach report, and annual handicraft report collected pursuant to this section will be maintained and made available for public review in the NMFS West Coast Region's office in Seattle, Washington.

(b) Upon receiving an incident report specified in § 216.117(a)(6)(ii) documenting that 8 ~~or more~~ gray whales have been struck, the Regional Administrator will evaluate:

(1) The photo-identification and notification requirements described in § 216.113(a)(7)(iv) and § 216.114. The evaluation will address the status of gray whale photo-identification catalogs used to manage gray whale hunts authorized under this subpart, the survey efforts employed to keep those catalogs updated, the level of certainty associated with identifying cataloged WNP gray whales and PCFG whales, the role of ancillary information such as genetic data during catalog review, and any other elements deemed appropriate by the Regional Administrator. The evaluation will be made available to the public no more than 120 days after receiving the subject incident report.

(2) The humaneness of the authorized manner of hunting as specified in § 216.113(a)(7)(i). To evaluate humaneness, NMFS will convene a team composed of a veterinarian, a marine mammal biologist, and all tribal hunt observers and NMFS hunt observers who were witness to the strikes described in the incident reports required by this section. The team's evaluation will address the effectiveness of the hunting methods used by the Makah Indian Tribe, the availability and practicability of other such methods, and evaluate the pain and time to death of hunted whales, and any other matters deemed appropriate by the Regional Administrator and the team. The team's evaluation will be made available to the public no more than 120 days after receiving the subject incident report.

(c) The NMFS West Coast Region's Seattle office is located at 7600 Sand Point Way NE, Seattle, WA 98115-0070.

§ 216.118 Expiration and amendment.

(a) These regulations will expire at the end of [insert date 10 years from enactment], unless extended.

13 March 2018

Mr. Barry A. Thom
Regional Administrator
West Coast Region
National Marine Fisheries Service
1201 NE Lloyd Boulevard, Suite 1100
Portland, OR 97232

Dear Mr. Thom:

On 11 July 2017, the Marine Mammal Commission (the Commission) provided comments and recommendations to the National Marine Fisheries Service (NMFS) on a proposed waiver determination and draft regulations under the Marine Mammal Protection Act (MMPA) to authorize the Makah Tribe to hunt gray whales. Those comments and recommendations were provided in accordance with section 103(d) of the MMPA, which requires that NMFS publish before, or concurrent with, proposing such regulations, "any recommendations made by or for the…Marine Mammal Commission which relate to the establishment of such regulations." Based on the Commission's comments and other input, NMFS has indicated that it is considering certain modifications related primarily to the proposed approach for managing the taking of gray whales from the Pacific Coast Feeding Group (PCFG). NMFS requested that the Commission review the proposed changes and provide any supplemental comments and recommendations it may want to submit for publication with the proposed rule.

The Commission identified as its primary concern the need to avoid, to the maximum extent practicable, the accidental taking of gray whales from the endangered Western North Pacific (WNP) stock, and secondarily, to avoid taking that could disadvantage PCFG whales regardless of whether they are considered a separate stock. The revisions being proposed by NMFS are not expected to have any negative effect on the possibility that WNP gray whales will be taken and, as such, the Commission stands by its earlier comment that the risk of killing or seriously injuring a WNP gray whale appears to be sufficiently low that it should not present an insurmountable obstacle to NMFS moving forward with a proposed rule to authorize the Makah Tribe to take whales from the Eastern North Pacific (ENP) stock.

The revised proposal, however, would change the way the odd-year hunt is to be managed and would have implications related to PCFG whales. NMFS has revised its draft proposal to switch from managing the take of PCFG whales based on a potential biological removal (PBR) formula, to one that would set a strike limit of 16 PCFG whales over the 10-year life of the proposed regulations and establish a minimum PCFG population abundance level below which no hunting would be allowed. As noted by NMFS in the preamble accompanying the revised draft proposed rule, this change was made in response to comments that a PBR-based approach should account for all human-caused mortality and the fact that NMFS lacked such information for parts of the range occupied by PCFG whales outside U.S. waters. In addition, the revised preamble notes that the PBR concept was developed to allow precautionary management in situations where managers lack

reliable or complete information regarding a stock's abundance, trends, and productivity and over relatively long time frames (i.e., decades). For PCFG whales, NMFS has over 20 years of data from annual surveys, which yield relatively precise abundance estimates and enable the agency to use a population forecast model for regulating the taking of PCFG whales. NMFS contends that this approach is more appropriate than a PBR approach for managing the taking of PCFG whales, because population information is readily available. Also, NMFS states that, because it is proposing to issue regulations for a ten-year period, this shorter-term management approach is appropriate.

The Commission agrees that, given the availability of reliable information on the abundance and trends of PCFG whales and rates of recruitment of whales to this putative stock, there is no reason to manage removals under a PBR framework. Further, the Commission believes that setting the allowable strike limit at 16 PCFG whales over a ten-year period should provide reasonable certainty that the proposed level of hunting PCFG whales will not have adverse impacts on this "stock." We note, however, that the resulting harvest levels (no more than one whale landed per year during odd-year hunts and up to three whales landed per year during even-year hunts) falls well short of the Makah Tribe's identified subsistence need and the Tribe's initial waiver request. We trust that NMFS will assess the relationship between the adopted harvests levels and the Tribe's subsistence and cultural needs as part of the final environmental impact statement on this action.

NMFS is proposing to limit further the number of strikes of female gray whales during odd-year hunts to no more than eight over the ten-year period covered by the regulations. As the draft preamble explains, this secondary strike limit is being proposed as a "precautionary measure given recent evidence that maternally directed site fidelity contributes to the population structure of the PCFG."[1] The Commission concurs with NMFS's proposal from a biological standpoint, but notes that the female strike limit may cause additional shortfalls in meeting the Tribe's subsistence needs. First, available information suggests that about 60 percent of PCFG whales are female (see Lang et al. 2001b in the references section of the draft preamble)[2]. Second, if the sex of a whale targeted during the hunt is a random event, chance may further limit the use of all 16 strikes if the first whales struck in a given ten-year period happen to be predominately female. Given the conditions under which hunts would be conducted, it may not be possible to selectively target males. Nevertheless, the Marine Mammal Commission recommends that NMFS and other appropriate experts work with the Tribe to develop hunting methods that minimize the chances that the female strike limit will be reached early in any ten-year period.

Under the draft proposed rule, odd-year hunting would be suspended if the most recent population estimate of PCFG whales drops below 192 individuals or if the associated N_{min} is less than 171 whales. The Commission agrees that setting such minimum thresholds is appropriate and that the values proposed are good starting points for examination in the course of the rulemaking. However, we note that, as proposed, reaching one of these thresholds would act as an on-off switch. If the PCFG declines, but still remains at or above the specified minimum levels, full hunting would be allowed. A more measured approach should be considered whereby intermediate thresholds

[1] Presumably, the limit on taking females is also being proposed the help maintain the reproductive potential of the PCFG.

[2] However, the revised draft preamble states, without further explanation, that "[f]emales are expected to comprise 50 percent of the PCFG," and cites a personal communication with Lang as the source of this information. We note further that NMFS proposes to attribute the sex of struck and lost whales according to the proportions of females and males within the PCFG.

would be set and allowable hunting levels lowered if the PCFG declines to such levels. It may be that NMFS considered such an approach but concluded that, with only two strikes and one landed whale allowed under the proposed odd-year hunts, there was not much room to establish intermediate harvest levels in response to some lesser population decline. If so, this should be noted in the preamble to the prosed rule and final environmental impact statement.

The Commission appreciates the opportunity to review and comment on the revisions to the draft proposed regulations.

Sincerely,

Peter O. Thomas, Ph.D.,
Executive Director

cc: Ms. Donna Darm, West Coast Regional Office, National Marine Fisheries Service
Mr. Steve Stone, West Coast Regional Office, National Marine Fisheries Service
Ms. Kirsten Erickson, Office of General Counsel, National Oceanic and Atmospheric Administration