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-XG584
	)

MAKAH TRIBE'S POST-HEARING BRIEF

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The Makah Indian Tribe submits this post-hearing brief pursuant to the October 25, 2019, Order Approving Hearing Management Proposal. *See* Order at 2 & Att. 1 § 2(f); *see also* 50 C.F.R. § 228.19(b); 85 Fed. Reg. 5196, 5196-97 (Jan. 29, 2020) (deadline for "proposed findings and conclusions and written arguments or briefs"). The Tribe supports the proposed waiver and regulations with the modifications requested by National Marine Fisheries Service (NMFS).

I. INTRODUCTION

The Makah Tribe's exercise of its treaty right of whaling is central to the culture, subsistence and identity of the Makah people. For Makahs, whaling comprises a constellation of activities and practices that are present in nearly every aspect of their lives. The community-wide benefits of whaling and of utilizing products from landed whales require active hunting. Makahs who negotiated the Treaty of Neah Bay in 1855 understood they were securing a right to *hunt* whales, not merely to observe or interact with whales in a non-consumptive manner.

The Tribe actively hunted whales for more than 2,000 years. After a hiatus triggered by non-Indian over-exploitation, the Tribe successfully hunted a gray whale for the first time in decades in 1999. The hunt brought great benefits to Makahs in the form of fresh meat and blubber, the ability to perform songs, dances, and ceremonies, and a level of community cohesiveness few living Makahs had previously experienced. However, Makah whaling was again put on hold in 2002, when a federal court required the Tribe to obtain a waiver of the Marine Mammal Protection Act's (MMPA) moratorium on taking marine mammals.

A generation of Makahs has been born (and many elders have died) while a slow, frustrating MMPA process has unfolded. This has contributed to Makahs feeling that the treaty right guaranteed by the United States has been denied. However, the process has reached a critical juncture that will determine whether the Tribe can resume hunting under its treaty.

On April 5, 2019, NMFS published a proposal to waive the take moratorium and promulgate regulations to govern a ceremonial and subsistence hunt of gray whales from the Eastern North Pacific (ENP) stock. The proposed hunt is extremely conservative, but its importance to the Tribe is enormous. At the hearing held in November 2019, the Tribe presented expert witness testimony that, together with NMFS's testimony, conclusively established that the proposed waiver and regulations will meet all the MMPA's requirements for all affected groups of gray whales, thereby enabling the Tribe to exercise its treaty whaling right.

The waiver allows the Tribe to take whales from the ENP stock. Recent abundance estimates indicate the stock is robust and likely at or near carrying capacity. In contrast to the most recent (2016) population estimate for the stock of nearly 27,000 whales, the proposed waiver and regulations would allow the Tribe to strike an average of 2.5 ENP gray whales per year for 10 years, or a total of 25 whales. This will have an indiscernible impact on the stock and will not prevent it from maintaining its optimum sustainable population (OSP) level. There is no credible scientific evidence indicating the very limited hunt will disadvantage the stock or otherwise fail to meet any of the MMPA's requirements for it. The current Unusual Mortality Event (UME) does not change this. Indeed, the potential impacts on the stock (perhaps resulting in the loss of thousands of whales), simply underscore the biological insignificance of a hunt that is limited to 25 whales over 10 years.

The hunt's potential impact on two smaller groups of whales is also fully consistent with the MMPA. The first group, the Pacific Coast Feeding Group (PCFG), is a feeding aggregation of the ENP stock, and not a separate stock under the MMPA. The proposed regulations contain several highly restrictive provisions to ensure that PCFG whales will not be disadvantaged and will remain a significant functioning element of the ecosystem. These include alternating

summer-fall and winter-spring hunting seasons, PCFG-specific strike limits, a presumption that whales struck in an odd-year hunt are PCFG whales, and a low abundance threshold which stops the hunt if overall PCFG abundance levels drop below their low point over the past 15 years – regardless of the cause of that decline.

The second small group, which NMFS calls the Western North Pacific (WNP) stock, utilizes summer feeding grounds off Russia's Sakhalin Island and southeastern Kamchatka Peninsula. In recent years some of these whales have been observed to migrate to wintering grounds off North America. The proposed waiver does not authorize takes of these whales. However, in consultation with the Marine Mammal Commission, NMFS designed the proposed regulations to protect this stock by including an alternating season hunt structure, a low number of strikes during the migratory season when a WNP whale could be encountered, a strict hunt-stoppage rule if NMFS determined a WNP whale has been struck, and a required pause between strikes in even-year hunts. Collectively, these and other measures reduce the probability of a Makah hunter striking a WNP whale to less than a once-per-century occurrence.

The Scientific Committee of the International Whaling Commission (IWC) reviewed NMFS's proposal in 2018. This review, which occurred at the conclusion of a five-year process to evaluate North Pacific gray whale stock structure and status, confirmed that the hunt, as constrained by the proposed regulations, will satisfy the IWC's conservation objectives for ENP, PCFG and WNP gray whales and, therefore, will also satisfy the MMPA's core objective of achieving or maintaining OSP for each stock or feeding aggregation.

Non-lethal aspects of the hunt, such as approaches and training harpoon throws, will not adversely affect gray whales' distribution or abundance. Like the thousands of annual approaches and biopsy samples that are authorized for scientific research each year and the

myriads of close encounters with whale watching vessels, the impacts are likely to be only temporary and will not have long-term effects on whale health or behavior.

The proposed regulations include important procedural protections that will facilitate adaptive management of the hunt and ensure NMFS will be able to consider and respond to new information. In addition to expiration of the waiver after 10 years, NMFS must issue at least three permits, which require additional public involvement and administrative review, and NMFS retains authority to modify regulations to reflect changing circumstances. These procedures give NMFS the opportunity to account for and respond to new information regarding the UME, climate change, and other potential future impacts to gray whales and their ecosystem.

As the Tribe described in its prehearing brief, animal welfare groups have opposed every effort by Makahs to resume exercising their treaty whaling right. In this proceeding, three such groups – Animal Welfare Institute (AWI), Sea Shepherd, and Peninsula Citizens for the Protection of Whales (PCPW) (collectively "NGO Parties") – reaffirmed their opposition to the taking of a single whale. For example, the potential compromise that one of Sea Shepherd's witnesses suggested was so antithetical to Sea Shepherd that one of its attorneys felt compelled to state for the record that "Sea Shepherd of course doesn't condone the killing of whales . . . by anyone, anywhere, anytime." Tr. V5 (Pruett) at 86:15-18.[1] AWI's sole witness, who has made a career of opposing Makah whaling, confirmed AWI's comments on NMFS's 2015 Draft EIS, which stated that, "[f]or decades, AWI has been opposed to the Makah Tribe resuming its hunt of gray whales, and . . . we remain strongly opposed to this day." Tr. V4 (Schubert) at 54:4-22; Schubert Decl. Ex. 1 at 1; [2] *see also id.* at 3 (stating that the Makah Tribe's "use" of gray whales

[1] The Tribe's citation to transcripts of the hearing uses the following convention: Tr. VOLUME# at PAGE #:LINE#s. Thus, the presiding officer's introduction at the start of the hearing would be cited as Tr. V1 at 4:3.
[2] Appendices A and B contain, respectively, a table of the written testimony with abbreviations for citations and a table of the exhibits cited with full titles.

"must not involve the intentional lethal take of a single whale"). Margaret Owens of PCPW, testified that "[w]e believe that the lethal removal of even one gray whale from our environment is a detriment to we, the people, and to the environment." Tr. V5 at 213:2-4.

The NGO Parties have attempted to cast doubt on the substantial scientific evidence that NMFS and the Tribe assembled to support the modest hunt allowed under the waiver and regulations and to criticize the rulemaking process. Their uncompromising opposition to any Makah hunt should be considered in evaluating the evidence and arguments they submitted. Ultimately, they failed to undermine the conclusions that the process satisfied all due process requirements and the proposed waiver and regulations satisfy all MMPA requirements.

II. FACTUAL BACKGROUND

A. The Treaty of Neah Bay and the Importance of Whaling to Makahs.[3]

In 1855, the Makah Tribe and the United States negotiated a treaty in which the Tribe ceded approximately 300,000 acres of land while reserving the right to harvest marine resources from the Pacific Ocean and Strait of Juan de Fuca. Makah negotiators understood they were protecting their foundational relationship with the sea and ensuring Makahs would always be able to provide for their culture, subsistence, spirituality, and economy from its waters.

For at least 2,700 years, hunting whales, **čiʔiʔapuk**, provided Makahs with substantial amounts of meat, blubber, oil, sinew, and bones for household consumption and material items. Reid Decl. at 118. But for Makahs, whaling has always been much more than hunting and consuming **čiʔiʔapuk**. *Id.* at 10, 78. Makah whaling includes a constellation of practices including ritual preparations and ceremonies, songs and dances, artistic representations, marriage practices,

[3] The Tribe's testimony about the treaty right and the ongoing importance of hunting whales to Makahs is uncontroverted. No other party submitted testimony or cross-examined the Tribe's witnesses on these subjects.

family titles, place names, potlatches and feasts, oral histories, authority and governance, and trade, among others. *Id.* at 46, 194-95; *see also id.* at 78-161.

Due to the near extirpation of whales by non-Native commercial whaling, opportunities for Makahs to hunt **čiťapuk** declined in the late 19th and early 20th centuries. *Id.* at 190-93. Makahs elected to suspend whaling, Arnold Decl. ¶ 21, but this was always viewed as temporary. Reid Decl. at 194-95. Greig Arnold testified that "whales have remained important to Makahs and we have always intended to go whaling again." Arnold Decl. ¶ 22.

The Tribe's forced hiatus from active hunting did not break the continuity of their relationship with whales and whaling. Tribal member Polly DeBari testified about the teachings of her family and the Makah community while she was growing up on the reservation:

> Growing up in Neah Bay we just soak up cultural knowledge as if our community was an encyclopedia. I can easily see how visitors have difficulty understanding our culture ‑ especially the value we place on whaling ‑ since they did not have that experience and knowledge of listening to Makahs from a young age. My family talked a lot about what a woman did to participate in a hunt and support a whaler she was with. As a teenager this felt unreal, like a dream. I never thought I'd use this knowledge, but when the Tribe decided to resume whaling I was able to live those teachings when we had the 1999 hunt. As a community, this is what we've always done – those teachings are still with us.

DeBari Decl. ¶ 5; *see also* Arnold Decl. ¶ 21.

The Tribe's commitment to resume whaling reached fruition in the 1990s. Reid Decl. at 197-98. The ENP gray whale stock was removed from the list of endangered and threatened species in 1994, and the Tribe obtained an aboriginal subsistence whaling catch limit from the IWC in 1997. *Id.* at 198. A whaling crew was formed, underwent rigorous physical and spiritual preparations, and, on May 17, 1999, struck a gray whale and towed it to Front Beach on the Reservation, where they were greeted by a huge crowd of Makahs eager to witness and celebrate the revival of their cultural, subsistence and spiritual relationship with whales. *Id.* at 198-99.

The plentiful, fresh supply of natural food from the hunt was distributed to the entire community through Makahs' traditional practice of sharing natural resources. Pascua Decl. ¶¶ 18-19 (sharing "is part of our custom as Makahs"); DeBari Decl. ¶ 12 (health benefits of eating traditional foods); Greene Decl. ¶ 16 ("food that sustained Makahs for thousands of years"); Tr. V2 (Pascua) at 43:14-15 ("whale products are . . . good for you, they're healthy"). Eating whale products connected Makahs with their ancestors and was a deeply spiritual experience. DeBari Decl. ¶ 13 ("it is more than nutrition; the animal was feeding my spirit").

Without the ability to hunt whales, Makahs would lose these benefits and many ceremonies, prayers, songs, and dances. As Mr. Arnold put it, "Makahs would lose their identity." Arnold Decl. ¶ 22. Whalers would find it difficult to sustain the high level of physical and spiritual preparation required to bring home a whale. *Id.* ¶ 17; Greene Decl. ¶¶ 7, 11.

Whaling also plays an important role in the Tribe's efforts to revitalize the Makah language. Maria Pascua testified that the use of Makah words associated with whaling and whaling songs and stories taught in high school language classes were brought to life through the 1999 hunt. Pascua Decl. ¶ 8; *see also* Tr. V2 at 43:16 – 45:7 (singing and explaining Makah "whale towing song"). Daniel Greene, Sr., who trained with crews in 1999 and 2000, testified that the Makah language is an important part of being a whaler, including learning from elders, studying whaling terminology and culture in school, and using his native language in preparing for another hunt. Greene Decl. ¶¶ 5, 7, 12-14.

The effect on the Tribe from the absence of whaling for more than twenty years speaks volumes about the importance of hunting whales. Whaler Daniel Greene, Sr. testified that the "absence of whaling since 2000 has been heart-wrenching, especially after the two years of hunting where our culture was living and breathing." Greene Decl. ¶ 11.

B. North Pacific Gray Whales.

Gray whales comprise a resilient species that has existed for millions of years. Tr. V5 (Villegas-Amtmann) at 196:1 – 197:7. They are extremely adaptable to different environmental conditions and food availability. *Id.* According to Dr. Villegas-Amtmann, "the gray whale is among the longest enduring baleen species, and has survived at least through one ice age (Jones et al. 1984), indicating extreme resilience to long term environmental fluctuations." Ex. SVA-3 at 14-15. Gray whales are also among the most studied and best understood whale species. *See* Tr. V2 (Weller) 106:15-23 (state of gray whale science is "very advanced"; "we have a terrific data set for [for the WNP stock, ENP stock, and the PCFG]").

Gray whales are found on the eastern and western margins of the North Pacific Ocean. Bickham Decl. at 6. Commercial whaling reduced North Pacific gray whales to very low levels by the early 20th Century, but those migrating and breeding in the eastern North Pacific, Eastern Gray Whales (EGW),[4] recovered to pre-exploitation levels and represent an abundant stock that numbered nearly 27,000 animals in 2016. *Id*. at 4, 6, 19. In contrast, gray whales that utilize summer feeding areas in the Sea of Okhotsk, including areas off the northeastern coast of Sakhalin Island and southeastern coast of the Kamchatka Peninsula, Western Gray Whales (WGW),[5] are currently at much lower levels (approximately 290 animals), but are steadily increasing at 2-5% annually. Bickham Decl. at 7; Weller Decl. ¶ 36; NMFS Ex. 2-12 at 13.

[4] The Eastern Gray Whale population is equivalent to the Eastern Breeding Stock described in the Declaration of John W. Bickham. The primary distinction between the EGW and the ENP stock is that in the most plausible stock structure hypotheses developed in the IWC's Rangewide Review, the EGW includes a Western Feeding Group (WFG) which utilizes summer feeding grounds off Sakhalin Island and the Kamchatka Peninsula and migrates to wintering grounds in the eastern North Pacific, while ENP stock, as defined by NMFS, does not include the WFG (NMFS views the WFG as part of a separate WNP stock). *See* Part II.B.3 below. For simplicity, we refer to the ENP stock except when discussing the IWC's stock structure hypotheses.

[5] The Western Gray Whale population is equivalent to the Western Breeding Stock, as described in Dr. Bickham's Declaration. NMFS refers to the WGW as the Western North Pacific (WNP) stock in its Stock Assessment Reports (SARs). In the IWC's most plausible stock structure hypotheses, the historic WGW (if it is not extinct) migrates and breeds solely in waters off Asia, while in NMFS's SARs, at least some WNP whales migrate from feeding grounds

A third group of whales that is not a stock, the Pacific Coast Feeding Group (PCFG), is relevant to this proceeding because it too is relatively small in size (approximately 232 animals), and migrates in the eastern North Pacific Ocean to feeding areas from northern California to northern British Columbia rather than the Arctic feeding grounds of the larger ENP population. Weller Decl. ¶ 16; NMFS Ex. 3-101 at 1. (Calambokidis et al. (2019)).

1. Eastern North Pacific Gray Whales.

The ENP stock migrates from wintering grounds off Baja California along the continental shelf of western North America to summer feeding areas, which for most ENP whales lie in the Bering, Chukchi, and Beaufort Seas. Bickham Decl. at 6; Weller Decl. ¶ 12; *see generally* NMFS Ex. 1-7 at 5-13. In the most recent abundance estimate, which included surveys through the 2015-2016 migration, the ENP stock numbered 26,960 with 95% confidence that the true value lies between 24,420 to 29,830 animals. Weller Decl. ¶ 25; NMFS Ex. 2-12 at 4; NMFS Ex. 1-7 at 15 (Table 1). NMFS calculated a potential biological removal (PBR) for the stock of 801 whales per year. Bettridge 2nd Decl. ¶ 5. PBR 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 [OSP]." 16 U.S.C. § 1362(20); Tr. V1 (Bettridge) at 93:6-13. The proposed Makah hunt would involve striking at most 2.5 whales per year on average, less than one half of one percent of PBR.

The ENP stock's estimated abundance recently achieved its highest level. Weller Decl. ¶ 22; NMFS Ex. 2-12 at 4 (Figure 2). The overall increase in the ENP gray whale population has occurred while native communities on the Chukotka Peninsula of Russia have hunted over one hundred gray whales per year since the late 1990s. Scordino Decl. at 23.

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in the western North Pacific to wintering grounds in the eastern North Pacific. *See* Part II.B.3 below. For simplicity, we refer to the WNP stock except when discussing the IWC's stock structure hypotheses.

The ENP gray whale population is currently experiencing an "unusual mortality event," or UME. Brandon UME Decl. at 3. The NMFS UME Response Program was initiated in 1991 to help ascertain, *inter alia*, the cause of such events. NMFS Ex. 2-14; Bettridge 3rd Decl. ¶ 4. Since 1991 there have been an average of 2.4 UMEs per year affecting a variety of marine mammal stocks. Brandon UME Decl. at 3. Mortality events are expected to be more common when a species approaches the carrying capacity of the environment because it renders that species more sensitive to environmental fluctuations. *See* Tr. V2 (Brandon) at 215:14 – 216:11; Brandon UME Decl. at 10-11. In this manner a UME can sometimes serve as an expected correction in a population that is at the limit of what the environment can support. *Id.*

A previous gray whale UME occurred in the 1999-2000. In that UME, it was estimated the population fell from around 21,000 to around 16,000 animals. Tr. V1 (Yates) at 21: 8-10. The cause was not determined. *Id.* at 21: 16-17. The population quickly recovered to its level directly preceding the UME and grew to approximately 27,000 by 2016. *Id.* at 22: 2-4; Brandon UME Decl. at 9. Notably, PCFG abundance increased rapidly during the 1999-2000 UME, and there is no indication it impacted WNP whales. *Id.* at 6; Weller 3rd Decl. ¶¶ 8-9.

No cause has been determined for the current UME, but it is consistent with wildlife managers' expectation for a stock such as the ENP that is at or near carrying capacity. Brandon UME Decl. at 10-11. Counts of stranded whales in 2019 are between those recorded in 1999 and 2000, which suggests a UME of comparable size. *Id.* at 3.

2. The Pacific Coast Feeding Group.

Since the mid-1990s when the Makah Tribe sought to resume active whaling, substantial research has been conducted on gray whales that spend the summer and fall feeding off the west coast of the contiguous United States and Canada. Scordino Decl. at 30, 32. The Tribe has been

at the center of this research with a focus on the waters off the northern coast of Washington. This research has led to vast improvements in knowledge about PCFG whales, especially related to feeding and movement behaviors and population dynamics. *Id.* at 63-64.

PCFG whales are not a static group; the continual immigration of whales into and emigration of whales out of the group has led it to be compared to a "leaky bucket." PCFG whales also exhibit a high degree of variability in their distribution within – and sometimes to the north of – the defined PCFG range. *Id.* at 53-57; Tr. V4 at 9:11-21. Numerous genetic studies have been conducted to investigate whether PCFG whales comprise a separate population from the vast majority of ENP gray whales that migrate to northern feeding grounds. Small but statistically significant differences in mitochondrial DNA suggest some PCFG whales recruit into the feeding aggregation due to matrilineal fidelity, *i.e.*, PCFG mothers bring their calves to the PCFG range and they return in subsequent years. Bickham Decl. at 19-22. However, the lack of nuclear DNA differences indicates PCFG whales breed indiscriminately with both PCFG and ENP whales and do not form a separate genetic population. *Id.* at 20; Bettridge Decl. ¶ 16.

In 2012, NMFS convened a task force of agency marine mammal scientists to evaluate several lines of evidence regarding gray whale stock structure. Weller Decl. ¶¶ 7, 17; Bettridge Decl. ¶ 15; Scordino Decl. at 74-77.[6] With respect to the PCFG, the task force concluded the best available science contained "substantial uncertainty" and the PCFG's stock status "remained unresolved." Weller Decl. ¶ 19. Based on this, NMFS continued to recognize the PCFG as a feeding aggregation that is part of the larger ENP stock. *Id.* ¶ 20; Bettridge Decl. ¶¶ 19-20.

3. Western North Pacific Gray Whales

[6] Mr. Scordino's testimony provides a detailed summary of the 2012 NMFS gray whale task force, including the questions and responses by participating scientists and how they relate to the criteria for identifying a population stock under the MMPA and NMFS's guidelines.

The western population of gray whales historically migrated along the coasts of Korea, China, and Japan to and from summer feeding areas in the Sea of Okhotsk. Bickham Decl. at 8; Weller Decl. ¶ 33. By 1966, the western population was considered by some to be extinct. Bickham Decl. at 8; Scordino Decl. at 65. However, in the 1970s and 1980s, observations of gray whales in the Sea of Okhotsk gave rise to a presumption that they were a remnant of the historic western population, though some thought they could be migrants from the eastern North Pacific. Bickham Decl. at 8; Scordino Decl. at 65 (discussing Ex. M-0022, Blohkin et al. 1985).

Satellite tagging, genetic analyses, and other studies have led to a scientific debate on the status of western gray whales, raising questions as to the continued existence of the historic western gray whale, the possibility that ENP gray whales had expanded their feeding range to include Sakhalin Island, and a hybrid theory that the gray whales at Sakhalin were a mixed stock aggregation of both groups. Scordino Decl. at 68; *see also id.* at 66 (describing uncertainty in the identity of "Sakhalin whales"). More recent analyses have utilized genomics, advances in sequencing methods, and bioinformatics. Bickham Decl. at 16. Geneticist Dr. John Bickham testified that the weight of the evidence indicates that Sakhalin whales are comprised of two groups, both of which are likely to have been derived from the eastern gray whale population. *Id.* at 19.

In response to the new information, the IWC Scientific Committee convened five workshops between 2014 and 2018 known collectively as the Rangewide Review. Bickham Decl. at 22-23. The Rangewide Review developed two high-priority hypotheses considered the most plausible. *Id.* Under both hypotheses, whales that migrate from Sakhalin to North America

and have the potential to be encountered in the Tribe's hunt are western feeding group whales, *i.e.* they are eastern gray whales rather than the historic WGW. *Id.*at 26.[7]

III. PROCEDURAL HISTORY

A. The Tribe's Waiver Request and NMFS's Review Process (2005-2019).

Makah submitted a waiver request to NMFS on February 14, 2005. 70 Fed. Reg. 10359 (Mar. 3, 2005); ALJ Ex. 006 at App. A. The Tribe requested a permanent waiver to allow a total take of up to 20 gray whales in any five-year period with a maximum of five whales in any calendar year. *Id.* NMFS formally initiated the EIS scoping process regarding the Tribe's waiver request in August 2005, indicating that the Tribe's effort to resume subsistence whaling was based on its treaty right and stating that the treaty "is the primary instrument defining the legal relationship between the United States Government and the Makah." 70 Fed. Reg. 49911, 49912 (Aug. 25, 2005). Various stages of NEPA review, including the preparation of two draft EISs, occurred through 2015. *See* 80 Fed. Reg. 13373 (March 13, 2015).

B. NMFS's Consultation with the Marine Mammal Commission.

NMFS consulted on multiple occasions with the Marine Mammal Commission (MMC or Commission) in developing the waiver and regulations. NMFS Ex. 1-13 at 1-2; NMFS Ex. 1-10; NMFS Ex. 1-14. The Commission recommended that the waiver "avoid, to the maximum extent practicable, the accidental taking of gray whales form the endangered [WNP] stock, and secondarily, [] avoid taking that could disadvantage the [PCFG] regardless of whether it is considered a stock." NMFS Ex. 1-08 at 1; *see also* NMFS Ex. 1-15 at 1. It identified the "design of an odd/even year hunting pattern [as the] key to both controlling the harvest of PCFG

[7] Only one of the hypotheses involved historic WGW migrating to North America. Bickham Decl. at 26. Dr. Bickham and Mr. Scordino explained why this hypothesis is the least plausible of those developed by the Rangewide Review. *Id.*; Scordino Decl. at 70.

whales and minimizing any take of WNP whales," noted that there was "some trade-off between the two goals," and concluded that "the proposed rule strikes an appropriate balance between the goals of protecting WNP and PCFG whales." NMFS Ex. 1-8 at 1-2. The "overall impression" expressed by the Commission was that "the draft regulations are based on the best available science concerning gray whales and are appropriately precautionary." NMFS Ex. 1-8 at 1. The MMC "believe[d] that [NMFS's] draft documents lay out a *prima facie* case that the requirements for granting a waiver under the MMPA have been met" and "recommend[ed] that NMFS proceed with issuing a proposed rule and scheduling an administrative hearing . . . ." *Id.*

C. IWC's Scientific Review and Gray Whale Catch Limits.

1. Aboriginal Subsistence Whaling Catch Limits for ENP Gray Whales.

The IWC regulates the harvest of ENP gray whales and other large whales by Native communities as "aboriginal subsistence whaling" (ASW). Weller Decl. ¶ 6; *see also* ALJ Ex. 006 at 1-28 to 1-35. An ASW "catch limit" is obtained by a member government by presenting a needs statement on the community's behalf and requesting a catch limit for the relevant whale stock. Weller Decl. ¶ 6.[8]

In 1997, the IWC approved a five-year (1998-2002) catch limit for ENP gray whales based on a joint request by the United States (on behalf of Makah) and the Russian Federation (on behalf of Chukotka Natives). Arnold Decl. ¶ 14; Tillman Rebuttal Decl. ¶¶ 11-12; ALJ Ex. 006 at 1-31 to 1-33. The IWC approved similar gray whale catch limits for 2003-2007 and 2008-2012, and a six-year catch limit for 2013-2018. Tillman Rebuttal Decl. ¶ 14. Thus, for a period of 21 years, Makahs and Chukotkans shared a catch limit providing for an average total harvest of 124 whales (120 for the Chukotkans and 4 for the Makahs) and an annual maximum harvest

[8] Examples of Makah Needs Statements submitted to IWC by the United States are available at ALJ Ex. 006 at App. A (App. A, 2002 Needs Statement) and Reid Decl. Doc. No. 55 at PDF 2076-2200 (Renker, 2018 Needs Statement).

of 140 whales (135 for the Chukotkans and 5 for the Makahs). Weller 2nd Decl. ¶ 12. Under bilateral agreements between the United States and Russia, the United States has assigned gray whales not used by the Makahs to the Chukotkans. Weller Decl. ¶ 9.

Except for the most recent block period, the Chukotkans have harvested nearly all the gray whales available under the shared catch limit. *See* NMFS Ex. 3-87; Scordino Cross Ex. SS-02. Over the 21 years comprising four block catch limits, Chukotkans harvested 2,591 whales, an average of 123.4 whales per year. *Id.* Including the two whales struck by Makah in 1999 and 2007, only 11 whales were not used from the aggregate catch limit over these years. *Id.*

At its 2018 biennial meeting, the IWC approved all requested ASW catch limits for a period of seven years. Weller Decl ¶ 9; NMFS Ex. 3-3 at 10 (IWC Schedule ¶ 13). Under the new Schedule amendment and 2018 bilateral agreement, up to five whales are available to Makahs and 135 to Chukotkans per year. NMFS Ex. 3-4. ENP gray whales not harvested by the Makah Tribe will be transferred to the Chukotkans, who will kill all (or nearly all) of them.[9]

2. The Scientific Committee's Review of the Proposed Hunt (2010-2018).

The IWC Scientific Committee is comprised of the world's leading experts in large whale population biology, ecology, genetics, and population dynamics modeling, who provide management advice and make recommendations to the IWC. Brandon Decl. at 23-24, 44; Tr. V2 (Brandon) at 205:23-25. Dr. Michael Tillman, who has more than 40 years of experience at IWC and is a former chair of the Scientific Committee, testified that the Committee is "highly regarded [and] considered to be the premier body for whale science…in the world." Tr. V5 at 232:23 – 233:1; *see also* Tr. V4 (Schubert) at 43:11-12.

[9] One change in 2018 was to add a "carry forward" provision, which allows unused strikes to be used in future years, up to a certain limit. NMFS Ex. 3-3 at 10. As a result, the full number of strikes is more likely to be utilized.

The IWC Scientific Committee uses population dynamics models and computer simulations to evaluate proposed ASW hunt plans. Brandon Decl. at 16-19; Tr. V2 at 207:11-13. One ASW management objective is to "maintain the status of 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." Brandon Decl. at 13. The abundance level resulting in the "highest" net recruitment is a key reference level under the IWC's conservation objectives, which the IWC refers to as the "maximum sustainable yield level" (MSYL). *Id.* at 13-14. Under identical assumptions regarding the mathematics of population dynamics, MSYL is equivalent to the lower bound of the range that satisfies the MMPA's OSP management objective. *See* 50 C.F.R. § 216.3. The MMPA's and IWC's conservation objectives are, therefore, effectively identical in this respect. Brandon Decl. at 14; Tr. V2 at 208:3-6.[10]

The IWC's Scientific Committee conducts periodic "Implementation Reviews" to consider the status of gray whale stocks and any new science affecting ASW hunts. *See* Tr. V2 (Weller) at 95:7-15; Brandon Decl. at 17. From 2010 to 2013, an Implementation Review was convened to address the impact of the Makahs' 2005 hunt proposal on the PCFG. Brandon Decl. at 23-24. This review evaluated impacts to the PCFG as a management unit using a variety of reasonable and unlikely variables in 119 trials. *Id.* The Scientific Committee concluded that the proposed hunt plan met the IWC's conservation objectives for ASW. *Id.* at 26-27.

As discussed in Part II.B.3 above, the Scientific Committee convened five workshops comprising the Rangewide Review of gray whale stock structure. In 2018, NMFS presented the current Makah hunt proposal to the fifth workshop, whose participants agreed upon a final set of operating model specifications (*e.g.*, stock structure hypotheses) and multiple trials to evaluate

[10] Dr. Brandon is a member of the IWC Scientific Committee. Brandon Decl. at 6. His written direct and oral testimony on this point was not contested by any party.

the new hunt plan. *Id.* at 35. As with the 2010-2013 Implementation Review, the participants developed trials that addressed key scientific uncertainties relevant to conservation risk.[11] *Id.* at 39-40; *see generally* Tr. V2 (Brandon) at 210-216.

In the final analysis of the current hunt plan, the IWC's conservation objectives were met for all three management units (ENP, PCFG, and WNP) in 102 of 106 trials, which also demonstrates that the proposed hunt satisfied the OSP objective of the MMPA for all three groups in these trials. *Id.* at 43-44. The four trials in which the objectives were not met included highly unlikely scenarios such as 20 times the observed level of cryptic mortality for WNP whales. *Id.* at 43. The high degree of success indicates an extremely conservative hunt. *Id.* at 44; *see also* Tr. V2 (Brandon) at 214: 6-14 (Makah hunt among the most conservative the Committee has ever evaluated); NMFS Ex. 3-39 at 35 (outline of Makah hunt trials).

D. NMFS's Proposed Waiver and Regulations.

On April 5, 2019, NMFS published a proposal to waive the MMPA's take moratorium and issue regulations that would govern the Tribe's hunt and its use of edible and non-edible products obtained from landed whales. 84 Fed. Reg. 13604 (Apr. 5, 2019). The notice explained the regulations in detail, and the Tribe's summary is in its Proposed Findings of Fact and will not be repeated here. *See* Proposed Findings of Fact 245-283; *see also* NMFS Ex. 1-7 at App. 1.

The Tribe objects to one aspect of the proposed regulations. As Mr. Arnold testified, the proposed regulations regarding sharing and consuming edible whale products outside the Makah Reservation with non-members, §§ 216.113(b)(1)(i)-(ii), 216.115(a)(14), 216.115(b)(2), would make it very difficult, if not impossible, for him to share whale products with his non-member wife in their off-reservation apartment and for his son to provide whale meat and blubber for his

[11] Key factors included cryptic mortality (whales dying from human causes but not discovered), annual immigration into the PCFG, future UMEs, and extreme environmental stressors representing outcomes of climate change.

entire family in their Everett-area home because his son's wife is also not an enrolled Makah. Arnold Decl. ¶ 20. These restrictions are contrary to core Makah values of hunting whales to meet subsistence needs by providing for families and sharing food with guests. *Id.*; Tr. V3 (Arnold) at 9:23 – 10:22. Accordingly, the Tribe supports NMFS's October 28, 2019, motion to modify the proposed regulations. *See* Part V.G below.

E. Proceedings Regarding the On-the-Record Hearing.

Along with the proposed waiver and regulations, NMFS published a notice of hearing on April 5, 2019.[12] A thorough on-the-record hearing was conducted between November 14 and November 21, 2019, with direct testimony from 17 witnesses and cross examination of all witnesses except the four Makah tribal members, the Tribe's expert historian, and Margaret Owens. *See* Tr. V1 – V6; *see also* Notice re Witnesses and Timekeepers for Hrg., Nov. 4, 2019. On January 29, 2020, NMFS published a notice of availability of the final transcript of the hearing and a request for comments by March 16, 2020. 85 Fed. Reg. 5196 (Jan. 29, 2020).

IV. LEGAL FRAMEWORK

A. Treaty of Neah Bay.

Article 4 of the Treaty of Neah Bay provides 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 . . . ." 12 Stat. 939 (Jan. 31, 1855) (emphasis added). The treaty is binding federal law and under Article 6 of the United States Constitution has the same legal status as any federal statute.

The treaty whaling right remains valid federal law because Congress has never abrogated it. In *Anderson v. Evans*, the Ninth Circuit declined to address the issue whether the treaty right

[12] A more detailed chronicle of the NGO Parties' various efforts (some successful) to delay the hearing is set forth in the Tribe's Proposed Findings of Fact.

had been abrogated but stated the Tribe could urge consideration of the treaty right in NMFS's review of a waiver request:

> Of course, in holding that the MMPA applies to the Tribe, we need not and do not decide whether the Tribe's whaling rights have been abrogated by the MMPA.[26] We simply hold that the Tribe, *to pursue any treaty rights for whaling*, must comply with the process prescribed in the MMPA for authorizing a "take" because it is the procedure that ensures the Tribe's whaling will not frustrate the conservation goals of the MMPA.
>
> [26] Having determined that the procedures of the MMPA apply to the Tribe, in light of the conservation principle and the 'in common with' language of the treaty, we need not resolve the abrogation issue presented by the plaintiffs: The NMFS might authorize prescribed whaling to proceed under the MMPA, albeit with conditions designed to ensure the perpetuation of the resident whale population. *Unlike 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 submitted by the Tribe under the MMPA*.

371 F.3d 475, 501 & n.26 (9th Cir. 2004) (emphasis added). Thus, while the court required the Tribe to obtain a waiver and permit under the MMPA "to pursue any treaty rights for whaling," it expressly authorized the Tribe to advocate for consideration of the treaty right in NMFS's review of its waiver request.

NMFS's review of and decision on the Tribe's waiver request implements two federal laws of equal legal standing under the Constitution – the Treaty of Neah Bay and the MMPA. *See* ALJ Ex. 006 at 1-27 (2015 Draft EIS stating NMFS's purpose "is to implement the laws and treaties that apply to the Tribe's request, including the Treaty of Neah Bay [and the] MMPA"). Where two legally valid federal laws are implicated and "an apparent conflict exists between [them], then the courts must strive to harmonize the two laws, giving effect to both laws if possible." *Ass'n of Am. R.Rs. v. S. Coast Air Quality Mgmt. Dist.*, 622 F.3d 1094, 1097 (9th Cir. 2010). This requirement was recently reaffirmed by the Ninth Circuit in a case involving treaty rights. *See Swinomish Indian Tribal Cmty. v. BNSF Ry. Co.*, 2020 U.S. App. LEXIS 6787, *32-33, __ F.3d __ (No. 18-35704 9th Cir. 2020) (summarizing several cases for the rule that "[t]o

the extent two federal laws appear to conflict, we attempt to harmonize them"). Here, the obligation to give effect to the treaty and the MMPA rests on NMFS as it reviews and responds to the Tribe's waiver request. To do so, the agency must have an adequate record – developed in this proceeding – that addresses the nature of the treaty right, the Tribe's understanding of that right, and the potential impact of the regulations on the Tribe's ability to exercise its right.

A central principle in interpreting and applying Indian treaty rights is that the treaty must be construed "'not according to the technical meaning of its words to learned lawyers, but in the sense in which they would naturally be understood by the Indians.'" *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658, 676 (1979) (quoting *Jones v. Meehan,* 175 U.S. 1, 11 (1899)). The importance of courts' and other tribunals' fidelity to the Indians' understanding of their treaty rights has been repeatedly emphasized by the United States Supreme Court. *See, e.g., Minnesota v. Mille Lacs Band of Chippewa Indians*, 526 U.S. 172, 196 (1999); *Wash. State Dep't of Licensing v. Cougar Den, Inc.*, 139 S. Ct. 1000, 1011 (2019) ("language of the treaty should be understood as bearing the meaning that the [tribe] understood it to have in 1855"); *Herrera v. Wyoming*, 139 S. Ct. 1686, 1699 (2019) (same).

B. Marine Mammal Protection Act.

The MMPA imposes a general moratorium on the taking of marine mammals, defined as "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal." 16 U.S.C. § 1362(13); 16 U.S.C. § 1371(a). Although an exemption from the moratorium allows Alaska Natives to conduct subsistence harvests, including for the endangered bowhead whale, 16 U.S.C. § 1371(b); Tr. V1 (Yates) at 37:15-38:3, the Makah Tribe must comply with the MMPA's waiver and permit requirements before it can hunt an abundant population of gray whales under its express treaty whaling right. *Anderson*, 471 F.3d at 501-02.

1. Requirements for a Waiver of the Take Moratorium.

The current avenue for the Tribe to resume its treaty hunt of gray whales is through the MMPA's waiver provision in 16 U.S.C. § 1371(a)(3)(A). The Secretary of Commerce (acting through NMFS) is:

> authorized and directed, from time to time, *having due regard to the distribution, abundance, breeding habits, and times and lines of migratory movements of such marine mammals,* to determine when, to what extent, if at all, and by what means, it is compatible with [the MMPA] to waive the requirements of [Section 1371] so as to allow taking . . . of any marine mammal . . . and to adopt suitable regulations, issue permits, and make determinations [under specified sections of the MMPA].

16 U.S.C. § 1371(a)(3)(A) (emphasis added). A waiver must be based on the "best scientific evidence available"[13] and made "in consultation with the Marine Mammal Commission." *Id.* Further, the Secretary "must be assured that the taking of such marine mammal is in accord with the sound principles of resource protection and conservation as provided in the purposes and policies of [the MMPA]." *Id.*

The MMPA's purposes and policies are articulated in 16 U.S.C. § 1361, and include: 1) 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;" 2) "the primary objective of [marine mammal] management should be to maintain the health and stability of the marine ecosystem;" and 3) "to obtain an optimum sustainable population keeping in mind the carrying capacity of the environment." 16 U.S.C. § 1361(2), (6). Reflecting the importance of achieving or maintaining a marine mammal stock's OSP, this purpose is expressly identified twice. *See id.* The term OSP "means, with respect to any population stock, the number of animals which will result in the maximum productivity of the

[13] Part IV.B.3 below explains the "best scientific evidence available" standard under the MMPA.

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).[14]

2. Requirements for Regulations Governing the Take of Marine Mammals.

Regulations to implement a waiver of the take moratorium share many of the same, or similar, requirements as the waiver itself. They must be based on the best scientific evidence available, prescribed in consultation with the MMC, and consistent with the purposes and policies set forth in Section 1361. 16 U.S.C. § 1373(a). In addition, they must "insure that such taking will not be to the disadvantage of those species and population stocks." *Id.* NMFS has interpreted the term "disadvantage," which is not defined in the MMPA, in relation to a stock's OSP level. Yates Decl. ¶ 56 (citing 45 Fed. Reg. 72178, 72185 (Oct. 31, 1980)).

In prescribing regulations, the Secretary "shall give full consideration to all factors which may affect the extent to which such animals may be taken." 16 U.S.C. § 1373(b). These factors include, but are not limited to the effect of the proposed regulations on:

(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;[15] and
(5) the economic and technological feasibility of implementation.

Id. The regulations may include restrictions on the number of animals that may be taken, the seasons in which take is authorized, and other limitations. *Id.* § 1373(c).

NMFS's proposed waiver and regulations are subject to "on the record" formal rulemaking. *Id.* § 1373(d). In addition, the Secretary must publish concurrently with (or before)

[14] NMFS's implementing regulations state that "[o]ptimum sustainable population is 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 to the population level that results in maximum net productivity. Maximum net productivity is 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 C.F.R. § 216.3.
[15] The proposed regulations do not affect fishery resources, so this factor is not addressed below in Part V.D.

the Federal Register notice announcing the proposed regulations statements regarding the marine mammal stock's abundance, the effect of the proposed regulations on the stock's OSP, and the evidence on which the regulations are based. *Id.* Any studies or recommendations, including those made by the MMC, that relate to the proposed regulations must also be published. *Id.*[16] Finally, NMFS is required to "periodically review" the regulations and may "modif[y them] from time to time in such manner as the Secretary deems consistent with and necessary to carry out the purposes of [the MMPA]." *Id.* § 1373(e).

3. The Best Scientific Evidence Available.

Because the proposed waiver and regulations must be based on the best scientific evidence available, it is important to understand what this standard requires – and what it does not. Both the MMPA and the Endangered Species Act (ESA), enacted just one year apart, must be implemented based on the best available science. 16 U.S.C. §§ 1371(a)(3)(A), 1373(a), 1533(b)(1)(A), (2) (ESA); 50 C.F.R. §§ 402.12(d), 402.14(d), (f), (g)(8) (ESA implementing regulations). "The obvious purpose" of this standard is to ensure that the statutes are "not … implemented haphazardly, on the basis of speculation or surmise." *Bennett v. Spear*, 520 U.S. 154, 176 (1997) (addressing best available science in the ESA context). In another ESA case, the Ninth Circuit explained that "[t]the best *available* data requirement merely prohibits an agency from disregarding available scientific evidence that is in some way better than the evidence it relies on." *San Luis & Delta-Mendota Water Auth. v. Jewell*, 747 F.3d 581, 602 (9th Cir. 2014) (internal quotations omitted). In other words, "where there is some additional superior information available," the agency must use it. *Id.*

[16] NMFS satisfied the obligation to publish such statements, studies, and recommendations in the Federal Register notice announcing the proposed waiver and regulations. *See* 84 Fed. Reg. at 13615-17.

However, the 'best available science' standard is necessarily limited to information that is available. As the *San Luis* court elaborated, "where the information is not readily available, we cannot insist on perfection: '[T]he 'best scientific . . . data available,' does not mean 'the best scientific data possible.'" *Id.* (quoting *Building Indus. Ass'n v. Norton*, 247 F.3d 1241, 1246 (D.C. Cir. 2001)) (modifications in original). The court explained that it "is not [a court's] job to task [an agency] with filling the gaps in the scientific evidence," *id.* at 633, because an agency "'has no obligation to conduct independent studies,'" *id*. at 618 (quoting *Sw Ctr. for Biological Diversity v. Babbitt,* 215 F.3d 58, 60 (D.C. Cir. 2000)). Likewise, "uncertainty" is not fatal to proper application of 'best available science.' *Ariz. Cattle Growers' Ass'n v. Salazar*, 606 F.3d 1160, 1164 (9th Cir. 2010). In sum, "an analysis that uses all scientific data currently available is a sound one." *Inland Empire Pub. Lands Council v. U.S. Forest Serv.*, 88 F.3d 754, 762 (9th Cir. 1996).

Caselaw applying the 'best available science' standard under the MMPA is more limited, but the principle is the same. For example, courts have concluded that an agency fails to meet the standard when it "simply disregard[s]" data in the record or previously promulgated by the agency. *Amer. Tunaboat Ass'n v. Baldridge*, 738 F.2d 1013, 1017 (9th Cir. 1984). Similarly, NMFS's action was set aside when the agency disregarded available evidence that it previously "treated . . . as the best scientific evidence available." *Conservation Council for Hawaii v. Nat'l Marine Fisheries Serv.*, 97 F. Supp. 3d 1210, 1228 (D. Ha. 2015). In contrast, agencies meet the standard "by considering all the data" they receive. *Friends of Endangered Species, Inc. v. Jantzen*, 760 F.2d 976, 985 (9th Cir. 1985) (applying the ESA).

4. The Precautionary Principle Is Inherent In, Not Additive To, the MMPA.

The MMPA provides extraordinary protections to marine mammals. All take is prohibited – regardless of a stock's abundance – unless a specific exemption or exception applies, and obtaining a waiver requires the arduous process of formal rulemaking. A waiver must be consistent with the MMPA's goals of protecting marine mammals as significant functioning elements of their ecosystem and achieving or maintaining a stock's optimum population. The Tribe's protracted experience seeking a waiver to conduct a treaty hunt of a small number of animals from the ENP gray whale stock – 25 years after delisting under the ESA – and the highly restrictive provisions in the proposed regulations is indicative of the complex procedures and conservative standards embedded in the MMPA.

The NGO Parties have asserted that, in addition to its already conservative provisions, the MMPA requires application of a 'precautionary principle,' particularly where there is uncertainty about potential impacts or future circumstances. *See, e.g.*, Sommermeyer Decl. ¶ 58 (citing statement of Sen. Packwood, H.R. Rep. No. 92-707, at 24 (1971); 118 CONG. REC. S15680 (daily Ed. Oct. 4, 1971)); *see also* Schubert Decl. ¶ 41; Schubert Rebuttal Decl. ¶¶ 12; Tr. V1 (Yates) at 67:5-11. As the legislative history makes clear, however, that principle is intrinsic to the MMPA rather than existing separate from the statute. Senator Packwood's statement explains this in no uncertain terms: "As far as could be done, we have endeavored to build such a conservative bias *into the legislation here presented*." H.R. Rep. No. 92-707 at 24 (emphasis added). A cosponsor of the legislation added, "it is not your committee's intention that [an agency] should establish arbitrar[ily] low or high levels of permissible taking solely from a fear of the unknown expressed on the part of the regulatory agency or the general public." 118 CONG. REC. H7687 (daily Ed. March 9, 1972) (statement of Rep. Pelly). In short, the provisions of the MMPA constitute a conservative, indeed precautionary, approach to the

regulation of marine mammal taking, and simple adherence to the requirements of the law achieves Congress's intent.

C. Administrative Procedure Act.

NMFS's approval of a waiver of the take moratorium under the MMPA requires formal rulemaking under the Administrative Procedure Act (APA). 16 U.S.C. § 1373(d); 5 U.S.C. § 553. Formal rulemaking occurs pursuant to 5 U.S.C. §§ 556-57 and for purposes of the MMPA must follow NMFS's regulations set forth in 50 C.F.R. Part 228. Following publication of notices of hearing for formal rulemaking and proposed regulations, the NMFS Assistant Administrator appoints a presiding officer. 50 C.F.R. §§ 228.4, 228.6; 5 U.S.C. § 3105. The presiding officer accepts evidence, presides over a hearing, rules on motions, and ultimately makes a recommended decision. 50 C.F.R. §§ 228.6-228.20.

The main statutory requirement with respect to due process in formal rulemaking is that "[a] party is entitled to present his case or defense by oral or documentary evidence, to submit rebuttal evidence, and to conduct such cross-examination as may be required for a full and true disclosure of the facts." 5 U.S.C. § 556(d). In formal rulemaking, due process is provided by adherence to the requirements of the APA and NMFS's hearing regulations. The overarching requirement is to provide "some mechanism for interested parties to introduce adverse evidence and criticize evidence introduced by others." *Mobil Oil Corp. v. Fed. Power Comm'n*, 483 F.2d 1238, 1258 (D.C. Cir. 1973) (emphasis omitted); *see also Cent. Freight Lines, Inc. v. United States*, 669 F.2d 1063, 1068 (5th Cir. 1982). These APA due process requirements are incorporated into NMFS's hearing regulations. 50 C.F.R. §§ 228.5, 228.17, 228.18 (opportunity to be a party, submit testimony, and cross examine adverse witnesses). An additional element of

due process in formal rulemaking is the prohibition of *ex parte* communications with the presiding officer or NMFS. *See* 5 U.S.C. §§ 551(14), 557(d)(1)(A); 50 C.F.R. § 228.10.

NMFS is the proponent of the draft regulations and has the burden of proof. 5 U.S.C. § 556(d). Following submission of evidence and post-hearing briefs, *see* 5 U.S.C. § 557(c), the presiding officer must make a recommended decision which includes a history of the proceedings, findings of fact, and conclusions of law. 50 C.F.R. § 228.20(a). The APA requires a ruling on each proposed finding and conclusion presented by the parties. 5 U.S.C. § 557(c)(3). The presiding officer's recommended decision must be based upon "consideration of the whole record or those parts thereof cited by a party and supported by and in accordance with the reliable, probative, and substantial evidence." 5 U.S.C. § 556(d); *see also* 28 C.F.R. § 228.20(a). This provision establishes a preponderance-of-the-evidence standard of proof. *Steadman v. SEC*, 450 U.S. 91, 100-01 (1981).

V. ARGUMENT

A. The Tribe's Treaty Right Is Central to This Proceeding.

The Tribe's written and oral testimony established that whales and whaling (including the use of whale products) are central to the Makah Tribe's culture, subsistence and identity, and that this fundamental importance has persisted despite periods of time when the Tribe could not engage in active hunting for reasons outside its control. The Tribe's testimony also made clear that the whaling right secured in the treaty requires the ability to hunt whales and cannot be replaced by non-hunting activities like whale watching. As the Tribe has consistently explained in this proceeding, Makah's desire to exercise its treaty right by resuming active whaling is the core reason it requested a waiver more than 15 years ago. Thus, the Tribe's testimony about its treaty right is relevant – and central – to this proceeding and NMFS's ultimate decision on the waiver and regulations. *See* Tribe's Comb. Resp. to Motions to Exclude Test. and Issues for

Hrg., Aug. 19, 2019) at 3-11 (Tribe's response to Sea Shepherd's motion to exclude the Tribe's treaty and whaling testimony).

Sea Shepherd seeks to advance a theory that non-consumptive use of gray whales under supposed "co-tenancy rights" somehow nullifies the Tribe's treaty right to hunt whales. *See, e.g.,* SS Pre-Hearing Br., Nov. 7, 2019, at 10-14; SS Resp. to NMFS's Mot. to Limit Rebuttal Issues and Test, Aug. 26, 2019. This argument is based on a fundamental misreading of the *Anderson* court's interpretation of the "in common" treaty language and is contrary to well-established law governing analogous tribal treaty rights.

First, the *Anderson* court held that "conservation values" related to marine mammals, including non-consumptive uses, would be adequately protected by requiring the Tribe to follow the waiver and permit process under the MMPA. *See* 371 F.3d at 500-01. It did not hold, as Sea Shepherd contends, that "co-tenancy rights" of citizens to non-consumptively use gray whales for scientific research and whale watching "must be balanced" against the Tribe's right to hunt whales under its treaty. SS Resp. to NMFS's Mot. To Limit Rebuttal Issues and Test., Aug. 26, 2019, at 4-5. In the block quotes cited by Sea Shepherd, the court explained why it rejected the Tribe's treaty-based argument that it had the "exclusive ability to hunt whales free from the regulatory scheme of the MMPA." *Anderson*, 371 F.3d at 500. As the court explained, the MMPA waiver and permit process was the process that would determine the availability of gray whales for harvest. *Id.* at 501. According to the court, non-consumptive uses (specifically including whale watching and scientific study) would be protected by the MMPA's "procedural safeguards and conservation principles," which "properly allow the taking of marine mammals only when it will not diminish the sustainability and optimum level of the resource for all citizens." *Id.* Because non-consumptive uses are already protected by the procedural and

substantive protections of the MMPA, they do not provide a separate or additional ground for limiting the exercise of the Tribe's treaty right under the rubric of "co-tenancy rights."

Second, Sea Shepherd's "co-tenancy rights" argument distorts the meaning of the treaty and negates the Tribe's express right of whaling. Under *Anderson*, once it is determined under the MMPA that whales are available for harvest, the Treaty secures the Tribe's ability to take whales in common with all citizens. However, under Sea Shepard's interpretation, rather than providing for the sharing of the resource under the "in common with" language, the entire resource would be allocated for non-consumptive uses, depriving the Tribe of the right to take a single whale. This interpretation cannot be squared with the plain language of the treaty, the applicable canons of construction, or more than a century of Supreme Court rulings addressing the parallel right of taking fish found in the same clause of the treaty. *See*, *e.g.*, *Fishing Vessel*, 443 U.S. at 676-77 (discussing applicable rules of construction and rejecting as "inconceivable" an interpretation that would deprive the Indians of any meaningful harvest opportunity); *id.* at 679-85 (discussing a century of Supreme Court precedent "plac[ing] a relatively broad gloss on the Indians' fishing rights" and consistently rejecting arguments that would deprive the Indians of meaningful harvest opportunities).

A fundamental principle of treaty construction is that treaties should be interpreted and applied as the Indians understood them. *See* Part IV.A above. As Greig Arnold, Daniel Greene, Sr., Maria Pascua and Polly DeBari testified, whaling is central to the Tribe's culture, subsistence and identity, and the right their ancestors secured in the Treaty of Neah Bay is a right to hunt whales and utilize the products of those whales. Historian Dr. Joshua Reid testified in detail about the constellation of practices that are integral to the Tribe's exercise of its whaling rights, especially an active whale hunt. In describing the "in common" provision of the treaty,

Dr. Reid testified that it "would have meant something very precise" to the Makahs who insisted on reserving whaling rights in their treaty:

> As the highest-ranking authorities in the Cape Flattery villages, these individuals simply extended limited usufruct rights to Stevens's "Whites," much as they did to other Natives who sought to participate in these fisheries. For these chiefs and other owners of Makah fisheries, "fishing together" meant retaining Indigenous authority over these resources − the People of the Cape did not abdicate this power to the United States . . . . [The Makahs] would not have understood that by agreeing to the treaty (including its "in common with" language) they were yielding their authority over and right to take fish, whales, and seals to the "Whites" or anyone else, whether through management deference, regulation, interference, or other means.

Reid Decl. at 31.

Under Sea Shepherd's "co-tenancy" argument, the whale resource would not be shared but rather reserved entirely for non-consumptive uses, thereby precluding the Tribe from hunting any whales.[17] This interpretation of the treaty right contravenes the plain language of the Treaty, the Indians' understanding, and more than a century of Supreme Court precedent. Under *Anderson*, 371 F.3d at 501, the MMPA's waiver and permit process must be used to determine if whales are available for harvest but, if they are, the co-tenancy rights of non-Indians (if any) cannot be used to deprive the Tribe of a meaningful harvest opportunity.

B. The PCFG is Not a Population Stock under the MMPA.

Applying the best scientific evidence available, NMFS has determined – and the Tribe agrees – that the PCFG is not a population stock under the MMPA. NMFS's determination that the PCFG is part of the larger ENP stock of gray whales is supported by substantial evidence in the testimony presented by NMFS and the Tribe. Moreover, even though the PCFG is not a

[17] *See* Newell Rebuttal Decl. ¶¶ 12 (loss of "even one individual out of this data set would result in a loss of much valuable information"), 43 ("killing of even a single female could result in a multi-generational impact"), 46 ("loss of PCFG whales will also have grave consequences for scientific research"); *see also* Tr. V5 (Newell) at 86:7-8 ("I personally don't want to see any whales killed."), 86:15-18 (SS attorney statement that "Sea Shepherd of course doesn't condone the killing of whales . . . by anyone, anywhere, anytime").

stock, NMFS has included numerous provisions in the proposed regulations that specifically protect PCFG whales and ensure that gray whales will continue to be a significant functioning element of the ecosystem in the PCFG range. Nonetheless, the NGO Parties raised the issue of the PCFG's stock status in the proceeding and argued it should be conclusively determined before a waiver is approved. *E.g.*, Schubert Decl. ¶¶ 38-41; Schubert Rebuttal Decl. ¶¶ 18-50; Owens Decl. ¶¶ 8, 11-12.[18]

The MMPA defines a "population stock" or "stock" as "a group of marine mammals of the same species or smaller taxa in a common spatial arrangement, that interbreed when mature." 16 U.S.C. § 1362(11). In implementing the MMPA, NMFS has developed guidance documents for the agency's identification of marine mammal stocks, which are known as Guidelines for Assessing Marine Mammal Stocks (GAMMS). Scordino Decl. at 72; Bettridge Decl. ¶ 13. The current GAMMS recognizes a stock under the MMPA "as being a management unit that identifies a demographically independent biological population," and further states that "d]emographic 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)." Scordino Decl. at 73 (quoting Ex. M-0218, 2016 GAMMS).

NMFS's gray whale task force evaluated multiple lines of evidence relevant to North Pacific gray whale stock structure in 2012. Weller Decl. ¶¶ 7, 17; Bettridge Decl. ¶¶ 15-16; Scordino Decl. at 74-77. Through that process, which sought "to provide an objective, scientific evaluation of gray whale stock structure as defined under the MMPA and guided by the GAMMS," the task force concluded that there remained "a substantial level of uncertainty" in

[18] The parties agreed that this proceeding was not the appropriate forum for challenging stock designations under the MMPA, but that evidence in the scientific literature regarding the various populations, stocks, or groups of gray whales may be considered. Partial Stip. Re Scope of Issues to be Addressed at the Hrg., June 10, 2019, at 4.

the "evidence supporting demographic independence of the PCFG." Bettridge Decl. ¶¶ 15-16 (citing NMFS Ex. 3-2). Because there was insufficient evidence to designate the PCFG as a separate stock, NMFS's current stock designation correctly includes the PCFG as part of the ENP stock. *Id.* ¶ 16; *see* NMFS Ex. 2-12 (2018 SAR for the ENP stock).

NMFS's stock determination remains supported by the best scientific evidence available. For the PCFG to be a stock under the MMPA, the whales comprising the PCFG must "interbreed when mature." 16 U.S.C. § 1362(11). The genetic signal of interbreeding is found in nuclear DNA; if PCFG whales were primarily interbreeding within the group, there would be a statistically significant difference between the nuclear DNA markers for the PCFG and the larger ENP population. However, there is no such difference, likely due to the availability of breeding opportunities with the larger ENP population and the continual immigration and emigration of whales into and out of the PCFG. *See* Bickham Decl. at 6, 31-32; Scordino Decl. at 72; *see also id.* at 75-76 (summarizing NMFS task force responses regarding interbreeding of PCFG and ENP whales). Because the best scientific evidence available indicates that PCFG whales do not "interbreed" to any detectable extent, they do not satisfy the statutory definition of a stock.

The GAMMS guidelines cannot alter the statutory definition and thus cannot alter the conclusion that the PCFG is not a stock under the MMPA. However, the best available evidence indicates that the PCFG is also not a stock under the GAMMS guidelines. While there is evidence that PCFG whales demonstrate some level of maternally directed site fidelity to the PCFG range based on a small but statistically significant difference in mtDNA haplotype frequencies, and the precise ratio of internal (calves of PCFG mothers) and external (immigrants from the larger ENP stock) recruitment remains uncertain, there is substantial evidence that external recruitment is at least equal to if not greater than internal recruitment. This is not

surprising given the location of the PCFG range in the migration corridor of the larger ENP stock. Weller 2nd Decl ¶ 15; Scordino Decl. at 45-47; Tr. V3 (Scordino) at 53:20-22, 79:17-83:3, 93:12-96:22.

Mr. Scordino identified other evidence indicating a lack of demographic independence between PCFG and ENP whales. Scordino Decl. at 73-74; Tr. V3 (Scordino) at 53:4-55:2. The evidence included "continual immigration into the PCFG by non-PCFG whales," a sufficient level of external recruitment to offset low levels of human-caused mortality of PCFG whales, prey availability and foraging dynamics that could offset removals in the PCFG range, and the small degree of differentiation in mtDNA analyses. *Id*. Importantly, the IWC's Rangewide Review evaluated current scientific information on gray whale stock structure, and in every hypothesis it deemed plausible the PCFG was considered a feeding group of the larger Eastern Breeding Stock, *not* a separate stock. Scordino Decl. at 77-78; Bickham Decl. at 23. Collectively, this provides substantial evidence that the PCFG is a "feeding group" that is properly classified as part of the larger ENP stock. Bickham Decl. at 6, 19, 31-32.

Mr. Schubert testified that, in his opinion, NMFS should reconstitute the task force to evaluate new information on PCFG population dynamics. Schubert Rebuttal Decl. ¶ 37 (citing Calambokidis and Perez 2017a and Calambokidis and Perez 2017b, Exs. M-0057, M-0058). However, neither of the papers cited by Mr. Schubert undermines the substantial evidence supporting NMFS's determination that the PCFG is not a stock. The first Calambokidis and Perez paper (2017a) documented the occurrence of mothers and calves in the PCFG area over a 20-year period and found that 65% (59 of 91) of calves documented through 2014 were re-sighted in subsequent years. According to the authors, this "indicates a higher degree of internal recruitment to the PCFG than had been suggested by previous less complete data." Ex. M-0056

at 2. However, the 2017a paper does not address external recruitment or, critically, the relative levels of internal and external recruitment to the PCFG. *See id.*; Tr. V4 (Schubert) at 95:3-8 (unable to recall if the 2017a paper addressed external recruitment). Mr. Scordino testified that an increase in calves recruiting into the PCFG coincided with a spike in calf production in the ENP population as a whole. Scordino Decl. at 46-47. He also explained how Calambokidis et al. (2019) supports his conclusion that calves recruiting into the PCFG make up a relatively small percentage (59 of 203, or 29%) of documented PCFG recruits over a longer-term period (2002-2016). Tr. V4 at 94:7-97:18 (updating analysis from Scordino Decl. at 46-47).[19]

The second paper – Calambokidis and Perez (2017b) – likewise does not demonstrate that PCFG whales interbreed more with other PCFG whales than with non-PCFG whales. The paper reported that PCFG whales were observed migrating together (and with non-PCFG whales) which, the authors concluded, "increases the chances for breeding occurring within feeding area groupings even when animals migrate to a mixed wintering area." Ex. M-0057 at 2. However, to the extent that paper may demonstrate the potential for interbreeding among PCFG whales, it may also overstate that possibility due to selection bias. Scordino Decl. at 50. More importantly, Dr. Bickham testified that these observations "do[] not come close to providing convincing evidence that the PCFG is a breeding population," *i.e.*, a population stock as defined in the MMPA. Bickham Decl. at 22. This is in large part because the study also documented that PCFG whales "frequently migrate with [non-PCFG] whales and thus there is adequate

[19] As Mr. Scordino testified, Mr. Schubert's testimony is full of similar examples where he selectively cites to the portion of the scientific literature which supports AWI's opposition to the Makah hunt. Scordino Rebuttal Decl. at 11-12 (noting Schubert's failure to mention the occurrence of external recruitment in PCFG population dynamics, among other things); Tr. V4 (Schubert) at 95:23-96:15 (acknowledging conclusion of modeling study estimating external recruitment of four whales per year on average). While this is not surprising given Mr. Schubert's career-long advocacy against Makah whaling, it undermines his credibility as a witness on scientific matters.

opportunity for outbreeding," *i.e.*, interbreeding with whales of the larger ENP stock. *Id.* The absence of nuclear DNA differentiation is substantial evidence of such interbreeding. *Id.*

C. NMFS Used the Best Available Science, Had Due Regard for Distribution, Abundance, Breeding Habits and Migratory Movements of ENP Gray Whales, and Satisfied All Other Requirements for Approving a Waiver.

NMFS and the Tribe demonstrated through pre-hearing written testimony, oral testimony at the hearing, and documentary evidence that the proposed waiver and regulations reflect the best available science, and fulfilled all applicable requirements of the MMPA in proposing to waive the take moratorium on ENP gray whales and proposing regulations to govern the take. Accordingly, the presiding officer should recommend approval of the waiver and regulations as modified by the requested changes in NMFS's October 28, 2019 motion.

Over several years following publication of the 2015 Draft EIS, NMFS carefully crafted a comprehensive regulatory scheme in response to the Tribe's request for authorization to hunt a small number of ENP gray whales under its treaty right. NMFS's proposal would authorize taking of a limited number of gray whales – no more than 25 – from the abundant ENP stock over 10 years. Furthermore, NMFS constrained the hunt to protect two smaller populations of gray whales that occur in the hunt area: whales from the PCFG feeding aggregation and whales identified by NMFS as the WNP stock. NMFS relied on the best scientific evidence available and consulted with the Marine Mammal Commission to ensure that the proposed hunt would not adversely impact the ENP stock and, further, would minimize and balance impacts to the PCFG and WNP through an alternating season hunt, a limit of 16 strikes of PCFG whales and 8 strikes of PCFG females, and a vanishingly low probability of killing a WNP whale.[20]

[20] The Tribe addresses the de minimis impacts to WNP whales in Part V.D.5, consistent with NMFS's analysis of WNP impacts as an additional factor in developing the proposed regulations. *See* 84 Fed. Reg. at 13614-15.

The NGO Parties, which categorically oppose the killing of a single whale, failed to present credible evidence that a treaty harvest of 2.5 whales per year would materially affect a stock that at last count numbered almost 27,000 whales. Even considering the current UME, the size of the hunt is less than one half of 1% of the stock's PBR and would represent only a tiny fraction of the 16,033 whales that remained after the 1999-2000 UME. The NGO Parties had no answer to the IWC's modeling which, even accounting for future UMEs, demonstrated that the hunt will not prevent the stock from achieving conservation objectives, including the MMPA's goal of reaching or maintaining OSP. Moreover, the regulations provide for numerous mechanisms to adaptively manage the hunt during the 10-year duration of the waiver.

For decades, while the Makah Tribe has waited to resume its treaty hunt, the resilient ENP stock has rebounded from commercial exploitation and withstood ongoing hunts of more than one hundred whales per year in Russia, achieving the stock's highest-ever observed abundance in 2016. The Makah hunt – incredibly important to the Tribe but no more impactful to the stock than a barnacle on the broadside of one of these animals – should not be denied due to speculation about the future and uncertainties inherent in all biological systems.

The highly conservative hunt would ensure that ENP gray whales remain a significant functioning element of their ecosystem in the PCFG range by protecting PCFG whales at a level that the feeding group has met or exceeded since 2002. Under the proposed regulations, female PCFG whales are given twice the conservation emphasis as males, with a total PCFG strike limit over 10 years of 16 whales, only 8 of which may be females. The odd-year hunt will be limited to two strikes – just one if the first whale is landed. Most significantly, no hunt in any season may occur if the PCFG's abundance is less than 192 or the associated minimum estimate (Nmin) is less than 171. These and other provisions will ensure that PCFG whales continue to contribute

to the health and stability of the coastal ecosystem and, as the IWC found, will not be prevented from achieving or maintaining their OSP level.

1. Distribution and Abundance.

a. The ENP Stock

Limits on the hunt designed to protect PCFG and WNP gray whales significantly reduce the number of ENP whales that can be struck and landed compared to the Tribe's waiver request. For example, the 10-year waiver would allow the Tribe to land only 20 whales; the Tribe's request was for 20 whales over a five-year period. These constraints greatly diminish any impact, adverse or otherwise, on the abundant ENP stock. To put the hunt in context, an average of 2.5 strikes per year represents 0.015% of the stock's population following the 1999-2000 UME, and just 0.009% of the 2016 estimated population. The annual removal level could not even be detected within the 95% confidence interval which, most recently, ranged from 24,420 to 29,830 animals. NMFS Ex. 1-7 at 15. It is also a tiny fraction of the 2016 PBR of 801, indicating that the stock would remain within its OSP even if hundreds more human-caused mortalities per year other than the Makah hunt occurred. NMFS Ex. 2-12 at 5. This evidence demonstrates that the treaty hunt will have no material effect on the ENP stock's abundance, including relative to OSP. *See also* Part III.C.2 above (IWC Scientific Committee's 2018 review demonstrated that the OSP objective of the MMPA would be satisfied); Brandon Decl. at 44.

What's more, as discussed in Part III.C.1 above, the United States and Russia's longstanding cooperative management of the IWC gray whale catch limit for the Tribe and Chukotka Natives makes it highly likely that any whales not hunted by Makah under a waiver will be killed in the Chukotkan hunt instead. Weller Decl. ¶ 9 (explaining joint catch limit and transfer of unused whales under the bilateral agreement); Scordino Decl. at 97. Testimony at the

hearing clarified that the Chukotkans have expressed a need for at least 140 whales per year, Tr. V2 (Weller) at 112:18-21, and that their lowest harvest level in over 20 years in 2018 (107 whales) was likely due to a miscalculation of the catch limit and transfer of unused Makah whales, Tr. V4 (Scordino) at 11:21-12:5 (discussing Ex. M-0311 at 4); *see also* NMFS Ex. 3-87; Scordino Cross Ex. SS-02 at 16. Notwithstanding the anomalous 2018 Russian harvest, the evidence demonstrated that between 1998 and 2018 the Chukotkans took all but 11 of the more than 2,600 gray whales that were available under the IWC-approved catch limits.[21] As Dr. Tillman testified, the Chukotkans have both the need and capability to take the higher catch limit that became available to them (and Makah) starting in 2019. Tr. V5 (Tillman) at 234:4-235:9; NMFS Ex. 3-87 at 4 (2012 harvest of 143 whales, exceeding the then-applicable annual limit). In sum, if Makah were prevented from hunting under the proposed waiver, it would simply shift the Makah allocation to the Chukotkan hunt where the whales are all but certain to be killed.

The abundance of the ENP stock has been affected by the current UME. With 214 whales stranded in 2019 as of the start of the hearing on November 14, scientists estimate that after accounting for the percentage of dead whales that are not observed, a total of 1,700 to 5,500 gray whales may have died in 2019. Tr. V1 (Yates) at 20:1-17. However, the proposed Makah hunt, as demonstrated above, would have no discernible effect on the ENP's abundance even as compared to the stock's level immediately after the previous UME, which was its lowest in the past 20 years. The Tribe addresses this issue in greater detail below. *See* Part IV.C.5.

Just as it would have no discernible biological impact on the stock, the hunt would also have no discernable effect on the distribution of ENP gray whales. All available evidence indicates that hunting activities, including approaching with one or more vessels, harpooning and

[21] Stated another way, of 84 whales allocated to Makah between 1998 and 2018, the Tribe hunted two (1999 and 2007) and the Chukotkans hunted 71, leaving only 11 whales unharvested or about one half a whale per year.

shooting a rifle, do not affect the availability and location of gray whales. Despite the decades-long hunting of over one hundred gray whales annually off Russia's Chukotka Peninsula, there has been no discernible effect on the availability of whales to the Chukotka Natives or the location where they are hunted. Scordino Decl. at 23-26 (describing studies of the Chukotka hunt); Weller Decl. ¶ 47; NMFS Ex. 1-7 at 31. Although these studies did not focus on effects on individual whales, they demonstrate that at a population level the hunts do not cause shifts in distribution. Scordino Decl. at 26; Tr. V3 (Scordino) at 125:13-20. Also, based on limited data available on the unauthorized hunt in the Strait of Juan de Fuca on September 8, 2007, there was no evidence of a change in distribution within 5 kilometers of the hunt. Scordino Decl. at 27. Indeed, upon Sea Shepherd's request, at the hearing Mr. Scordino provided additional information showing that all five of the whales he observed in the vicinity of the hunt in August 2007 were seen in the same vicinity afterward: four of the five were seen just three days later (September 11, 2007) and four were also seen during surveys in 2008. Tr. V4 at 6:1-10. As Mr. Scordino testified, this was likely due to excellent foraging conditions. *Id.* at 6:11-14.

Non-lethal hunt activities such as approaches, training harpoon throws, and unsuccessful strike attempts may also cause a 'take' and are authorized in the proposed regulations. Substantial evidence demonstrated that, similar to the effect of scientific research methods such as approaching a whale to obtain photographs or to collect a small piece of blubber and skin by shooting the whale with a biopsy bolt from a crossbow, non-lethal hunt activities will not have a material effect on the ENP stock's distribution, and any effects are most likely to be short-term, temporary and specific to the location of the activity. For example, based on more than a decade of field surveys in the Makah U&A area, Mr. Scordino testified that most whales he encounters for biopsy sampling show a mild reaction which may include a quick acceleration to a short

distance away. Scordino Decl. at 27-29. However, even whales that are biopsied at close proximity normally stay in the same area after sampling when they are feeding, *id.* at 29, and approaches for photographic identification cause a lesser response. Tr. V3 (Scordino) at 73:1-10. The potential disturbance from non-lethal hunt activities is also likely to be comparable to or less than the disturbance caused when a whale watching vessel approaches a whale, sometimes repeatedly. Tr. V3 (Scordino) at 92:3-6, 129:8-19. Although a range of responses to non-lethal hunt activities are possible, they would not cause a greater effect on the distribution of gray whales than currently permitted research activities. Scordino Decl. at 29.

Dr. Weller also testified based on his extensive field experience that non-lethal hunt and training activities are analogous to the research activities that he, Mr. Scordino and many other researchers routinely conduct on gray whales. Approaches, training harpoon throws and unsuccessful harpoon attempts would all be expected to have short-term, minimal effects on whales, with no lasting effect on the whale's health and behavior. Weller Decl. ¶¶ 45-52. Dr. Weller also relied on the proposed regulations' limits on non-lethal activities and the comparatively small portion of the ENP and PCFG range in which such activities would occur to demonstrate that they would not have a discernible effect on the ENP stock or the PCFG. *Id.* He also testified that because of weather and other factors affecting the hunt, relatively few migrating whales are expected to be subject to non-lethal hunt encounters, which would not materially affect their migration. *Id.* ¶ 51.

Sea Shepherd presented rebuttal testimony by Dr. Villegas-Amtmann to attempt to demonstrate that hunt and training activities could disturb a gray whale while migrating or feeding to a degree that could cause energy loss and influence long-term survival probability. Villegas-Amtmann Rebuttal Decl. ¶ 6. Dr. Villegas-Amtmann's written testimony focused on

two papers regarding modeling the bioenergetic effects of disturbance and offered no conclusions regarding the proposed waiver. In oral testimony, she opined that "I wouldn't suggest to input another source of disturbance at the moment until we know a little bit more about the effects of the disturbances they're already facing." Tr. V5 at 135:15-18; *but see* Tr. V2 (Moore) at 132:14-24, 133:14-135:2 (explaining that limited information exists on how disturbances or behavioral modifications translate to impacts on energy budgets). Dr. Villegas-Amtmann's suggestion that the waiver wait for the development of an unknown amount of additional science is contrary to the best *available* scientific evidence standard of the MMPA. *See* Part IV.B.3 above. Furthermore, in cross examination Dr. Villegas-Amtmann conceded that she had no data regarding the potential disturbance impacts of the Makah Tribe's training or hunting activities on gray whales, and no basis to opine that the training or hunting would impact whale abundance at the population level. *See* Tr. V5 at 155:15-23, 165:2-166:1. Dr. Villegas-Amtmann has conducted no field work studying gray whales, has never been to Neah Bay or the Makah hunt area, and her studies focus on foraging pregnant non-PCFG ENP whales, which would never be present in the Makah hunt area. *See id.* at 182:19-183:9, 186-87. Her findings do not inform the analysis of impacts to PCFG whales, because those whales have shorter migratory paths and different energy expenditures than other ENP whales. *Id.* at 183:22-184:12. Because her testimony did not attempt to state the degree of disturbance expected from Makah training or hunting activities, or the impacts of that disturbance on gray whale abundance or distribution, Dr. Villegas-Amtmann's testimony has no bearing on whether NMFS has satisfied the MMPA criteria for the proposed waiver and regulations.

b. The PCFG.

The most recent abundance estimate for the PCFG is 232 animals as of 2017. NMFS Ex. 3-101 at 1, 33 (Table 17). This is a slight decline in the estimate that utilized data collected through 2015, but well above the lowest abundance in the post-2002 period of stability. Scordino Decl. at 42; Ex. M-0053 at 32 (Table 15)); Weller Decl. ¶ 26. To protect PCFG whales and ensure they remain a functioning element of the ecosystem, NMFS included a low abundance threshold set at the lowest point of the recent period of stability: 192 whales, which occurred in 2007. Weller Dec. ¶ 26. If a future abundance estimate falls below this level (or the associated Nmin of 171), the hunt will not occur that season and will not resume until a subsequent estimate exceeds those levels. Further, if a model projection of abundance for the upcoming hunt season falls below those levels, no hunting may occur. Weller Decl. ¶ 56; Moore Decl. ¶¶ 19-25 (describing model development). The regulations also limit PCFG strikes to 16 total and eight females; the waiver will be implemented through permits of three to five years in duration; and the entire waiver will expire in ten years. Collectively, these provisions ensure that the PCFG will continue functioning within the ecosystem. Indeed, even if the PCFG declines below the threshold levels for reasons *unrelated* to the Tribe's hunt, the regulations would still require Makah hunting to cease until abundance increased. Scordino Decl. at 101. The IWC's Scientific Committee reviewed the proposed hunt plan, *see* Part III.C.2 above, and concluded it met the IWC's conservation objectives for the PCFG. Brandon Decl. at 44. Thus, even though the PCFG is not a separate stock, the proposed waiver and regulations satisfy the MMPA's goal of achieving or maintaining OSP with respect to this group of whales. *Id.*

There is currently no evidence that the UME that began in 2019 is affecting PCFG whales. During the previous UME the PCFG experienced a pulse of immigration increasing its abundance. Brandon UME Decl. at 6; *Scordino Decl.* at 39-40. Although one stranded whale in

2019 has been matched to the Cascadia Research Collective (CRC) catalog of PCFG whales, this does not indicate a substantial die-off of PCFG whales. *See* Tr. V1 (Yates) at 82:14-16. First, even in a typical non-UME year, several whales strand on average in the PCFG range during the feeding season. Tr. V3 (Scordino) at 88:2-89:4. Second, as Dr. Moore explained, Ms. Newell's testimony applying the unobserved whale multiplier to the lone PCFG stranding in 2019, Tr. V4 at 168:7-15, was not scientifically sound. *See* Tr. V2 at 129:10-131:13; *see also* Tr. V5 (Newell) at 14:22-25 (expressing unfamiliarity with how multiplier was developed). Finally, Ms. Newell's observation of "skinny" whales during the summer of 2019 in Depoe Bay, Newell Rebuttal Decl. ¶ 26, is not particularly informative because, as Mr. Scordino testified, some whales arrive at the feeding grounds in a malnourished state, especially nursing females, but improve their condition over the summer and fall by feeding. Tr. V3 at 83:10-84:8 (explaining need for systematic study of body condition to make scientifically valid comparisons).

As described above, testimony by Mr. Scordino and Dr. Weller supported NMFS's determination that non-lethal hunt activities will have at most short-term, localized effects on gray whale movements and behaviors. *See* Part V.C.1.a above. As an example of how gray whales have continued to thrive despite being subject to many minor, non-lethal impacts, Dr. Weller testified that between 1996 and 2015, researchers approached thousands of whales closely enough to obtain suitable photographs of over 21,000 whales representing over 1,600 unique individuals; nevertheless, gray whales continued to utilize the areas between Kodiak Island and southern California, and increased in abundance in the PCFG range. Weller Decl. ¶ 47; *see also* Ex. M-0053 at 50. NMFS's proposed regulations also reduce the likelihood of adverse impacts by establishing lower sub-limits for non-lethal PCFG interactions (142 PCFG approaches compared to 353 overall, and 12 unsuccessful harpoon attempts and training harpoon

throws in odd-year hunts compared to 18 in even-year hunts). Weller Decl. ¶¶ 45, 48. Moreover, if any discernible impacts to the PCFG are observed from non-lethal hunt activities, the proposed regulations provide several mechanisms to mitigate and adapt to this unlikely scenario, including regular issuance of permits, NMFS's authority to modify the regulations, and the 10-year expiration of the waiver. Finally, if approaches and training harpoon throws did materially affect PCFG distribution – to a degree that substantially increased emigration from the feeding aggregation – no hunting would occur if the low abundance thresholds were triggered.

Studies regarding the distribution, movement and feeding behavior of PCFG whales further support NMFS's determination that the proposed hunt will not affect the function of gray whales in the PCFG range. *See* Scordino Decl. at 29-64. Mr. Scordino testified that PCFG fidelity to the PCFG feeding grounds varies widely, "from individuals with high inter-annual fidelity to a small area within the PCFG range to whales that have only been seen once in the PCFG range and are assumed to be stragglers migrating through that range en route to northern feeding grounds." *Id.* at 52. Relying on Calambokidis et al. (2017), Ex. M-0053,[22] Mr. Scordino testified that about half of the gray whales observed in the PCFG season and range are only seen once, while less than 10% have been seen in every year after their initial identification. Scordino Decl. at 52. This range of behaviors can be explained by studies showing a correlation between a whale's minimum tenure and body condition and the probability the whale will be observed in the PCFG the following year, which indicates that feeding success is the primary factor in whether a whale will return the next feeding season. *Id.* at 52-53.

[22] Calambokidis et al. (2017) was updated by Calambokidis et al. (2019), which was made available to the parties and the presiding officer on the first day of the hearing. *See* NMFS Ex. 3-101; Tr. V2 (Weller) at 18:12-19:10, 105:21-25.

For those whales that do return, Mr. Scordino testified that about half utilize a primary range of greater than 60 nautical miles (111 kilometers), which is substantially larger than the 39-kilometer north-south distance of the hunt area. *Id.* at 43, 53 (explaining the 75% inner quantile metric of Calambokidis et al. (2017)). Based on the most recent data, 52.6% of PCFG whales have a primary range that exceeds 60 nautical miles, and 32.5% exceed 180 nautical miles. NMFS Ex. 3-101 at 42-43 (Figures 8 & 9). A satellite telemetry study provides evidence of even larger movement of PCFG whales during the feeding season. Scordino Decl. at 55. Although Lagerquist et al. (2019), Ex. M-0171, had a small sample size relative to the photo-identification studies conducted by Calambokidis et al., their results are informative of PCFG movement behavior on the feeding grounds. As Mr. Scordino testified, the authors specifically excluded the southbound migration from their analysis and concluded that more than two-thirds of tagged whales had a 75% inner quantile of 60 nautical miles or greater and over half had were greater than 180 nautical miles. Scordino Decl. at 55; Ex. M-0171 at 3-4 (describing removal of "all southward and northward migration locations"); Tr. V3 (Scordino) at 238:16-21.

Mr. Scordino's own peer-reviewed research in the Makah U&A demonstrates that gray whale use of this portion of the PCFG range is variable both within feeding seasons and from year to year. Scordino Decl. at 55-58 (citing Scordino et al. 2017, Ex. M-0262). Even whales that are observed feeding in the U&A in most years "show little to no fidelity to the area within and between feeding seasons." *Id.* at 57. Mr. Scordino attributes the variability in gray whale movement and feeding behavior, both in the PCFG and in general, to changes in density and energy content of prey. *Id.* at 57-59.[23] As discussed above, favorable prey availability also

[23] Ms. Newell agreed that gray whale distribution is heavily influenced by the type and density of prey available. Newell Rebuttal Decl. ¶¶ 30-31, 33, 36, 39; Tr. V5 (Newell) at 74:14-75:14. For example, she testified that her own studies in Depoe Bay confirmed that whales leave the area when prey is not consistently available. Tr. V5 (Newell) at 76:13-77:14. Sea Shepherd suggests other factors influence PCFG distribution, such as shorter migration

influences recruitment, particularly external recruitment from the larger ENP stock into the PCFG. *Id.* at 57-58.

Mr. Scordino summarized the relevance of prey availability as follows:

> [T]he availability of prey governs the abundance and distribution of PCFG whales within the range defined by the IWC. If prey is abundant, and is of sufficient quality, then new whales will recruit into the group either through improving the condition of cows so that they can have calves or through non-PCFG whales finding suitable prey while migrating through the PCFG area and recruiting into the group rather than completing the full migration to northern feeding grounds. The abundance of PCFG whales will likely fluctuate annually whether or not the Makah Tribe is whaling because the abundance of their prey responds to environmental variables that are dynamic. The loss of whales in the area due to hunting may allow prey to flourish and lead to more whales recruiting into the group thus compensating for losses due to whaling.

Id. at 63; *see also id.* at 102; Tr. V3 (Scordino) at 53:4-58:22; Weller Decl. ¶ 52 (describing impacts of odd-year hunts and noting extensive movement in search of food).

Ms. Newell's testimony does not overcome the evidence presented by NMFS and the Tribe regarding the effect of the hunt on PCFG whales and their distribution. Ms. Newell is a retired educator who owns a whale watching business in Depoe Bay, Oregon, and photographs whales during whale watching outings and on separate trips on the water. She has not published any papers in the peer review literature since 2006, but through her whale watching and photography she has become familiar with the whales that frequent the Depoe Bay area and has published several editions of a guide to gray whales off the Oregon coast. Exs. CN-1 (Newell curriculum vitae), CN-5. Despite claiming to have taken many photographs of gray whales, she

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distances, longer feeding season, and warmer water temperatures (and less energy loss). SS Pre-Hearing Br. at 9 (citing Newell Rebuttal Decl. ¶ 31). However, these factors apply to all areas in the PCFG range compared to the northern feeding grounds and do not explain the substantial scientific evidence demonstrating high variability of gray whale distribution *within* the PCFG range and the studies that link such variability to prey availability, including Ms. Newell's Master's thesis. *See*, *e.g.*, Tr. V3 (Scordino) at 55:6-56:16 (summarizing Duffus et al. studies and Ms. Newell's Master's thesis). As discussed below, Ms. Newell's whale observations support, at most, a conclusion that *some* whales seen in the Depoe Bay area exhibit inter-annual fidelity to that unique feeding area. She has conducted no research on whales or their prey in the Makah U&A. Tr. V5 (Newell) at 75:15-76:12.

has not submitted them on a regular basis for inclusion in the CRC catalog and testified that she has "thousands" of unprocessed photographs on various hard drives. Tr. V5 at 191:13-24; Newell Rebuttal Decl. ¶ 3. Ms. Newell has never conducted research on gray whales in the Makah U&A, Tr. V5 at 75:15-76:12, and opposes the killing of any whales, Tr. V4 at 165:14-15; Tr. V5 at 83: 11-12 ("I personally don't want to see any whales killed. That's bottom line."); Newell Rebuttal Decl. ¶¶ 16, 18, 29 (granting a waiver "would be . . . unconscionable").

Ms. Newell testified that some of the whales that are observed frequently during the feeding season in Depoe Bay are present for long periods of time and exhibit "high site fidelity." Newell Rebuttal Decl. ¶¶ 30, 34-36, 39, 41; Tr. V4 at 145:23-146:11. Ms. Newell's guidebook includes individual profiles of several whales and the years in which they have been sighted in Depoe Bay. *See* Ex. CN 5 at 52-136.[24] Newell includes CRC catalog numbers for some whales in the guidebook. *See, e.g.,* Ex. CN-5 at 52 ("Scarback"); Newell Rebuttal Decl. ¶ 4.

The probative value of Ms. Newell's testimony is limited by several factors. First, Ms. Newell acknowledged that her "area of expertise is Newport and Depoe Bay, primarily Depoe Bay now. So once they leave the area, I am not sure where they go." Tr. V5 at 50:18-21; *id.* at 15:14-15 ("I am by no means an expert, you know, in the rest of the range"); Tr. V5 at 75:15-76:12. Ms. Newell's narrow geographic focus is problematic because she makes conclusions about the entire PCFG based on observations of a very small part of the PCFG range and of animals that are not representative of the PCFG as a whole. As Mr. Scordino testified, this selective use of data from individuals with unique behavior in a small area is likely to produce skewed results. Tr. V3 at 69:2-25. Indeed, it seems clear that Ms. Newell's focus is almost entirely on the small fraction of PCFG whales that exhibit high inter-annual site fidelity. *See*

[24] Pagination in Ex. CN-5 is slightly inconsistent with the page numbering of the PDF document. Our citations refer to the actual pagination in the guidebook, which appears to have two un-numbered blank pages at PDF 52 and 96.

NMFS Ex. 3-101 at 9 (6.4% of PCFG whales are seen in the range every year). Information about the whales that frequent Depoe Bay is not the best scientific evidence available for the PCFG as a whole, nor for whales that are observed by Mr. Scordino and other researchers in the Makah U&A where the hunt would occur.

Second, Ms. Newell's criticism of Lagerquist et al. (2019) and Mr. Scordino's conclusions that distribution of PCFG whales is highly variable is not based on the best scientific evidence available. *See* Newell Rebuttal Decl. ¶¶ 38-41. Despite testifying about being in contact and having discussions with John Calambokidis, Tr. V5 at 15:15-18, Ms. Newell never cited or discussed Calambokidis et al. (2017), Ex. M-0053, which until the recent publication of Calambokidis et al. (2019), NMFS Ex. 3-101, represented the best and most current scientific evidence available on the long-term abundance and distribution of the PCFG.[25] Calambokidis et al. (2017) and (2019) undercut most, if not all, of Ms. Newell's conclusions regarding the alleged "high site fidelity" of PCFG whales, including those she has observed in Depoe Bay for many years. The following table, based on Calambokidis et al. (2019), NMFS Ex. 3-101, and Ms. Newell's guidebook, Ex. CN-5, demonstrates that of the whales she testified about or included in her book that have been assigned CRC identification numbers, at least seven have been seen throughout the PCFG range over multiple years.[26] This confirms that their movements are variable, consistent with the testimony of Mr. Scordino and Dr. Weller. *See, e.g.,* Tr. V2

[25] Ms. Newell quoted Mr. Scordino and Dr. Weller's testimony that relied on Calambokidis et al. (2017) in her written testimony, Newell Rebuttal Decl. ¶¶ 21, 32, but the only Calambokidis paper she cited (without discussion) was a 2015 paper regarding biologically important areas for gray whales. Newell Rebuttal Decl. ¶ 37 (citing NMFS Ex. 3-88).

[26] In her testimony, Ms. Newell failed to mention whales that she has observed in Depoe Bay but which were not seen for many years or for long periods of time in that area. *See* Tr.V5 at 48:8-50:14 (Master's thesis finding that whales spending only 5-10 days in Depoe Bay were the largest cohort of observed whales). On cross examination Ms. Newell acknowledged that she observes variability in whale presence even in Depoe Bay. Tr. V5 at 48:24-49:1. This testimony confirmed Mr. Scordino's observation that Ms. Newell's testimony relied on a "very selective use of data," which resulted in a "very skewed representation." Tr. V3 at 69:17-20.

(Weller) at 25:5-10 ("there is site fidelity to the range, the 41 degrees to 52 degrees north . . . . But it's not true that there is a site specific fidelity to particular regions within that range.").

CRC #	Name and notes	Guidebook, Ex. CN-5, page	NMFS Ex. 3-101 page	# years seen	# (out of 9) PCFG areas seen
204	Scarback (4 calves, including Milkyway)	52-53	55	21	7
1154	Milkyway (calf of Scarback)	89	63	9	3
43	Snake Eyes (mother of Eagle Eye)	72	54	14	7
107	Eagle Eye	96-97	54	23	7
91	8-Ball	126	54	16	7
565	Comet	104-05	58	12	4
196	Morisa	66-67	55	17	8

In short, by failing to discuss the PCFG survey data in papers published by John Calambokidis, Ms. Newell's testimony was not based on the best scientific evidence available. *See also* Tr. V5 (Newell) at 50:14-15 (acknowledging lack of expertise in the PCFG range as a whole).

Third, Ms. Newell also provided three specific examples of incidents she believed demonstrated that non-lethal research approaches have caused a whale to abandon a feeding area. She described an experience biopsy sampling with Mr. Scordino, after which "most" whales left the area while a "a few … returned days later, but some never returned." Newell Rebuttal Decl. ¶ 24. She described how a whale she named "Ginger" was observed in Depoe Bay during the entire summer of 2018, but in 2019 was approached by a research vessel collecting fecal samples. *Id.* ¶¶ 22-23. After the incident, Newell observed a change in behavior and the whale was later sighted feeding in another location, about 8 miles north of Depoe Bay. *Id.* ¶ 23. Finally, she described a satellite tagging effort in Depoe Bay in the mid 2000s, after which "most of the whales departed the area." *Id.* ¶ 24.

These isolated, anecdotal observations do not overcome Dr. Weller and Mr. Scordino's testimony regarding the effects of non-lethal interactions. Mr. Scordino testified that the day

after he and Ms. Newell conducted biopsy sampling together, he returned to the same location and observed many of the same whales despite inclement weather. Tr. V3 at 74:7-15. Mr. Scordino also explained that because this occurred in October (a fact omitted by Ms. Newell), whales that left the area could have been leaving as they normally would for the southbound migration. *Id.* at 74:2-6. The incident involving "Ginger" and the fecal sample collection is not informative unless other factors potentially influencing the whale's departure from the area, such as prey availability, are evaluated (which Ms. Newell did not do). Mr. Scordino testified that Dr. Leigh Torres, whose lab has collected a large number of fecal samples off the Oregon coast, stated that she has only experienced one situation where a whale was disturbed from its normal activities, which indicates the reaction Ms. Newell described was uncommon. *Id.* at 75:13-76:11. And, even though "Ginger" left Depoe Bay, she was later observed feeding off Lincoln City, only 8 miles away. Newell Rebuttal Decl. ¶ 23. Finally, Ms. Newell provided scant information about the satellite tag incident in the mid-2000s. Her selective use of data in these examples, *see* Tr. V3 (Scordino) at 76:16-22, and her narrow focus on the Depoe Bay and Newport areas, limits the weight that should be given to her testimony in comparison to the breadth of information presented by NMFS and the Tribe on impacts from non-lethal hunt activities.

In sum, NMFS relied on the best available science in determining that the proposed hunt, including non-lethal training activities integral to conducting a successful hunt, would have no discernible effect on the ENP stock and would not prevent ENP whales from continuing to be a significant functioning element within the PCFG range.

2. Breeding Habits.

NMFS gave due regard to ENP gray whale breeding habits and applied the best scientific evidence available in determining that the proposed hunt would not have a material effect on mating by the stock. Gray whales breed on their southbound migration, with a mean conception date of December 5 and some females breeding into late January during a second estrous cycle. Weller Decl. ¶ 14. This means that only the even-year hunt, which, except for training harpoon throws, may occur from December 1 of the previous odd year to May 31, could encounter breeding whales. However, several factors make this unlikely and demonstrate that any effect on the breeding habits of the ENP stock as a whole would not be discernible. First, during December and January inclement weather is more likely and there is limited daylight compared to spring and summer, making hunting unlikely. Yates Decl. ¶ 52. Second, gray whales swim steadily during their migration and would likely transit the Makah U&A within several hours, further reducing the likelihood of encounters with the hunt during breeding. Weller Decl. ¶¶ 13, 51. Third, even if hunt activities occurred and struck a mating whale, this would only represent a tiny fraction of the abundant ENP stock. *See* Part V.C.1.a above. Finally, any whales that were disturbed from non-lethal hunt activities, which is also unlikely, would have additional opportunities to breed during the remainder of their migration. *Id*. ¶¶ 51, 60.

3. Times and Lines of Migratory Movements.

NMFS also gave due regard to the times and lines of ENP migratory movements and used the best scientific evidence available in determining that the proposed hunt would not have a material effect on those movements. First, the portion of the Makah U&A in the Pacific Ocean is approximately 39 kilometers from north to south and extends some 65 kilometers off the coast. Compared to the thousands of kilometers comprising the migratory range of the ENP stock (from Mexico to the Bering, Beaufort and Chukchi Seas) and the extensive feeding range of the PCFG

(from northern California to northern British Columbia), the hunt would occur in a very small part of the area in which gray whales migrate and feed.

Second, odd-year hunts, which are limited to July through October, will not overlap with gray whale migrations. Gray whales migrate southward off the coast of Washington from roughly late November through January, with a peak migration of January 5. Scordino Decl. at 49; NMFS Ex. 1-7 at 21. The northbound migration occurs off Washington from March into June, with the May-June period characteristic of a second phase of migration comprised of mothers and calves. Scordino Decl. at 49-50; NMFS Ex. 1-7 at 22. Because odd-year hunts will not occur during these migrations, they are unlikely to affect them.

Third, although even-year hunts would overlap with both the southbound and northbound migration, there are likely to be few hunting encounters with migrating ENP whales during the winter. *See* Parts V.C.1.a and V.C.2 above. And, while more encounters, both from hunting and training, are likely in the spring months of the hunt (April and May in particular), the non-lethal hunting and training activities during that time are not likely to have lasting or significant impacts on the migratory movements of the ENP stock. Weller Decl. ¶¶ 51, 59. The Tribe's hunt training, which will educate whalers about the uniquely near-shore migrating habits of cow-calf pairs, will also reduce the likelihood of any impact on the migration. Scordino Decl. at 50.

4. The Proposed Waiver and Regulations are Consistent with the MMPA's Purposes and Policies.

The MMPA's purposes and policies seek to ensure the health and stability of the marine ecosystem and the functioning of gray whales in the part of the ecosystem in which they occur. 16 U.S.C. § 1361(2), (6). These two ecosystem-focused purposes are closely connected to a third purpose: achieving or maintaining marine mammal stocks at their OSP level. *Id.* In evaluating the proposed Makah gray whale hunt, it is evident that the specific criteria of

distribution and abundance substantially overlap with these purposes and policies. Based on the scientific evidence presented at the hearing, NMFS can be assured that the taking authorized by the proposed waiver is "in accord with sound principles of resource protection and conservation as provided in the purposes and policies of [the MMPA]." 16 U.S.C. § 1371(a)(3)(A).

a. Optimum Sustainable Population.

Several witnesses testified that the highly restricted hunt will not cause the abundant ENP stock to fall below its OSP level. *See, e.g.*, Weller Decl. ¶ 40; Scordino Decl. at 30; Brandon Decl. at 44. In addition, Dr. Brandon explained that the IWC Scientific Committee's conclusion that the proposed hunt met the IWC's conservation objectives for all potentially affected groups of gray whales – ENP, WNP, and PCFG – meant that the proposed hunt also met the MMPA's objective of achieving or maintaining OSP for those groups. Brandon Decl. at 44; *see also* Scordino Decl. at 82; Part III.C.2 above. This testimony was undisputed.

b. The Health and Stability of the Marine Ecosystem and Gray Whale Functioning Within Their Ecosystems.

Dr. Weller testified that the proposed waiver will not materially affect the health and stability of marine ecosystems. He described several large ecosystems that overlap the ENP range and the smallest recognized ecosystem that encompasses the hunt area, the northern California Current ecosystem. Weller Decl. ¶ 68. The latter, which corresponds roughly to the PCFG range from northern California to Vancouver Island, is "shaped by dynamic, highly energetic, large-scale processes." *Id.* ¶ 70. The role of gray whales in structuring this ecosystem is comparatively small, and the hunt would remove few animals relative to their current abundance. *Id*. Dr. Weller testified that, even at the scale of the hunt area (the northern

Washington coast), the proposed hunt would not have a significant effect on the health or functioning of the marine environment. *Id.* ¶¶ 71-73.[27]

The evidence also established that the proposed waiver will not materially affect gray whale functioning within these ecosystems. *See* Parts V.C.1-4.b above. As discussed above, *see* Part V.C.1.b, PCFG distribution will continue to be highly variable due to prey availability regardless of whether the Tribe is hunting. Scordino Decl. at 63, 101-02. Any PCFG whales removed by the hunt will eventually be replaced through one of two mechanisms: 1) newly recruited whales; or 2) a lower level of emigration of PCFG whales if foraging conditions are favorable. Tr. V3 (Scordino) at 53:4-55:2, 81:17- 82:6, 98:7-10 (small number of removals in a hunt would be replaced by newly recruited whales such "that you would not see an observable effect to that ecosystem"), 213:3-6. Moreover, many provisions in the proposed regulations ensure the hunt will not have a material adverse effect on the PCFG or the functioning of gray whales in the PCFG range, including the alternating season hunt structure, PCFG-specific strike limits, the methods of accounting for strikes on PCFG whales, the 10-year limit on the waiver, and the low abundance threshold, which will prevent the hunt from occurring if the actual or projected abundance of PCFG whales drops below 192 animals (or an Nmin of 171), regardless of the cause of such a decline. Scordino Decl. at 101; Tr. V3 (Scordino) at 66:4-67:22. Finally, as Dr. Weller and Mr. Scordino testified, even if whales are disturbed by non-lethal hunt activities, those effects will likely be short term and the whales will return to the area if favorable foraging conditions exist. *See* Part V.C.1.b above. Sea Shepherd's argument that non-lethal

[27] PCPW raised concerns that the Strait of Juan de Fuca, which along with Puget Sound and other inland waters is sometimes referred to as the Salish Sea, could be negatively affected by a hunt. Owens Decl. ¶ 20; Tr. V2 (Owens) at 87:22-25. However, the Strait is outside the hunt area and, in any event, is subject to similar large-scale processes as ecosystems within the migratory range of the ENP stock such that the effect of the hunt would be minimal. *See* Tr. V3 (Scordino) at 98:2-11, 210:12-17; *see also* Tr. V2 (Weller) at 88:8-24 (describing exclusion of Strait from hunt area and NMFS's consideration of protections for PCFG whales in evaluating hunt management plan). No scientific evidence, including Ms. Owens' non-expert testimony, was presented to contradict this evidence.

hunt activities will pose a "substantial threat to PCFG gray whales" because they "exhibit a considerable degree of site fidelity," SS Pre-Hearing Br., Nov. 7, 2019, at 8-10, is contradicted by the evidence and does not undermine NMFS's determination that the hunt will allow for gray whales to continue functioning in the ecosystem that encompasses the hunt area.

5. The Waiver Should Be Approved Notwithstanding the Current UME.

The NGO Parties assert that the proposed waiver is based on inadequate data in light of the UME and propose delaying proceedings until the UME is complete and the cause is determined. *See id.* at 16 (arguing that the "waiver proceeding should not go forward in the face of . . . the UME"); Schubert Rebuttal Decl. ¶ 12 (arguing that proceeding with waiver would be "biologically reckless"). As explained below, the NGO Parties' argument should be rejected because the best scientific evidence available indicates that the hunt will not have a discernible effect on the ENP stock notwithstanding the UME and the proposed regulations include numerous safeguards for ENP, WNP and PCFG gray whales.

The NGO Parties are incorrect that uncertainty regarding the UME should delay this proceeding or NMFS's ultimate decision on the waiver for at least four reasons. First, there is no evidence that hunting under the IWC-approved catch limit is a cause of the UME. Indeed, the Chukotka Natives of Russia hunted hundreds of whales during and since the 1999-2000 UME, and the population increased greatly in that time. *See* Tr. V1 (Bettridge) at 92:5-10.

Second, the UME appears to primarily impact the ENP stock, which is an extremely robust and resilient stock.[28] Even a relatively large loss would not push the ENP below MNPL, which is the lower bound of OSP and broadly recognized as 60% of carrying capacity. *See* Brandon UME Decl. at 5-6. For instance, in the previous UME the ENP declined approximately

[28] All available data indicate the UME had no impact or a positive impact on WNP and PCFG abundance. Weller 3rd Decl. ¶¶ 8-9.

20-25 percent, and the stock remained well above MNPL, *i.e.*, within OSP, and PCFG and WNP whales continued to increase steadily. *See* Brandon UME Decl. at 5-6 & Fig. 2; Scordino Decl. at 39-40. As to the current UME, if the most recent abundance estimate for ENP gray whales of 26,960 represents the stock's carrying capacity, an unprecedented 10,784 whales would have to perish with no births to cause decline to MNPL. This seems unlikely given the documented resilience of the ENP stock over time, and it is well outside the bounds of the 2019 strandings data, which indicates between 1,700 and 5,500 whales may have died. If such unprecedented mortality were to occur, there would clearly be larger issues than the proposed waiver driving the loss. A Makah hunt of an average of 2.5 whales per year over ten years would constitute only a tiny fraction of the overall loss – 0.2%[29] – and make no discernible contribution to it.

Third, the robust modeling performed by the world's leading gray whale experts anticipated the occurrence of multiple UMEs and determined that the Makah hunt still meets all IWC conservation objectives. One of these objectives is equivalent to the OSP objective of the MMPA. *See* Brandon Decl. at 9, 14-15, 50. During the IWC Scientific Committee's 2018 evaluation of ENP catch limits, a trial was run where 20% of the ENP stock was assumed to die in each of two future mortality events, one in the first fifty years of population projections and one in the second fifty years. Ex. M-0568 at 54 (Table 1, List of Trials). The catch limits evaluated during this review included NMFS's proposed regulations for the Makah hunt, the Chukotkan hunt, and the interaction of the future UMEs with other environmental stressors. In each of these evaluations, the catch limits were found to satisfy the conservation objectives of the IWC for all groups of gray whales. *See* Brandon Decl. at 44; *see also* Brandon UME Decl. at 12.

[29] This percentage was determined conservatively by dividing all 25 whales the Makah hunt could take over 10 years by 10,784 (the number of lost whales necessary to reach MNPL, the lower bound of OSP). The calculation also assumes (unrealistically) that there would be no population gain in this time).

Because the IWC's conservation objective to attain or sustain MSYL is equivalent to the OSP requirement of the MMPA, the best scientific evidence available indicates the ENP stock will maintain its abundance at OSP notwithstanding future UMEs and continuing ASW hunts.

The fourth reason the waiver should proceed without delay is that Makah must also obtain a hunt permit from NMFS pursuant to 16 U.S.C. § 1374 to conduct hunting. *See* 84 Fed. Reg. at 13605. The initial MMPA hunt permit would be limited to three years. 84 Fed. Reg. at 13619, § 216.113(a)(1). The MMPA's permit process provides for public comment and a potential hearing, 16 U.S.C. § 1374(d), and is subject to NEPA review. NMFS may also modify the permit to conform to any modification of the hunt regulations. 16 U.S.C. §§ 1373(e), 1374(e)(1)(A). Each of the three permits the Tribe would need to hunt during the ten-year waiver period is subject to these requirements, which allows for modifications based on new information about the UME.

Yet additional protections are provided under tribal and international law. Under the Makah Whaling Ordinance, the Makah Tribal Council must first issue a regulation, and then a permit to the whaling captain, prior to a hunt. *See* Ex. M-0603, §§ 3.020, 5.020. These tribally mandated processes provide opportunity for additional restrictions. Tr. V3 (Scordino) at 67:4-7 (describing tribal management). Further, the IWC Scientific Committee conducts regular Implementation Reviews to ensure its advice reflects available scientific evidence, as required by the IWC.[30] Past reviews have led to recommendations to modify ASW catch limits based on new scientific information. *See* Tillman Rebuttal Decl. ¶ 5. The IWC processes would inform NMFS's and the Tribe's hunt implementation.

In sum, the proposed regulations are extraordinarily conservative and would allow the

[30] *See* International Convention for the Regulation of Whaling, art. V(2)(b) (Schedule amendments "shall be based on scientific findings") available at: https://archive.iwc.int/pages/view.php?ref=3607&k=.

Tribe to strike at most 25 whales over 10 years from the very robust ENP stock. To continue hunting after 10 years, the Tribe would need to request another waiver. Even if the UME is extensive, the Makah hunt would impact a very small fraction of ENP whales and have no discernible effect on whether the stock remains at OSP. Extensive modeling by the IWC Scientific Committee took into account the potential for multiple UMEs and found that conservation objectives were met for ENP, PCFG, and WNP gray whales. The Makah hunt will be subject to multiple layers of regulation, oversight, and review during the ten-year waiver period, which are more than adequate to address any unanticipated impacts of the current UME.

D. NMFS Met All MMPA Requirements for Promulgating Regulations.

To govern the Tribe's take of ENP gray whales, NMFS proposed regulations establishing a detailed management scheme. With one exception, addressed in Part V.G below, the Tribe supports the proposed regulations. In developing the regulations NMFS considered numerous factors as required by the MMPA and an additional factor regarding potential impact of the hunt on WNP gray whales. Substantial evidence demonstrates that the proposed regulations fulfill the mandates of the MMPA: they are based on the best scientific evidence available, were made in consultation with the Marine Mammal Commission, will not be to the disadvantage of the ENP stock, and are consistent with the purposes and policies of the MMPA.[31]

1. Existing and Future Levels of the ENP Stock.

[31] As noted in Part IV.B.2 above, the MMPA's requirements for promulgating regulations under Section 1373 substantially overlap with the requirements for approving a waiver under Section 1371(a)(3)(A). *See also* Final Hearing Agenda, ALJ Ex. 005 at 2 (Issue II.A.1.a). Moreover, because the regulations define how the waiver would be implemented, they are discussed extensively in the argument section addressing the waiver criteria. *See* Part V.C above. Reliance on the best scientific evidence available and consultation with the MMC are addressed in Parts V.E and V.F below, and consistency with the purposes and policies of the MMPA are addressed in Part V.C.4 above. Because NMFS interprets the undefined term "disadvantage" in relationship to the impact of the proposed hunt on the ENP stock's abundance relative to OSP, evaluation of this criteria is effectively the same as that in Part V.C.4.a.

Notwithstanding the current UME, *see* Part V.C.5 above, the proposed hunt will not have a discernible effect on the robust and resilient ENP stock, which has exceeded 15,000 animals for nearly 40 years. NMFS Ex. 1-7 at 15 (Table 1). Even at the ENP's low abundance of 16,033 following the 1999-2000 UME, the average annual strike limit of 2.5 under the proposed regulations would be less than one-tenth of one percent of the stock. This level of removals is also a small fraction of the annual human-caused mortality the stock could theoretically withstand and remain at OSP. *See* Part II.B.1. In addition to the small scale of the Makah hunt, the effect of the regulations on future levels of the stock is negligible because any non-PCFG ENP whales not hunted by the Tribe are highly likely to be killed in the Chukotkan hunt. *Id.*; *see also* Part V.C.1.a. The Tribe and NMFS presented substantial evidence that the proposed level of removals would not affect the stock's abundance relative to OSP. *See* Brandon Decl. at 33-44 (describing IWC Scientific Committee's 2018 evaluation of the Makah hunt); Brandon UME Decl. at 12-13; Weller Decl. ¶ 40.

2. United States International Treaty and Agreement Obligations.

The proposed regulations would not authorize more than five strikes in any calendar year, which is consistent with the 2019-2025 ASW gray whale catch limit approved by the IWC and the bilateral agreement between the United States and Russia allocating the 140 annual strikes.[32] *See* Part III.C.1 above; Tillman Rebuttal Decl. ¶¶ 12-14 (history of gray whale catch limits since 1997); Tr. V5 (Tillman) at 233:4 – 234:14. This catch limit was approved at the IWC's 2018 biennial meeting on the basis of a joint request and needs statements submitted on behalf of the

[32] Although it is unlikely due to adverse hunting conditions in December, the Tribe could theoretically use up to five strikes in an odd calendar year – two during the odd-year hunt from July through October and three during December, which is part of the subsequent even-year hunt. *See also* § 216.113(a)(4)(v) ("the number of gray whales that the hunt permit may authorize to be landed in any calendar year will not exceed the number [specified in the bilateral agreement] as the U.S. share of the catch limit established by the [IWC]").

Makah Tribe and Chukotka Natives, and is consistent with the advice of the IWC's Scientific Committee, which determined that the proposed hunt satisfied the IWC's conservation objectives. *Id.*; Brandon Decl. at 44. The gray whale catch limit will be subject to ongoing review by the IWC through in-depth Implementation Reviews conducted by the Scientific Committee approximately every six years, during which any new scientific information pertaining to gray whales (including the UME) will be considered. Brandon Decl. at 17, 36. The next such review is scheduled for 2020. *Id.* a 36.

3. Marine Ecosystem and Related Environmental Considerations.

Substantial evidence demonstrates that NMFS gave full consideration to the effect of the proposed regulations on "the marine ecosystem and related environmental considerations." 16 U.S.C. § 1373(b)(3). As this factor relates to the impact of taking gray whales under the regulations, it was fully considered by NMFS as part of the analysis of the distribution and abundance of ENP and PCFG whales, Part V.C.1 above, and the analysis of the risk to WNP whales, Part V.D.5 below. Although it is not required to do so under the MMPA, NMFS's analysis considered potential cumulative impacts on gray whales from other anthropogenic factors such as ship strikes, bycatch in fisheries and other forms of human-caused mortality because these are part of NMFS's stock assessment process. Bettridge Decl. ¶¶ 6-12: Tr. V1 (Bettridge) at 91:13 – 92:15 (human-caused mortality included in SARs), 116:14-16. In addition, ongoing evaluation by NMFS and others of the abundance of all three groups of gray whales necessarily incorporates cumulative effects on the whales. *See, e.g.,* Tr. V2 (Weller) at 17:20 – 18:8 (ENP abundance estimate for 2019-2020 will reflect response to the current UME), 19:11-23 (PCFG and WNP surveys conducted annually). And while not an MMPA requirement, NMFS also fully considered the effect of the hunt on other aspects of the marine ecosystem

besides gray whales. *See, e.g.,* ALJ Ex. 006 at Ch. 3 & 4. Mr. Scordino also testified about the potential impacts of oil spills, ocean noise, military activities, climate change,[33] and other potential human-caused impacts to gray whales. Scordino Decl. at 82-99. This review, along with NMFS's analysis in the 2015 Draft EIS, informed Mr. Scordino's conclusion that the "Makah hunt will not increase the risk of extinction or depletion of gray whale populations even given the many potential cumulative threats to the populations." *Id.* at 99.

4. Economic and Technological Feasibility of Implementation.

The proposed regulations would allow the Tribe to conduct a treaty ceremonial and subsistence whale hunt with similar methods and gear as the Tribe utilized in the successful hunt on May 17, 1999. *See* Arnold Decl. ¶ 19; Scordino Decl. at 14-22. While the Tribe's pursuit of the waiver has been financially burdensome, former Makah Tribal Council member Greig Arnold testified that the Council is committed to implementing the result of the process, and he anticipates it will be economically feasible. Arnold Decl. ¶ 19; *see also id.* ¶ 24 (describing the Makah Whaling Ordinance, Ex. M-0603, tribal whaling permits and regulations, and the Tribe's management capabilities); Scordino Decl. at 10-12, 20-22 (Tribe's marine mammal program and whaling training program); Tr. (Scordino) V3 at 60:14-25 (tribal hunt observer).

NMFS demonstrated the financial capacity to continue surveys and photo-identification work, support NMFS personnel for monitoring the hunt, and fulfill other roles the agency will have in managing the hunt and, if necessary, enforcing the regulations. Yates Decl. ¶ 62; Yates 3rd Decl. ¶ 24. Substantial evidence supports NMFS's consideration of and reliance on the technical feasibility of using photographic identification methods to monitor the hunt. *See, e.g.,* NMFS Exs. 1-9, 1-12; Weller Decl. ¶¶ 29-32, 57; *see also* Scordino Decl. at 32-35 (photographic

[33] The NGO Parties contend that climate change must be considered by NMFS in the waiver process although they do not identify the source of this requirement in the MMPA. The Tribe addresses the issue in Part V.H.1 below.

identification of PCFG whales); Tr. V3 (Scordino) at 98:21 – 101:12 (actual photo ID error rate much less than informal and conservative estimate of 20% used in modeling).

5. Risk to WNP Gray Whales.

In developing the proposed regulations, NMFS determined that the "potential effect of the proposed hunt on the WNP stock was an additional relevant factor that should be considered." 84 Fed. Reg. at 13614. There is substantial evidence that NMFS fully considered the effect of the proposed regulations on the WNP stock of gray whales by evaluating "both: (1) The probability of encountering a WNP gray whale (exposure) during an ENP gray whale hunt or training; and (2) the likelihood that an encounter would kill or otherwise harm a WNP whale." *Id.* Moreover, the Tribe presented testimony that the western gray whales that migrate from Sakhalin Island off Russia to North America and may be affected by the proposed hunt are different from the isolated historic western gray whales that remain listed under the ESA. Therefore, while the probability of a Makah hunt encountering a whale migrating from Sakhalin Island is extremely low, there is no risk of encountering a member of the historic western gray whale population, *i.e.*, the gray whales that remained listed as endangered under the ESA when the ENP stock was delisted in 1994, *see* 59 Fed. Reg. 31094 (June 16, 1994), because this population – if it still exists – migrates solely along the coast of Asia.

The proposed regulations include numerous provisions to implement NMFS's management goal, consistent with the recommendations of the MMC, of limiting the likelihood that a hunt would strike or otherwise harm a WNP whale. Yates Decl. ¶ 26. These provisions include limiting the number of strikes during the migratory season when WNP whales may be in the hunt area (15 over five even-year hunting seasons) and imposing additional restrictions on even-year hunts, such as prohibiting more than one strike in 24 hours, allowing no training

harpoon throws, and requiring sufficient time between hunts for NMFS to identify a landed whale. If NMFS determines that a WNP whale has been struck during a hunt, all hunting must cease unless measures are taken to ensure no additional WNP whales are struck.

Relying on a probability analysis developed by Drs. Moore and Weller, NMFS analyzed the likelihood of Makah hunters encountering a WNP gray whale through hunt or training activities, including striking a whale, unsuccessfully attempting to harpoon a whale, or approaching a whale during a hunt or training. Yates Decl. ¶¶ 63-66; Moore Decl. ¶¶ 11-18; Moore 2nd Decl. ¶ 8; NMFS Ex. 4-15 (Memo re updated analysis). Drs. Moore and Weller conducted their analysis in 2013, 2018 and again in 2019. Based on the 2019 analysis, which is the best scientific evidence currently available, the probabilities are as follows:

Type of Encounter	Probability of Encountering a WNP Whale in 1 Event	Probability of Encountering a WNP Whale in 1 Year	Probability of Encountering a WNP Whale in 10 years	Years Until Encounter Probability is 100%[34]
Strike	0.005 (1/2 of 1%)	0.015 (1.5%)	7.4%	135
Unsuccessful Harpoon Attempt	N/A	8.8%	36.5%	27
Approach	N/A	82%	100%	1.2 (18 in 10 years)

Moore 2nd Decl. ¶ 8; NMFS Ex. 4-15 at 12-13. As a result of the highly restrictive regulations, striking a WNP whale would only be likely to occur on the order of once per century. Such a remote possibility of a WNP strike – in conjunction with IWC's evaluation of the proposed hunt – demonstrates unequivocally that the Makah hunt poses no credible risk to these whales.

[34] This probability calculation assumes that the regulations would continue in perpetuity, the maximum number of strikes, unsuccessful harpoon attempts, and approaches would be made each year, and the WNP, ENP, and PCFG population sizes remained constant. Moore 2nd Decl. ¶ 8.

Unsuccessful harpoon attempts are also unlikely, with less than a 50% probability of a single occurrence during the 10-year life of the waiver. And while Dr. Moore's analysis indicates that Makah hunters may approach up to 18 WNP gray whales over 10 years, this estimate reflects the conservative assumption that all 353 approaches allowed annually under the regulations will occur in the migratory season. As Dr. Moore explained, this scenario is unrealistic because "we would expect a substantial number of approaches to occur outside this period, i.e., during the summer when ocean conditions are more favorable and, in odd years, when hunting approaches are restricted to July - October." NMFS Ex. 4-15 at 12 n.3; *see also* Tr. V2 (Moore) at 143:16 – 144:8; Yates Decl. ¶ 29.

With respect to the second part of NMFS's analysis, there is substantial evidence supporting NMFS's determination that an encounter between Makah hunters and a WNP whale would not kill or otherwise harm the whale.[35] First, the probability of a strike is vanishingly low. Second, as to non-lethal encounters involving unsuccessful harpoon attempts and approaches, NMFS and the Tribe demonstrated that such activities would most likely result in short-term impacts on the affected whales comparable to research activities and whale watching and would not have any material impact on their health and behavior. *See* Parts V.C.1 - V.C.3 above.

Buttressing NMFS's analysis, the IWC Scientific Committee thoroughly evaluated the impacts of the hunt on WNP gray whales at the population level. *See* Part III.C.2 above; Brandon Decl. at 31. The proposed hunt satisfied all the IWC's conservation objectives for the "Western Feeding Group," which is the IWC's term for WNP whales that migrate to North America. In other words, the Makah hunt can occur, and WNP whales will still satisfy the MMPA's objective of achieving or maintaining OSP. *See* Brandon Decl. at 9, 14-15; *see also*

[35] In the Notice of Proposed Rulemaking, NMFS stated that "this constitutes an acceptable level of risk for management purposes and under the MMPA." 84 Fed. Reg. at 13615.

Scordino Decl. at 102-03 (hunt will not disadvantage Sakhalin whales).

AWI's cross examination of NMFS's witnesses focused on the issue of incidental non-lethal encounters. However, it was thoroughly demonstrated that such encounters are unlikely to have any discernible impact on any gray whales, much less the occasional WNP whale that may be encountered in hunt and training activities. Moreover, the impacts of any incidental take of WNP whales will be evaluated in additional regulatory processes, including consultation under Section 7 of the ESA and any incidental take authorization required under the MMPA. Yates Decl. ¶¶ 67, 69; Yates 3rd Decl. ¶ 29 (citing § 216.113(a)(7)(vii)); 16 U.S.C. § 1371(a)(5)(A)).[36]

Finally, it is necessary to consider the extremely low risk of the Makah hunt encountering or harming a WNP gray whale in the context of the past decade of scientific discoveries and intensive research and analysis about the gray whales that migrate from Sakhalin feeding grounds to wintering grounds in Mexico. Until recently, these western gray whales were thought by the scientific community to be historic western gray whales that migrated along the coast of Asia. As Dr. Bickham and Mr. Scordino testified, data from a variety of sources has demonstrated that at least some of these whales – potentially a large percentage – in fact migrate to North America contrary to nearly all previous orthodoxy. This new scientific information should be reflected in the recommended decision because it demonstrates that the western gray

[36] In *Kokechik Fishermen's Ass'n v. Sec'y of Commerce*, 839 F.2d 795, 801 (D.C. Cir. 1988), the court held that the Secretary could not issue a commercial fishing permit under the MMPA because it was certain that marine mammals would be taken and the Secretary was unable to determine whether their taking would disadvantage the stock. However, the court noted that "the [MMPA] may not prohibit issuance of a permit where there is only a very remote possibility that marine mammals for which an optimum sustainable population has not been determined may be taken incidental to commercial fishing." *Id.* In the Makah waiver, "there is only a very remote possibility" that a WNP whale may be taken; in contrast to *Kokechik*, where the applicant sought permission to take 450 animals per year, *id.*, the likelihood of a WNP strike is once every 135 years, the likelihood of an unsuccessful harpoon attempt is once every 27 years, and the (overstated) likelihood of a non-lethal approach is that 18 would occur in ten years. Moreover, in this case the evidence provided by the IWC shows that the proposed hunt will not disadvantage the WNP stock because it will not prevent the stock from achieving or maintaining OSP, and, as noted in the text, the Tribe must still obtain any necessary incidental take authorization under § 1371(a)(5)(A) of the MMPA.

whales that may be affected by a Makah hunt are different from the historic western gray whale population, which was the population NMFS retained on the endangered species list in 1994.

Utilizing the results of cutting-edge genomics research, Dr. Bickham testified that the weight of evidence suggests that western gray whales are part of the Eastern Breeding Stock and that the genetic differences with gray whales that feed in the Arctic can be explained as the result of recent isolation and a subsequent founder effect or genetic drift in a small population. *See* Part II.B.3, above. As Dr. Bickham testified, this information is consistent with the best scientific evidence available regarding gray whale stock structure, as developed in IWC's five-year Rangewide Review. Under the two stock structure hypotheses deemed most plausible by the Rangewide Review, whales migrating from Sakhalin Island to North America (and potentially through the Makah U&A) are one or more feeding groups of the Eastern Breeding Stock; in neither hypothesis are they remnants of an historic western gray whale population that migrated exclusively in Asia. Thus, to the extent there is particularized concern about conservation risk to the historic western gray whale, there is substantial evidence that the proposed regulations will have no impact on any members of that population.

E. NMFS Based the Proposed Waiver and Regulations on the Best Scientific Evidence Available.

There is substantial evidence NMFS has exhaustively reviewed, considered and incorporated the available scientific data regarding ENP, WNP, and PCFG gray whales in developing the proposed waiver and regulations. Indeed, an early complaint in this proceeding by the NGO Parties was that the record supporting NMFS's proposal was "voluminous." Decl. of DJ Schubert, May 10, 2019, ¶ 4. In addition to hundreds of scientific papers submitted in this proceeding, NMFS prepared a 1,000-page draft EIS and detailed testimony by four expert scientists regarding the scientific evidence underpinning the proposed waiver and regulations and

how NMFS used that information to develop a comprehensive management scheme to govern the Makah whale hunt. NMFS's testimony is further bolstered by the Tribe's three expert scientists who testified about many aspects of gray whale biology, genetics, and population dynamics. Collectively, this evidence demonstrates that NMFS left no stone unturned in its quest to develop a waiver and regulations supported by the best available science.

Unlike in *American Tunaboat*, no evidence in the record detracts from that which NMFS relied upon. NMFS has not disregarded its own data regarding PBR, as in *Conservation Council*, but rather expressly accounted for the PBR of the ENP stock, which far exceeds the maximum possible take in the Makah hunt. Even though the proposed waiver does not apply to the WNP, NMFS noted the current PBR of that stock is 0.12 whales, or one whale approximately every eight years, which, again, far exceeds the anticipated take in the Makah hunt (one whale every 135 years). Bettridge 2nd Decl. ¶ 7. NMFS also thoroughly explained the rationale for declining to rely on PBR to establish protective measures for the PCFG. *See* 84 Fed. Reg. at 13609; Tr. V2 (Moore) at 125:16 – 127:18; NMFS Ex. 1-15 at 1-2 (MMC concurring in NMFS's rationale).

NMFS has considered rigorous, large-scale studies of gray whale distribution, abundance, behavior, genetics and population dynamics, and neither the NGO Parties nor any other party have provided "any better available data." *Friends of Endangered Species*, 760 F.2d at 985. Rather, the NGO Parties ground their arguments on remaining alleged uncertainties regarding gray whales and climate change. *See* Schubert Decl. ¶¶ 26, 78; Schubert Rebuttal Decl. ¶¶ 11, 15; Schubert UME Rebuttal Decl. ¶¶ 6-8. But as courts have clearly and consistently articulated, the best available science standard demands neither definitively "conclusive" data, *Northwest Ecosystem Alliance v. FWS*, 475 F.3d 1136, 1147 (9th Cir. 2007), nor "'the best scientific data possible.'" *San Luis*, 747 F.3d at 602 (quoting *Building Indus. Ass'n*, 247 F.3d at 1246).

Instead, the best available science standard requires consideration of "all scientific data currently available," which NMFS has done. *Inland Empire*, 88 F.3d at 762. Accordingly, substantial evidence demonstrates that NMFS relied on the best scientific evidence available for each aspect of the proposed waiver and regulations as the MMPA requires.

F. NMFS Consulted with the Marine Mammal Commission.

As discussed in Part III.B above, NMFS consulted on multiple occasions with the Marine Mammal Commission in the lengthy process of developing the proposed waiver and regulations. That consultation was far from a *pro forma* exercise. Rather, NMFS shaped its proposal to address the MMC's principal concerns of minimizing and balancing impacts to the WNP stock and PCFG gray whales. During the consultation, the MMC commented favorably on NMFS's draft proposal and indicated its assessment that "the draft regulations are based on the best available science concerning gray whales and are appropriately precautionary" and that NMFS had made a *prima facie* case that the requirements of the MMPA had been met. NMFS Ex. 1-8 at 1. The MMC presented no evidence to the contrary in this proceeding. Dr. Tillman was the MMC's sole witness and his written rebuttal testimony exclusively addressed the history of IWC's management of the gray whale ASW hunts by the Makah Tribe and the Chukotka Natives; he identified no concerns about whether the waiver and regulations are based on the best scientific evidence available or otherwise satisfy the applicable requirements of the MMPA.

G. NMFS's Motion to Modify the Proposed Regulations Should be Granted.

On October 28, 2019, NMFS filed a motion requesting revisions to the proposed regulations. The revisions involve modifying the restrictions on sharing edible whale products outside of the Makah Reservation, clarifying that multiple strikes on the same whale count as a

single strike for purposes of the applicable strike limits, clarifying other provisions, and making other changes for consistency.

The Tribe supports all the requested modifications. Mr. Arnold testified about the problem the original proposed regulations created for Makah members in providing for their families and sharing whale meat and blubber with guests at off-reservation residences, and how this was a violation of a core purpose of the treaty right. Arnold Decl. ¶ 20; Tr. V3 at 9:23 – 10:22; *see also* Tr. V1 (Yates) at 42:4 – 44:24. NMFS's modifications adequately resolve the Tribe's concerns. *See* Mot. Requesting Rev'ns to Prop. Regs., Oct. 28, 2019, Att. A at 11, 16-17. Additionally, modification of the strike accounting provision would make the regulations consistent with NMFS's intent and the treatment of multiple strikes on the same whale as a single strike by the IWC and the Scientific Committee. Scordino Rebuttal Decl. at 6-8. Accordingly, substantial evidence supports the requested modifications and the presiding officer should endorse them in the recommended decision.

H. Miscellaneous Issues.

1. The Effect of Climate Change on Gray Whales Is Uncertain and Does Not Warrant Delaying or Denying the Waiver.

NMFS thoroughly considered the potential impact of climate change on gray whales in the context of the proposed hunt. Yates 3rd Decl. ¶ 11 (citing documents). Despite uncertainty as to such impacts, NMFS was justified in determining that the proposed waiver and regulations were scientifically supportable and that it was appropriate to consider future information on climate change through the adaptive mechanisms included in the waiver.

The best available science indicates that the Arctic environment has been undergoing change for decades and that climate change is poorly understood across the sciences. Tr. V2 (Weller) at 28:18-21, 29:12-17. Mr. Scordino testified that climate change may have beneficial

impacts on gray whales by decreasing sea ice and opening new areas for foraging as well as negative impacts in terms of decreased productivity and greater competition with other species. Scordino Decl. at 89. Climate change will also affect foraging in the PCFG range. *Id.* at 89-90. Overall, the impact of climate change on gray whales is uncertain – it could be negative, positive or neutral, and research will continue to better understand these impacts. *Id.* at 90; Tr. V3 (Scordino) at 65:14-24. Under any of these scenarios, gray whale flexibility in foraging is likely to mitigate adverse impacts to prey availability. Scordino Decl. at 90.

Mr. Schubert's testimony sought to emphasize the uncertainty and risk that climate change poses to gray whales by characterizing ocean warming as a significant threat to the Arctic environment and the benthic food source of gray whales. *See, e.g.* Schubert Decl. ¶¶ 26-29; Schubert Rebuttal Decl. ¶¶ 9-11. Mr. Schubert also tried to single out climate change as a leading cause of the 1999-2000 gray whale UME even though the expert review of that UME could not determine a cause. Schubert Decl. ¶ 24; Brandon UME Decl. at 3. Claiming that the carrying capacity of gray whales has declined over the past two decades, Mr. Schubert, who has never conducted research on gray whales or climate change but rather is a self-declared expert on these topics because he has "read a fair amount of the literature," Tr. V4 at 45:25 – 46-14, testified that "the spikes in gray whale mortality are most likely tied to changing ecosystem conditions in their summer feeding areas linked to climate change." Schubert Decl. ¶ 26. However, Mr. Schubert's testimony regarding climate change focused only on one side of the issue. *See* Scordino Rebuttal Decl. at 11-12. In discussing the effects of ocean warming, Mr. Schubert failed to mention recent increases in gray whale calf production and the ENP

population as a whole that expert scientists testified were important caveats in assessing how climate change may affect gray whales.[37] *See*, *e.g.*, Tr. V2 (Weller) at 29:12-24.

Mr. Schubert especially lacks credibility on the issue of climate change and gray whale impacts because of his history of using climate change in his (and AWI's) decades-long opposition to Makah whaling. Almost 20 years ago, Mr. Schubert drafted a petition to re-list the ENP gray whale stock under the ESA. Schubert Cross Ex. M-03; Tr. V4 (Schubert) at 80:6 – 81:20. At the time, the ENP stock had just experienced the 1999-2000 UME, and NMFS's formal review had not yet concluded. Nonetheless, the petition, which Mr. Schubert failed to mention in his testimony, was full of dire predictions tied to climate change, including a claim that "[b]ecause [of] the massive changes to the Bering and Chukchi Sea ecosystems primarily attributable to global warming, the gray whale population will continue to decline." Schubert Cross Ex. M-03 at PDF 2. And, after linking the petition to a request to delay analysis of the Tribe's hunt, he urged that "[f]ailure to provide the protection of the ESA to the gray whale will decimate the population." *Id.*at PDF 2, 50. Notwithstanding ongoing changes in the Arctic, no such decline occurred; instead, abundance increased to the highest level on record.

The Tribe agrees that climate change is affecting the Arctic and the ecosystems on which gray whales depend. However, a fair reading of the scientific information currently available indicates that the impact of these changes on gray whales is mixed, and recent population growth and high calf production suggest it may be beneficial (or at least that it may not be adverse). Despite Mr. Schubert's advocacy for delay, the waiver should not be held up because of this uncertainty. *See* Sordino Decl. at 98-99.

[37] Mr. Schubert did acknowledge that the Arctic environment has been changing for decades, Tr. V4 at 88:3-7, but this only undermines his argument that climate change has exclusively negative impacts on gray whales given the concurrent *increase* in gray whale abundance.

2. The Waiver Process Has Complied with Applicable Procedural Requirements and Afforded All Parties Due Process.

From the initial Federal Register notices, the NGO Parties have sought to delay these proceedings repeatedly for a variety of purported reasons.[38] While the presiding officer denied the initial motion to modify the hearing schedule, the request to move the hearing from its original start date of August 12 was granted. Scheduling conflicts involving participants and the venue led to a three-month delay in the hearing, *see* July 24, 2019 Tr. at 2:22 – 3:15, 6:19 – 7:3, 16:8-12, which is far more than the one month delay that the NGO Parties had requested and which they asserted would be necessary in the interest of fairness. AWI Request to Move Hrg. Date, June 24, 2019, at 6; SS Request to Move Hrg. Date, June 24, 2019, at 5-6.

The NGO Parties have not claimed that any provision of NMFS's hearing regulations has been violated. Indeed, the presiding officer has made substantial efforts to accommodate the NGO Parties and their attorneys and representatives in this proceeding, including by continuing the hearing for three months and allocating time at the hearing under an agreed hearing management plan. The hearing took place 224 days after the Federal Register notice, almost four times the 60-day minimum period. 50 C.F.R. § 228.4(b)(2). Another significant deadline – the due date for rebuttal and UME-related testimony – was also pushed back four weeks after the presiding officer continued the August 12 hearing date.[39] In the presiding officer's Order re

[38] The reasons have included the desire for more time to review the substantial scientific record supporting the proposed waiver and regulations, difficulty in identifying and working with potential witnesses due to a conflict with the IWC Scientific Committee meeting, conflict with a rescheduled and unrelated international meeting that three hearing participants had planned to attend, and uncertainty related to climate change and the current UME.

[39] *See* Partial Stip. Re: Ext. of Pre-Hearing Dates, July 9, 2019. This extension was particularly significant because the vast majority of the NGO Parties' written testimony was submitted as rebuttal to NMFS's initial written direct testimony, which had been filed on April 5. In essence, the NGO Parties had four months to find witnesses and prepare written testimony on every issue germane to the evidence NMFS submitted in support of the proposed waiver and regulations, *i.e.*, every issue in this proceeding.

Motions in Limine issued Oct. 9, 2019, very little testimony was excluded, and no additional testimony was excluded at the hearing itself.[40]

At the hearing, AWI continued to assert that it had insufficient time to prepare testimony and identify witnesses. Tr. V4 (Schubert) at 19:1-21, 21:11-17, 104:4-10; *see also* Tr. V6 at 10:16-22 (AWI attorney re same). This claim is without merit for several reasons that have become apparent after the initial request for a delay on the same grounds. First, AWI submitted extensive and detailed testimony in four declarations both at the May 20, 2019 initial written testimony deadline and the extended deadline for rebuttal and UME-related testimony. Second, AWI failed to utilize its in-house cetacean scientist, Dr. Naomi Rose, for any testimony in this proceeding after implying that she intended to participate in AWI's preparation of comments and testimony if the May 20 deadline were extended beyond June 17. Rose Decl., May 10, 2019, ¶ 10. Although Dr. Rose is more qualified to testify about cetaceans than Mr. Schubert,[41] she did not submit any testimony in this proceeding even though the rebuttal testimony deadline was extended to August 6. Tr. V4 (Schubert) at 67:7 – 68:13. Third, Mr. Schubert, who was AWI's sole witness, could not identify any additional relevant issues he would have raised with more time to prepare testimony. Rather, he testified that he would have provided more information about topics already included in his testimony or about topics that are not germane to the MMPA's requirements for a waiver and regulations. Tr. V4 at 42:9 – 43:1.

Finally, Mr. Schubert testified that he: 1) is well-versed in the gray whale scientific literature, particularly the work of the IWC Scientific Committee related to ASW hunts; 2) typically reviews Scientific Committee reports related to ASW hunts and gray whales; 3) did

[40] Although the presiding officer had denied NMFS's motion to exclude the initial written direct testimony of Sea Shepherd attorney Brett Sommermeyer, Sea Shepherd voluntarily withdrew it shortly before the hearing.
[41] Like Mr. Schubert, Dr. Rose's credibility on this subject is diminished by her career of advocacy for AWI and other NGOs against the Makah Tribe's effort to resume treaty whaling. *See* Rose Decl., May 5, 2019, ¶ 6.

review the report of the Fifth Rangewide Review workshop; and 4) was actively involved in opposing the Makah hunt at the 2018 IWC meeting. *See* Tr. V4 (Schubert) at 43:11-23, 48:9-23, 61:8 – 64:11, 71:21 – 73:24. This is significant because NMFS presented its proposed hunt plan to the Fifth Rangewide Review workshop, and it was reviewed and approved at the 2018 IWC meeting. *See* NMFS Ex. 3-39 at 35 (Fifth Rangewide Review report, Appendix 1 re Makah hunt); Decl. of Patrick DePoe, May 15, 2019, Ex. 2 at 6 (2018 Description of the Hunt). Thus, Mr. Schubert had access to reasonably detailed information about NMFS's proposed management plan well before the April 2019 notice and took no action to comprehend that information or investigate it further. Similarly, despite publicly available information since the release of the 2015 Draft EIS, Mr. Schubert never submitted a FOIA request regarding NMFS's waiver review process until after the Federal Register notice was published. Tr. V4 at 75:7-11.

NMFS and the presiding officer have complied with all due process requirements for formal rulemaking – including allowing parties to present evidence (and rebuttal evidence) and cross-examine witnesses – in this proceeding. *See* Part IV.C above. The NGO Parties took full advantage of these protections by submitting written testimony (both direct and rebuttal) and conducting cross examinations of the witnesses during the hearing through their lay representatives and/or counsel. In sum, the presiding officer has conducted a fair and transparent process under NMFS's hearing regulations and the APA, and the NGO Parties have fully availed themselves of the opportunities to participate meaningfully before, during, and after the hearing.

The NGO Parties' opposition to any whaling by the Makah Tribe has been clear from the beginning of this process, and they used the hearing to emphasize that opposition, for example by stating for the record that Sea Shepherd does not condone the killing of whales by anyone, anywhere, or anytime. Nevertheless, their opposition on the merits of the waiver does not

provide a basis for impugning the fairness and legitimacy of the legally sound process in which they have chosen to participate and had a full and fair opportunity to do so.

VI. CONCLUSION

Based on the record as a whole, substantial evidence demonstrates that: (a) NMFS's proposed waiver and regulations would authorize the Tribe to conduct a limited ceremonial and subsistence hunt under the 1855 Treaty of Neah Bay and realize the extensive benefits that whaling and the use of whale products have always provided to the Makah people and which have been integral to their culture, subsistence, and identity; (b) the numerous safeguards for ENP, PCFG, and WNP gray whales in the proposed regulations will ensure, based on the best scientific evidence available and consistent with the policies and purposes of the MMPA, that these whales will remain a significant functioning element of their ecosystem; (c) the ENP stock will not be discernibly affected by the Makah hunt relative to its OSP level; and (d) all other applicable requirements of the MMPA have been satisfied. Accordingly, the Makah Tribe respectfully requests that the presiding officer prepare a recommended decision making these findings and conclusions and recommending that NMFS approve the proposed waiver and regulations, as modified by NMFS's October 28, 2019 motion.

Respectfully submitted this 20th day of March, 2020.

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Appendix A
Index of Written Testimony

Filing Date	Full Document Title	Abbreviated Citation Title
4/5/2019	NMFS Initial Direct Testimony - Declaration of Chris Yates	Yates Decl.
4/5/2019	NMFS Initial Direct Testimony - Declaration of Dr. Shannon Bettridge	Bettridge Decl.
4/5/2019	NMFS Initial Direct Testimony - Declaration of Dr. David Weller	Weller Decl.
4/5/2019	NMFS Initial Direct Testimony - Declaration of Dr. Jeffrey Moore	Moore Decl.
5/20/2019	Makah Initial Direct Testimony - Declaration of Jonathan Scordino	Scordino Decl.
5/20/2019	Makah Initial Direct Testimony - Declaration of John W. Bickham	Bickham Decl.
5/20/2019	Makah Initial Direct Testimony - Declaration of John R. Brandon	Brandon Decl.
5/20/2019	Makah Initial Direct Testimony - Declaration of Joshua L. Reid	Reid Decl.
5/20/2019	Makah Initial Direct Testimony - Declaration of Greig Arnold	Arnold Decl.
5/20/2019	Makah Initial Direct Testimony - Declaration of Daniel J. Greene, Sr.	Greene Decl.
5/20/2019	Makah Initial Direct Testimony - Declaration of Maria Pascua	Pascua Decl.
5/20/2019	Makah Initial Direct Testimony - Declaration of Polly DeBari	DeBari Decl.
5/20/2019	AWI Initial Direct Testimony – D.J. Schubert	Schubert Decl.
5/20/2019	Sea Shepherd Initial Direct Testimony – Declaration of Brett Sommermeyer	Sommermeyer Decl.

Filing Date	Full Document Title	Abbreviated Citation Title
5/20/2019	PCPW Initial Direct Testimony – Declaration of Margaret Owens	Owens Decl.
8/6/2019	NMFS Rebuttal Testimony – Third Decl. of Chris Yates	Yates 3rd Decl.
8/6/2019	NMFS Rebuttal Testimony – Second Declaration of Dr. Shannon Bettridge	Bettridge 2nd Decl.
8/6/2019	NMFS Rebuttal Testimony – Second Decl. of Dr. David Weller	Weller 2nd Decl.
8/6/2019	NMFS Rebuttal Testimony – Second Decl. of Dr. Jeffrey Moore	Moore 2nd Decl.
8/6/2019	Makah Rebuttal Testimony – Declaration of Jonathan Scordino Re Rebuttal Testimony	Scordino Rebuttal Decl.
8/6/2019	AWI Rebuttal Testimony – Rebuttal Testimony of Donald J. ("DJ") Schubert	Schubert Rebuttal Decl.
8/6/2019	Sea Shepherd Rebuttal Testimony – Declaration of Stella Villegas-Amtmann, Ph.D.	Villegas-Amtmann Rebuttal Decl.
8/6/2019	Sea Shepherd Rebuttal Testimony – Declaration of Carrie Newell	Newell Rebuttal Decl.
8/6/2019	PCPW Rebuttal Testimony – Rebuttal to the Declaration of J. Scordino, PCPW Submitted by Margaret Owens	Owens Rebuttal Decl. re Scordino
8/6/2019	PCPW Rebuttal Testimony – Declaration of PCPW, Rebuttal to the Declaration of Chris Yates, NMFS Submitted by Margaret Owens	Owens Rebuttal Decl. re Yates
8/6/2019	Marine Mammal Commission Rebuttal Testimony – Declaration of Dr. Michael F. Tillman	Tillman Rebuttal Decl.
8/6/2019	NMFS Initial Direct Testimony re Unusual Mortality Event (UME) – Fourth Declaration of Chris Yates	Yates 4th Decl.

Filing Date	Full Document Title	Abbreviated Citation Title
8/6/2019	NMFS Initial Direct Testimony re Unusual Mortality Event (UME) – Third Declaration of Dr. Shannon Bettridge	Bettridge 3rd Decl.
8/6/2019	Makah Initial Direct Testimony re UME – Declaration of John R. Brandon re Testimony on ENP Gray Whale Unusual Mortality Events	Brandon UME Decl.
8/6/2019	AWI Initial Direct Testimony re UME – Declaration of D.J. Schubert	Schubert UME Decl.
9/11/2019	NMFS Rebuttal Testimony on Unusual Mortality Event – Third Declaration of Dr. David Weller	Weller 3rd Decl.
9/11/2019	NMFS Rebuttal Testimony on Unusual Mortality Event – Fifth Declaration of Chris Yates	Yates 5th Decl.
9/11/2019	AWI Rebuttal Testimony in Response to Direct Testimony – Rebuttal Testimony of Donald J. ("DJ") Schubert	Schubert UME Rebuttal Decl.

Appendix B
Index of Exhibits Cited

Exhibit Number	Full Exhibit Title
Makah Tribe Exhibits	
Ex. M-0022	Blohkin, S. A., M. K. Maminov, and G. M. Kosygin. 1985. On the Korean-Okhotsk population of gray whales. Rep. Int. Whal. Comm. 35:375–376.
Ex. M-0047	Calambokidis, J., J. D. Darling, V. Deecke, P. Gearin, M. Gosho, W. Megill, C. M. Tombach, D. Goley, C. Toropova, and B. Gisborne. 2002a. Abundance, range and movements of a feeding aggregation of gray whales (Eschrichtius robustus) from California to southeastern Alaska in 1998. Journal of Cetacean Research and Management 4(3):267–276.
Ex. M-0053	Calambokidis, J., J. Laake, 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 Scientific Committee of International Whaling Commission.
Ex. M-0056	Calambokidis, J., and A. Perez. 2017a. Sightings and followup of mothers and calves in the PCFG and implications for internal recruitment. Paper SC/A17/GW/04 Presented to International Whaling Commission Scientific Committee
Ex. M-0057	Calambokidis, J., and A. Perez. 2017b. Association of PCFG gray whales on migration. Paper SC/A17/GW/02 Presented to the Scientific Committee of the International Whaling Commission
Ex. M-0058	Calambokidis, J., J. Quan, L. Schlender, M. Gosho, and P. Gearin. 1999. Gray whale photographic identification in 1998. Final Report to the National Marine Mammal Laboratory.
Ex. M-0150	International Whaling Commission. 2014b. Report of the Workshop on the Rangewide Review of the Population Structure and Status of North Pacific Gray Whales. Paper SC/65b/Rep08 presented to the Scientific Committee of the International Whaling Commission:1–49.
Ex. M-0171	Lagerquist, B. A., D. M. Palacios, M. H. Winsor, L. M. Irvine, T. M. Follett, and B. R. Mate. 2019. Feeding home ranges of Pacific coast feeding group gray whales. The Journal of Wildlife Management.

Exhibit Number	Full Exhibit Title
Ex. M-0176	Lang, A. R., and K. K. Martien. 2012. Update on the use of a simulation-based approach to evaluate plausible levels of recruitment into the Pacific Coast Feeding Group of gray whales. Paper SC/64/AWMP4 presented to the International Whaling Commission Scientific Committee.
Ex. M-0186	Makah Tribal Council. 2015. Makah training programme - draft. Paper NAMMCO/EG-TTD/Doc 16 presented to the North Atlantic Marine Mammal Commission.
Ex. M-0218	National Marine Fisheries Service. 2016. Guidelines for preparing stock assessment reports pursuant to section 117 of the Marine Mammal Protection Act. National Marine Fisheries Service Instruction 02-204-01.
Ex. M-0262	Scordino, J. J., M. Gosho, P. J. Gearin, A. Akmajian, J. Calambokidis, and N. Wright. 2017b. Individual gray whale use of coastal watersoff northwest Washington during the feeding season 1984 – 2011: Implications for management. Journal of Cetacean Research and Management 16:57–69.
Ex. M-0311	Ilyashenko 2018. Needs of Chukotka indigenous people in Gray whale harvest products and rationale for updates to the paragraph 13(b)(2) of the Schedule (the Gray whale catch limit) SC/67B/AWMP/17
Ex. M-0411	Brüniche-Olsen, A., J. Urban R., V. V. Vertyankin, C. GodardCodding, J. W. Bickham, and J. A. DeWoody. 2018a. Genetic data reveal mixed-stock aggregations of gray whales in the North Pacific Ocean. Biology Letters 14: 20180399. http://dx.doi.org/10.1098/rsbl.2018.0399
Ex. M-0568	IWC. 2019b. Report of the Scientific Committee. Annex E. Report of the Standing Working Group on Aboriginal Subsistence Whaling Management Procedure (AWMP). J Cetacean Res. Manage. Suppl (20): 120-182.
Ex. M-0601	Treaty with the Makah, 1855. Jan. 31, 1855. 12 Stat., 939. Ratified Mar. 8, 1859. Proclaimed Apr. 18, 1859.
Ex. M-0603	Makah Whaling Ordinance. Adopted by Makah Tribal Council August 13, 2013.

Exhibit Number	Full Exhibit Title
SCHUBERT CROSS Ex. M-03	Petition for the Listing of the Gray Whale (Eschrichtius Robustus) Under the Endangered Species Act Submitted on behalf of Australians for Animals, The Fund for Animals. 2001.
NMFS Exhibits	
NMFS Ex. 1-6	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.
NMFS Ex. 1-7	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.
NMFS Ex. 1-8	First response letter (7-11-17) from R. Lent (MMC) to B. Thom (NMFS) re: consultation on proposed waiver and regulations.
NMFS Ex. 1-9	NMFS 2019b. NMFS Protocol for Identifying Gray Whales Encountered in Makah Hunts. NMFS WCR Protected Resources Division Report. March 2019.
NMFS Ex. 1-10	First letter (5-12-17) from R. Lent (MMC) re: consultation on proposed waiver and regulations.
NMFS Ex. 1-11	MMC comments (7-31-2015) from R. Lent (MMC) to W. Stelle (NMFS) re: 2015 DEIS
NMFS Ex. 1-12	NMFS 2018. NMFS Protocol for Monitoring Makah Gray Whale Hunts. NMFS WCR Protocol Resources Division Report. December 2018.
NMFS Ex. 1-13	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 moratorium on take of eastern North Pacific gray whales
NMFS Ex. 1-14	Second letter (12-19-17) from B. Thom (NMFS) to R. Lent (MMC) re: consultation on proposed waiver and regulation.
NMFS Ex. 1-15	Second response letter (3-13-18) from P. Thomas (MMC) to B. Thom (NMFS) re: consultation on proposed waiver and regulations

Exhibit Number	Full Exhibit Title
NMFS Ex. 2-12	Carretta, J., and 15 co-authors. 2019. U.S. Pacific Marine Mammal Stock Assessments: 2018. NOAA-TM-NMFS SWFSC-617.
NMFS Ex. 2-13	Cooke, J.G. 2017. Updated assessment of the Sakhalin gray whale population and its relationship to gray whales in other areas. Western Gray Whale Advisory Panel, 18th Meeting. November 15-17, 2017. WGWAP-18/24.
NMFS Ex. 2-14	Gulland, F.M.D. 2006. Review of the Marine Mammal Unusual Mortality Event Response Program of the National Marine Fisheries Service. NOAA-TM-NMFS-OPR-33. September 2006.
NMFS Ex. 3-2	Weller, D. W., and 7 co-authors. 2013. Report of the National Marine Fisheries Service gray whale stock identification workshop. March 2013. NOAA Technical memorandum NOAA-TM-NMFS-SWFSC507.
NMFS Ex. 3-3	IWC. 2018a. International Convention for the regulation of Whaling, 1946. Schedule. As amended by the Commission at the 67th Meeting, Florianopolis, Brazil, September 2018.
NMFS Ex. 3-4	Fominykh, I.B. and R. Wulff. 2018. Monitoring in 2019 by the Russian Federation and the United States of the Aboriginal Subsistence Quota for Gray Whales Set by the International Whaling Commission. Agreement signed November 28, 2018 and December 7, 2018.
NMFS Ex. 3-5	Fominykh, I.B. and R. Wulff. 2017. Addendum to monitoring in 2017 by the Russian Federation and the United States of the Aboriginal Quota for Gray Whales Set by the International Whaling Commission. Agreement signed December 20 and 21, 2017.
NMFS Ex. 3-6	Fominykh, I.B. and R.F. Smith III. 2016. Addendum to monitoring by the Russian Federation and the United States of the aboriginal quota for gray whales set by the International Whaling Commission. Signed March 9, 2016, and February 29, 2016
NMFS Ex. 3-7	Ilyashenko, V. and D. DeMaster. 2012. Addendum to monitoring in 2012 by the Russian Federation and the United States of the Aboriginal Quota for Gray Whales Set by the International Whaling Commission. Agreement signed July 6, 2012.

Exhibit Number	Full Exhibit Title
NMFS Ex. 3-8	Ilyashenko, V. and D. DeMaster. 2007. Addendum to monitoring in 2007 by the Russian Federation and the United States of the Aboriginal Quota for Gray Whales Set by the International Whaling Commission. Agreement signed May 20, 2007.
NMFS Ex. 3-39	IWC. 2018. Report of the Fifth Rangewide Workshop on the Status of North Pacific Gray Whales. Report SC/67B/REP/07 Rev1.
NMFS Ex. 3-42	Durban, J.W., D.W. Weller, and W.L. Perryman. 2017. Gray whale abundance estimates from shore-based counts off California in 2014/15 and 2015/16. Paper SC/A17/GW/06 presented to the International Whaling Commission Scientific Committee.
NMFS Ex. 3-43	IWC. 2018b. Report of the Scientific Committee Bled, Slovenia, 24 April-6 May 2018. IWC/67/Rep01(2018).
NMFS Ex. 3-87	IWC 2019. Aboriginal subsistence whaling catches since 1995. Available online: https://iwc.int/table_aboriginalcite. Last accessed July 31, 2019.
NMFS Ex. 3-89	Cooke, J.G., Taylor, B.L. Reeves, R. and Brownell Jr., R.L. 2018. Eschrichtius robustus (western subpopulation). The IUCN Red List of Threatened Species 2018.
NMFS Ex. 3-101	Calambokidis et al 2019. Updated analysis of abundance and population structure of seasonal gray whales in the Pacific Northwest, 1996-2017
NMFS Ex. 4-14	Cooke, J.G., O. Sychenko, A.M. Burdin, D.W. Weller, A.L. Bradford, A.R. Lang, and R.L. Brownell, Jr. 2019. Population assessment update for Sakhalin gray whales. Paper SC/68A/CMP/WP/07 presented to the International Whaling Commission Scientific Committee.
NMFS Ex. 4-15	Moore, J.E. and D.W. Weller. 2019. Memorandum from Jeff Moore (NMFS- SWFSC) to Chris Yates (NMFS-WCR/PRD) dated July 3, 2019, with attached draft NOAA Technical Memorandum titled "Estimates of the probability of striking a western North Pacific gray whale during the proposed Makah hunt: 2019."
ALJ Exhibits	
ALJ Ex. 002	Proposed Rule 84 FR 13604
ALJ Ex. 005	Final Hearing Agenda 84 FR 5936

Exhibit Number	Full Exhibit Title
ALJ Ex. 006	Draft Environmental Impact Statement on the Makah Tribe Request to Hunt Gray Whales (February 2015)
ALJ Ex. 008	NMFS West Coast Region's Draft Responses to Comments on the 2015 Draft Environmental Impact Statement on the Makah Tribe Request to Hunt Gray Whales (November 2019)
ALJ Ex. 009	NMFS West Coast Region's Draft Responses to Frequent Comments on the 2015 Draft Environmental Impact Statement on the Makah Tribe Request to Hunt Gray Whales (November 2019)
NGO Parties Exhibits	
Schubert Decl. Ex. 1	Comments of the Animal Welfare Institute, Cetacean Society International, International Marine Mammal Project of Earth Island Institute, Origami Whales Project, Whale and Dolphin Conservation, and the Whaleman Foundation in response to the 2015 Draft Environmental Impact Statement (DEIS) on the Makah Tribe Request to Hunt Gray Whales.
Ex. SVA-3	Villegas-Amtmann, S., Schwarz L.K., Sumich, J.L., Costa, D.P. (2015). A bioenergetics model to evaluate demographic consequences of disturbance in marine mammals applied to gray whales. Ecosphere 6(10): 183
Scordino Cross Ex. SS-02	Total Catches, International Whaling Commission, https://iwc.int/total-catches
Ex. CN-1	Curriculum Vitae of Carrie Newell
Ex. CN 5	Newell, C. A Guide to Summer Resident Gray Whales along the Oregon Coast (2013)