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
	)

DECLARATION OF JONATHAN SCORDINO RE REBUTTAL TESTIMONY

I, Jonathan Scordino, declare as follows:

1. I am employed by the Makah Tribe as a marine mammal biologist and have worked for the Tribe in this capacity since 2007. In this position, I conduct scientific research on gray whales and other marine mammals, direct the Tribe's Marine Mammal Program, and provide scientific advice to the Tribe to support its efforts to obtain a waiver from NMFS under the Marine Mammal Protection Act (MMPA) and resume hunting gray whales under the 1855 Treaty of Neah Bay. My work address is Makah Fisheries Management Department, P.O. Box 115, Neah Bay, WA 98357.

2. I previously submitted a declaration and attached report and supporting exhibits as my initial direct testimony for the hearing, Dkt. No. 31, and hereby incorporate them by reference.

3. Pursuant to 50 C.F.R. § 228.14(a), the Notice of Hearing and Final Agenda, 84 Fed. Reg. 30088 (June 26, 2019), and the Presiding Officer's July 9, 2019, order granting the expedited motion to extend filing dates (Dkt. No. ___), I prepared and hereby incorporate the attached report and supporting exhibits as my written direct testimony to rebut testimony previously submitted in this matter.

4. The attached report includes: (1) expert opinions developed through my

education, experience, research and knowledge of gray whales (including gray whale abundance, surveys, photo-identification matching, and behavior within the Makah Tribe's usual and accustomed (U&A) area), cetaceans in general, and marine mammal biology; and (2) testimony based on my personal knowledge. My qualifications to testify as an expert are described in further detail in Section II of the report attached to my previous declaration. *See* Initial Direct Testimony of Jonathan Scordino at 10-13 (Dkt. No. 31).

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

Jonathan Scordino

Dated: 29 July 2019

Rebuttal Testimony of Jonathan Scordino

I. Rebuttal of Margaret Owens.

My rebuttal of the testimony of Margaret Owens (Dkt. No. 37) focusses on information presented by Ms. Owens on whales utilizing the Makah U&A. Ms. Owens misinterprets the information in NMFS's 2015 draft EIS regarding the number and characteristics of gray whales that utilize the Makah U&A area and does not include the most recent data from scientific papers published in 2017.

Ms. Owens contends that NMFS reported in the 2015 draft EIS that 33 PCFG whales are faithful to the Makah U&A and that the number of whales has been fairly stable for a number of years (Paragraph 4, lines 1-2). Ms. Owens cites the draft EIS as her source, but the draft EIS shows that 77 living PCFG whales have utilized the Makah U&A. The 33 PCFG whales to which Ms. Owens refers is the average number of unique whales that were photo-identified in the Makah U&A in a single year. Because all whales utilizing the Makah U&A in a given year are not photo-identified, and because different PCFG whales utilize the Makah U&A in different years, the total number of living PCFG whales that have utilized the Makah U&A is more than Ms. Owens claims. The most current estimate is 105 whales, or more than three times Ms. Owens's figure.

On page 3-155, lines 1-23, of the draft EIS (National Marine Fisheries Service 2015), NMFS summarized the state of scientific information available at the time on the number of gray whales that have utilized the Makah U&A (Ex. M-0217 (NMFS 2015)). The key points of that analysis are included on lines 14-23:

> The JS1 estimator produced estimates for the Makah U&A that were expectedly lower than PCFG and OR-SVI values and followed an increasing trajectory that was similar to, but flatter than, the trends for PCFG and OR-SVI estimates. The Makah U&A estimates increase from approximately 18 animals in 1996 to 82 animals in 2009, with the most recent estimates being somewhat lower but stable at approximately 77 whales. Minimum population estimates are typically about 18 percent lower than the average estimates, with the most recent (2012) Nmin estimated at 73 animals. For comparison, the most recent photo-identification data on gray whales (Calambokidis et al. 2014) in the Makah U&A from June 1 to November 30 show that *the number of uniquely identified whales sighted in a given year has averaged 33* and ranged from 8 (in 2002) to 75 (in 2008). (emphasis added)

It is clear from the passage that Ms. Owens focused on the lower number of an average of 33 uniquely identified whales seen in the Makah U&A rather than including all of the information provided by NMFS in the draft EIS. NMFS used a mathematical mark-recapture model (the Jolly-Seber 1 or JS1 estimator) to determine that 77 gray whales that had been observed in the Makah U&A were likely still alive in 2015. This estimate was updated using data collected from 1996 through 2015 by Calambokidis et al. (2017) (Ex. M-0053). Calambokidis et al. (2017)

produced a new estimate of **105** PCFG whales (Nmin[1] of 88 PCFG whales) that have utilized the Makah U&A and are alive in the PCFG range today. Ms. Owens's use of the average number of uniquely identified whales sighted in a single year ignores the mark-recapture data from the draft EIS she cited and Calambokidis et al. (2017) (Ex. M-0053), which are the best estimates of the number of whales that have utilized the Makah U&A and remain alive today.

The number of uniquely identified PCFG whales photographed in the Makah U&A in a single year understates the number of unique PCFG whales using the Makah U&A over time for two reasons: (1) given limits on research effort, researchers are unable to photograph every whale that utilizes the Makah U&A in any year; and (2) whales that utilize the Makah U&A in one year may not utilize the Makah U&A in another year. The mathematical mark-recapture model was intended to compensate for these limitations and produce a more reliable estimate of the number of unique PCFG whales that utilize the Makah U&A over time.

There is another problem with Ms. Owens's description of the whales utilizing the Makah U&A. Ms. Owens treats NMFS's statement that an average of 33 uniquely identified PCFG whales has been identified in the Makah U&A each year as representing a "group" of 33 whales that is fairly stable from year to year, and she has created an artful, hand-drawn poster depicting this "group" of whales. Owens Decl. Att. 4. As an initial point, this illustration misrepresents what NMFS meant by the 33-whale statistic, which represented an average number of uniquely identified whales, not the same 33 individuals returning to the Makah U&A every year. I reviewed the sighting histories of the 33 individual whales in Ms. Owens's poster (actually 32 individuals since CRC 178 is listed twice) over a 16-year time period between 1996 through 2011 to evaluate the stability of these individuals' use of the Makah U&A. I found that on average these individuals were observed on 3.6 of the available 16 years of the evaluation period. This provides an illustrative example showing that the whales photographed in the Makah U&A are not the same whales each year.

Ms. Owens's testimony also fails to discuss a highly relevant paper published in 2017 on gray whale use of coastal waters off northwest Washington during the feeding season. Scordino et al. (2017) (Ex. M-0262) provides a much different view of the stability of gray whale use of the Makah U&A than Ms. Owens provides in her testimony. I am aware that this paper was provided to Ms. Owens in draft form through a request she submitted to NMFS for access to a contract report I submitted to the agency as a reporting requirement for a Species Recovery Grant to Tribes. The final, published version of the paper was freely available since the publication is open-access.

Scordino et al. (2017) (Ex. M-0262) report that between 1985 and 2011, **225** different gray whales were photographed utilizing the Makah U&A during the June-November feeding season. An analysis of the sighting histories of all of the individuals revealed that most PCFG whales do not have strong fidelity to the Makah U&A area. This result is supported by the conclusion of Calambokidis et al. (2017) (Ex. M-0053) that gray whales observed in the Makah U&A are commonly observed throughout the PCFG range (Figure 1), showing that the fidelity of these whales is to a much larger region than the Makah U&A or Clallam County. The PCFG whales

[1] Nmin is the minimum population estimate for PCFG gray whales that utilize the Makah U&A which is calculated as the lower 20th percentile of the log-normal distribution of the mark-recapture estimate of 105 animals.

that use the Makah U&A are not 'fairly stable' in that area because they use a much broader area for feeding and only use the Makah U&A at certain times in certain years. As explained in my initial direct testimony, it is my opinion that PCFG whale use of the Makah U&A is a function of prey availability, that is, whales will utilize the area if and when it is most advantageous for them to feed there.

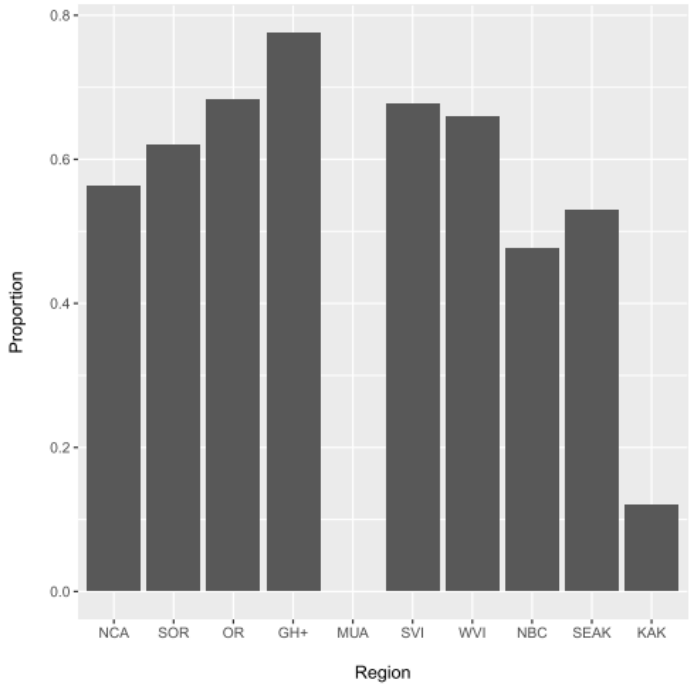

Figure 1: Proportion of whales seen in at least 2 years in sub-regions from northern California (NCA) to Kodiak Island (KAK) that have been seen in the Makah U&A using sightings after 1 June from 1996-2015 (Figure 6 from Calambokidis et al. 2017) (Ex. M-0053).

With further review of the available scientific literature, Ms. Owens would also have realized that NMFS's reported average of 33 whales sighted in a single year was out of date. In an updated analysis, Calambokidis et al. (2017) (Ex. M-0053) (Table 10) report that the average number of unique PCFG whales sighted per year in the Makah U&A was 37 whales during the period 1996-2015.

A third problem with Ms. Owens's description of the whales that utilize the Makah U&A relates to her claim that the "group" of whales that utilize the Makah U&A only includes five known reproductive females (Paragraph 12, lines 9-10). The basis for this claim is unclear; Ms. Owens does not cite a source and her testimony notes that she does not conduct her own research. The actual number of reproductive PCFG females that utilize the Makah U&A is unknown because in some cases we observe calves that are not associated with mothers in the Makah U&A and as such cannot document the identity of the mother (Ex. M-0259 (Scordino et al. 2019a)). Reviewing the list of 68 known reproductive PCFG females (Calambokidis and Perez 2017a) (Ex. M-0056) and comparing it to the list of individuals known to use the Makah U&A from 1996-2011 used in Scordino et al. (2017) (Ex. M-0262) analysis, we find that at least 33 known reproductive PCFG females (48.5% of known reproductive females in the PCFG) have used the

Makah U&A. This analysis is limited to data that has been analyzed for publication, but I am confident that had I included all sighting data the proportion would increase. Regardless, it is clear there are far more than five reproductive PCFG females that utilize the Makah U&A.

In conclusion, I believe that the testimony of Ms. Owens, particularly regarding gray whales that utilize the Makah U&A, is incomplete and inaccurate because it selectively uses information from the draft EIS and fails to address more recent publications of John Calambokidis and myself.

II. Rebuttal of Donald J. Schubert.

My rebuttal of the testimony of Donald J. (DJ) Schubert of the Animal Welfare Institute (Dkt. No. 35) contains four main points.

A. Definition of Strike

The International Whaling Commission (IWC) defines strike as "to penetrate with a weapon used for whaling." (Ex. M-0309 (International Whaling Commission 2018h)). However, the IWC treats multiple strikes on a single whale as a single strike. This is because, for purposes of IWC management and scientific evaluation, when a whale is struck it is assumed to have died. As such, the management and biological consequences of multiple strikes on a single whale are identical to the consequences of a single strike: a dead whale. In essence, what matters in terms of accounting for strikes is the number of whales struck, not whether the same whale has been struck multiple times.

Each year the contracting governments of the IWC that manage hunts report the number of whales struck and the number landed. However, as noted above, the IWC counts multiple strikes on the same whale as a single strike for purposes of catch limit accounting. Consider the Russian Federation's report on the Chukotka Native hunt of gray and bowhead whales in 2013. Ilyashenko and Zharikov (2014) (Ex. M-0134) report that a total of 127 gray whales were struck, with 125 landed whales and 2 struck and lost. They also report one bowhead whale taken. The spreadsheet supplement to this report indicates the "number of shots" for each whale (Ex. M-0307) (Ilyashenko and Zharikov 2014a)). For the 127 gray whales struck in the hunt, the average number of shots for each animal included 10 harpoons, 1 darting gun and 73 carbines (a shortened form of rifle). The IWC's summary of the total number of struck and landed whales from the 2013 aboriginal subsistence hunts based on reports of catches and infractions for that year appears below (Ex. M-0308) (International Whaling Commission 2016a)).

Table 1b. Summary of Aboriginal subsistence catches and infractions reported for the 2013 season.

Country	Species	Males	Females	Total landed	Struck and lost	Total Strikes	Infractions / Comments
Denmark							
West Greenland	Fin	3	5	9[2]	0	9	2 (Infractions 2013.1,3)
	Minke	37	127	166[1]	9	175	1 (Infraction 2013.4)
	Humpback	4	3	7	1	8	1 (Infraction 2013.2)
East Greenland	Minke	1	3	4	2	6	None
St Vincent and The Grenadines							
	Humpback	3	1	4	0	4	None
USA							
	Bowhead	21	25	46	11	57	2 (Infractions 2013.5,6)
Russian Federation							
	Gray	39	86	125	2	127[4]	None
	Bowhead	1	0	1	0	1	None

[1] Includes 2 whale of unknown sex
[2] Includes 1 whale of unknown sex
[3] Includes 8 whales that were inedible due to strong chemical smell
[4] Includes 2 whales that were inedible due to strong chemical smell

Figure 2. Summary of Aboriginal subsistence catches and infractions reported for the 2013 season. This is Figure 1b from International Whaling Commission (2016a) (Ex. M-0308).

Notwithstanding that each whale hunted by the Chukotkans in 2013 was struck on average over 80 times using a variety of weapons, the IWC report indicates that the "Total Strikes" on gray whales by the Chukotka Natives in that year was 127, the same number that Ilyashenko and Zharikov (2014) (Ex. M-0134) reported for the number of gray whales that "were struck." The same reporting and accounting approach was used for the single bowhead whale taken. There, the whale was "shot" by 5 harpoons, 2 darting guns and 100 carbines (Ilyashenko and Zharikov 2014a). Yet the summary table prepared by the IWC still indicates a "total strike" of one bowhead whale. Notably, the IWC did not classify the large number of strikes as an infraction even though the allocated strike limit of seven bowhead whales under the U.S. – Russia bilateral agreement would have been exceeded if each penetration by a weapon of the bowhead whale were counted as a strike (Ex. M-0308 (International Whaling Commission 2016a)).

This example makes clear the IWC's treatment of multiple strikes on the same whale as a single strike for catch accounting purposes even if the hunters took more than a hundred "shots" on an animal. I have focused here on reporting by Russia to the IWC on its aboriginal hunt, but the practice of reporting more than one harpoon and/or bullet penetrating a whale as one strike is also the case for all other aboriginal and commercial hunts managed by the IWC.

When I first read NMFS's proposed regulations and the definition of a strike I assumed that strikes would be treated the same by NMFS as they are by the IWC. For reference, NMFS defines strike as, "Strike or struck means to cause a harpoon or other device to penetrate a gray whale's skin or an instance in which a gray whale's skin is penetrated by a harpoon or other

device while hunting." 84 Fed. Reg. 13619 (April 5, 2019). This is clearly modeled after the IWC's definition of strike. In Mr. Schubert's testimony (paragraphs 61-65), however, he expressed a different interpretation of the definition of strike in the proposed regulations and, in his view, each harpoon or bullet that enters a single whale would count as a separate strike. Although he suggests this may be inconsistent with NMFS's intent, he fails to mention the commonly understood treatment of strikes by the IWC. This should be well known to Mr. Schubert, who, according to his testimony (paragraph 8), "[f]rom 2006 to the present [has] attended each meeting of the International Whaling Commission (IWC) as part of the AWI delegation," including (with the exception of 2006), meetings of the Aboriginal Subsistence Whaling subcommittee.

For reference, the whale successfully hunted by the Makah Tribe in 1999 was shot twice with a .577 caliber rifle and was harpooned three times (Ex. M-0109 (Gosho 1999)). If Mr. Schubert's interpretation of the definition of strike in the proposed regulations were accurate, then the successful and efficient hunt in 1999, which had a time to death of 8 minutes and resulted in landing the whale, would have involved five strikes. Under Mr. Schubert's interpretation, a similar hunt with the same number of penetrations by harpoons and bullets under the proposed regulations would result in exceeding the allowable strikes in both even- and odd-year hunts. A much more sensible interpretation, and one which would be consistent with the longstanding approach of the IWC, would count multiple strikes on the same whale as a single strike for purposes of strike limits under the proposed regulations. Under the more logical and widely accepted approach, all of the concerns raised by Mr. Schubert in this section of his testimony would be addressed.

B. Should Harvest Be Allowed for a Population at Carrying Capacity?

In Mr. Schubert's testimony he states, "If ENP gray whales have met or exceeded the current carrying capacity of their arctic summer feeding areas, then this should be a red flag for NMFS to consider in its analysis of the appropriateness of issuing the requested MMPA waiver (Paragraph 26, lines 9-12)." This statement is inaccurate and misleading. In fact, harvesting animals from a population that is at or above its carrying capacity is a very conservative management strategy that is entirely consistent with the MMPA.

A central concept in harvest management of wild populations (wildlife and fish) is the concept of maximum sustainable yield. Maximum sustainable yield (MSY) occurs when a population has the maximum number of recruits (babies, calves, pups, etc.). The maximum sustainable yield level (MSYL) is the same as the Maximum Net Productivity Level (MNPL) as that term is used in the MMPA. *See* Initial Direct Testimony of John R. Brandon at 14 (Dkt. No. 31). Theoretically, maximum sustainable yield occurs when a population is at about one-half of its carrying capacity because density dependent factors such as food and shelter availability reduce the production of the average individual in the population as the population approaches its carrying capacity (Figure 3).

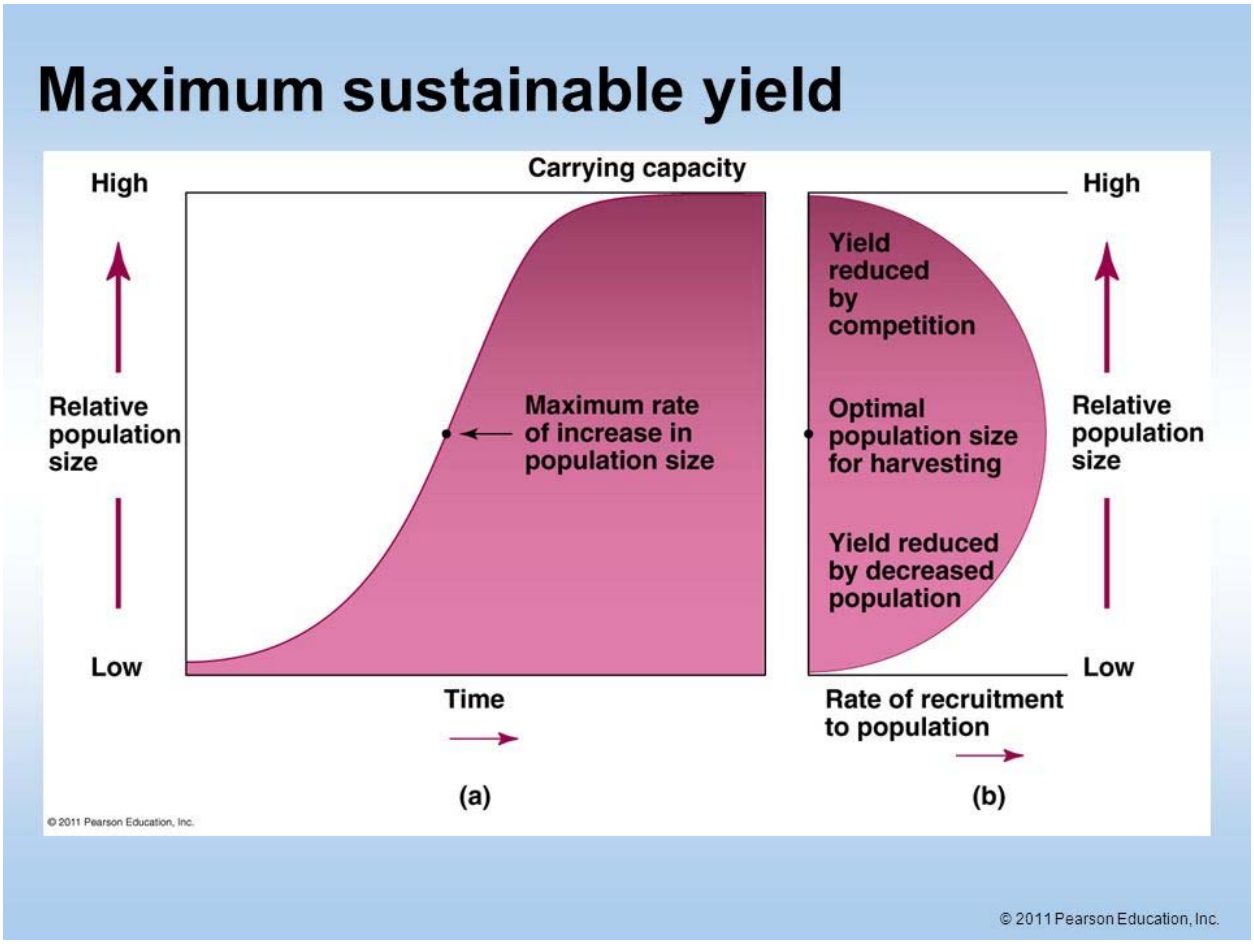

Figure 3: A figure depicting maximum sustainable yield and how harvest affects the utilized population when the removals are at, below, and above the maximum sustainable yield level, which is represented by the mid-point on the y axis (Relative population size). (Figure from http://slideplayer.com/slide/6340701/22/images/22/Maximum+sustainable+yield.jpg)

If the population is above the MSYL, and harvest is less than the number of new recruits expected at that population level, then the population will increase toward carrying capacity until the point that removals are equal to recruits.

Harvest of a small number of individuals while the population is at, or close to, carrying capacity, *i.e.*, much above MSYL, is an extremely risk-averse management strategy provided that removals due to harvest do not decrease the population below MSYL. In the case of the proposed Makah hunt, the harvest alone should not push the population below MSYL because the limited number of removals (an average of 2 per year) would be less than the number of new recruits possible from a population size several orders of magnitude greater.

I am describing harvest management generally to keep the concept simple. However, it should be noted that the results of IWC's implementation review that was completed in 2013 and the recent modeling by the Rangewide Review, both of which include removals from hunting and all other known sources of human caused mortalities, show that the Makah and Chukotkan gray

whale hunts are sustainable, *i.e.*, they will maintain or achieve a population level that is greater than 60% of carrying capacity.

History has also shown that gray whales can be hunted when the population is far below carrying capacity. The ENP gray whale stock has recovered from severe depletion due to unregulated, commercial whaling to the point that the population is now thought to be at or near carrying capacity (Ex. M-0235 (Punt and Wade 2012)). This recovery occurred despite harvest levels greater than one hundred animals annually by aboriginal communities when the population was still depleted and through the recovery period. *See* Aboriginal Subsistence Whaling Catches Since 1985, available at https://iwc.int/table_aboriginal (3,907 gray whales harvested between 1985 and 2017).

C. Use of Genetic Testing to Determine Origin of Hunted Whales.

Mr. Schubert states in paragraph 19 of his testimony that, "[a]bsent genetic testing, there is no way to positively distinguish between members of the three populations/groups." This statement is inaccurate. The best way to determine which of the three populations/groups a whale belongs to is through photo-identification. NMFS has established a detailed protocol to use photos of hunted whales to determine if they are PCFG or WNP[2] whales. *See* NMFS Ex. 1-9 attached to the Declaration of Chris Yates (*NMFS Protocol for Identifying Gray Whales Encountered in Makah Hunts* (Mar. 2019)). It is assumed under NMFS's protocol that if the photograph is of suitable quality for photo-identification, a whale that is not matched to a catalog of PCFG or WNP whales is an ENP whale. Thorough studies using photo-identification of PCFG whales since 1996 and of WNP whales since 1999 have accumulated very large and representative catalogs of whales that utilize these two feeding areas. As I explained in my initial direct testimony at pages 32-35, each gray whale has pigmented areas, knuckle patterns, scarring, and other features that make it uniquely identifiable. Matching the photographs of struck whales to existing catalogs is the best approach to determine which of the three populations/groups a whale belongs to. The one weakness in using photo-identification is that matches cannot be performed for whales that are not in the existing catalogs. This is an issue for whales that are new recruits into the populations/groups and for whales that are members of the populations/groups that have not been photographically documented. However, photographs of the vast majority of PCFG and WNP whales are included within the existing catalogs and continued research efforts will ensure that the catalogs stay up to date.

The hunt observation plan developed by NMFS also requires the collection of genetic material from each harvested whale and from struck and lost whales if skin or other material is still on the whaling gear after the whale is lost. *See* NMFS Ex. 1-12 attached to Yates Decl. (*NMFS Protocol for Monitoring Makah Gray Whale Hunts* (Dec. 2018)). These samples can complement the analysis of photos of the struck whale and if the sample is a genetic match of a previously sampled whale then that whale can be assigned to the population/group of the sampled whale.

[2] I will use "WNP" in my rebuttal testimony to be consistent with Mr. Schubert's comments even though it is more accurate to refer to these whales as Sakhalin whales as I did in my initial direct testimony.

However, it is important to note that genetic samples that do not match to a previously collected sample cannot be used to determine which of the three populations/groups the whale belonged to. The studies of the genetics of PCFG and ENP whales have found that the two groups have the same mitochondrial DNA haplotypes and microsatellite DNA alleles, although the frequency of haplotypes between the groups is slightly different (Ex. M-0103 (Frasier et al. 2011); Ex. M-0080 (D'Intino et al. 2013); Ex. M-0174 (Lang et al. 2014)). The same is true for studies of WNP and ENP whales, except that between these groups there are also frequency differences for alleles (Ex. M-0181 (LeDuc et al. 2002); Ex. M-0179 (Lang et al. 2010b)). Because the same haplotypes and alleles occur in all three populations/groups, *i.e.*, there are no unique haplotype or allele markers for the WNP, PCFG or PCFG, an assignment test cannot be performed using mitochondrial or microsatellite genetic analyses.

Recent studies indicate there is more promise in using single nucleotide polymorphs (SNPs) for assignment tests. A recent study found that there is a 'genotype' that occurs with high frequency in samples from whales at Sakhalin Island and in much lower frequency in samples collected in the wintering lagoons in Mexico (Ex. M-0042 (Brüniche-Olsen et al. 2018)). However, the finding that a genetic sample from a whale has the 'western genotype' does not confirm that the whale was from Sakhalin, nor does finding an 'eastern genotype' confirm the whale was part of the ENP because both genotypes occurred in both sampling areas. Thus, even though SNPs analysis of gray whales is a promising development and has potential future applications in assignment tests, a genetic sample cannot currently be assigned with a high degree of confidence to one of the three populations/groups of interest.

In conclusion, it is my opinion that NMFS's proposed approach of using photo-identification matching complemented by genetic sample matching is a reliable (and the best available) approach for determining the population/group a gray whale hunted by the Makah Tribe belongs to because genetic analysis alone cannot produce reliable assignments.

D. Mr. Schubert's Testimony Does Not Present an Objective View of the Available Scientific Information.

In my review of Mr. Schubert's testimony as a whole, it was apparent that many of his comments were aimed at criticizing NMFS's proposed waiver and regulations and selectively relied on a subset of the available scientific information most conducive to supporting AWI's opposition to the proposed Makah hunt. To illustrate this problem with his testimony, which appears to ignore the MMPA's mandate that a waiver and regulations must be based on the best available scientific evidence (rather than a subset of that evidence), I will provide a few examples.

In paragraph 24, Mr. Schubert describes the 1999-2000 unusual mortality event (UME) of gray whales as follows:

> In 1999 and 2000 gray whales experienced an Unusual Mortality Event (UME) during which a large number died primarily due to malnutrition (Ex. M-0115 (Gulland et al., 2005, AWI Ex. 5)). As a result the gray whale population declined from over 20,000 animals to approximately 16,000. Many scientists suggested that the losses were due

to the impact of ocean warming on the whales habitat (see below), particularly in their arctic summer feeding areas (see e.g., (Ex. M-0028) Le Boeuf et al., 2000, AWI Ex. 6).

Mr. Schubert highlights the role that ocean warming may have had on gray whale foraging, but he fails to note that Gulland et al. (2005) (Ex. M-0115) (pages 13-15) reviewed several potential causes of the UME before focusing on starvation as the most likely cause or their subsequent discussion (pages 15-17) of multiple potential causes of such a large-scale starvation event. The authors evaluated both environmental changes affecting food supply, such as an El Niño event, and the effects of high population density before stating at page 17 that "[t]aken together, these events could be indicative of a population near carrying capacity that experienced substantial nutritional stress during poor environmental conditions, which was translated into lower reproduction and higher mortality." Notwithstanding the objective and comprehensive approach of Gulland et al. (2005) and their conclusion (at page iii) that "the underlying cause of starvation during this event is unknown," Mr. Schubert focused almost exclusively on the role that environmental change in summer feeding habitat may have played in the UME, while discounting the potential contribution of density-dependent effects of a population at or near its carrying capacity. *See* Schubert testimony paragraph 26.

Mr. Schubert's testimony essentially ignores scientific evidence supporting the status of ENP gray whales as close to their carrying capacity and the impacts this may have on abundance levels over time. *See, e.g.*, Schubert testimony paragraph 40 (citing to the 2016 ENP gray whale SAR (Carretta et al. 2017, which was attached as NMFS Ex. 2-7 to the Declaration of Shannon Bettridge) but failing to note NMFS's conclusion (page 15) that "[i]t is expected that a population close to or at carrying capacity will be more susceptible to environmental fluctuations" or to discuss NMFS's reference, Moore et al. (2001)). He also never mentions that following the 1999-2000 UME, the population rebounded to an estimated 27,000 animals (notwithstanding any environmental changes that may have occurred during or before that time) or that between 1998 and 2002, *i.e.*, during and after the UME, the PCFG experienced a pulse of immigration. *See* Initial Direct Testimony of Jonathan Scordino at 39-40 (Dkt. No. 31).

Mr. Schubert's testimony about whether there is evidence that the PCFG is a separate stock from the ENP also minimizes or ignores altogether scientific information that is contrary to AWI's position on stock structure. He initially states, without citation in paragraph 38, that "PCFG whales are genetically distinct from ENP and WNP gray whales," but he later acknowledges that this difference is small with respect to mitochondrial DNA and does not exist in comparisons of nuclear DNA. *See* paragraph 40 (citing Ex. M-0177 (Lang et al. 2011) and the 2015 draft EIS (Ex. M-0217)). He also states that "[t]he best available scientific evidence indicates that the growth of [PCFG] gray whales is likely through recruitment of gray whales born to PCFG whales given the close associations between members of this group (Calambokidis and Perez, 2017), AWI Ex. 24." However, Schubert makes no mention of the substantial scientific evidence for the occurrence of external recruitment in PCFG population dynamics. *See* Initial Direct Testimony of Scordino at 44-49 (discussing, *inter alia*, Calambokidis et al. 2002a (Ex. M-0047), 2012 (Ex. M-0052), 2017 (Ex. M-0053), Lang and Martien 2012 (Ex. M-0176), and Weller et al. 2013a (Ex. M-0294)).

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0259.
Weller, D. W., R. L. Brownell, J. L. Laake, J. E. Moore, P. E. Rosel, B. L. Taylor, P. R. Wade, S. Bettridge, R. L. Brownell Jr, J. L. Laake, J. E. Moore, P. E. Rosel, B. L. Taylor, and P. R. Wade. 2013a. Report of the National Marine Fisheries Service gray whale stock identification workshop. NOAA Technical Memorandum NMFS-SWFSC 507(March):55. **Ex. M-0294**

REBUTTAL TESTIMONY OF JONATHAN SCORDINO
EXHIBIT LIST

Exhibit No.	Citation	Document
M-0307	Ilyashenko, V., and K. Zharikov. 2014a	Ilyashenko, V., and K. Zharikov. 2014a. Supplement: Aboriginal harvest of gray and bowhead whales in the Russian Federation in 2013. Paper SC/65b/BRG03 Supplement Presented to the Scientific Committee of the International Whaling Commission.
M-0308	International Whaling Commission. 2016a	International Whaling Commission. 2016a. Summary of infractions reports received by the Commission for 2014 and 2015. Paper IWC/66/INF4 presented to the International Whaling Commission:1–6.
M-0309	International Whaling Commission. 2018h	International Whaling Commission. 2018h. International Convention for the Regulation of Whaling, 1946: Schedule as ammended by the Commission at the 67th meeting Florianopolis, Brazil, September 2018.

List of passports of gray whales taken in 2013

1	2	3	4	5	6	7	8	9	10			11	12	13	14	15	16	17	18	
									Number of shots										Biological sampling	
#	Date	Time of departure to sea	Time of spotting the whale	Time of first shot	Time of whale's death	Time of returning to shore	Places of hunt and stranding	Distance from shore (km)	harpoon	darting gun	carbine	Sea, wind, ice (%) conditions	Whale's sex	Body length (meters)	Weight (hundreds of kilos)	Remarks (hunters' comments, whale's behavior)	Presence of traumas and injuries	Presence of foetus, lactation	Date	Name
1	5/12/2013	11:02	12:24	13:41	14:33	20:10	Opposite "Akkani" base, Lorino settlement	36.0	14	0	80	beaufort - 2, wind - SW, ice - 0	female	12.8	221.00	aggressive	-	foetus	-	-
2	5/16/2013	6:00	7:05	7:58	8:21	11:14	Opposite "Akkani" base, Lorino settlement	26.0	16	0	83	beaufort - 2, wind - W, ice - 20	male			aggressive	struck and lost			
3	5/18/2013	10:30	11:17	12:03	12:24	19:57	Opposite "Akkani" base, Lorino settlement	27.0	13	0	83	beaufort - 0, wind - 0, ice - 0	female	13.4	255.00	aggressive	-	-	-	-
4	5/28/2013	7:14	7:47	8:53	9:18	15:30	Opposite Lorino settlement, Lorino settlement	6.0	18	0	83	beaufort - 0, wind - NW, ice - 13	female	12.5	206.00	aggressive	-	-	-	-
5	5/31/2013	6:50	7:10	8:30	10:56	14:37	Opposite "Shooting range" Lorino settlement	10.0	13	2	63	beaufort - 3, wind - SE, ice - 50	female	12.4	201.00	aggressive	-	-	-	-
6	6/3/2013	8:00	17:00	17:50	18:20	21:00	Opposite Singak cape, Sireniki settlement	2.0	8	1	120	beaufort - 0, wind - 0, ice - 0	female	8.0	60.00	quiet	-	-	-	-
7	6/4/2013	9:40	13:53	14:15	14:30	18:10	Opposite Third spit, Lorino settlement	19.3	14	1	65	beaufort - 3, wind - NW, ice - 10	female	12.2	191.00	aggressive	-	-	-	-
8	6/13/2013	10:30	11:37	12:09	12:31	15:22	Opposite strait, Lorino settlement	6.0	9	1	18	beaufort - 0, wind - W, ice - 0	female	9.6	90.00	quiet	-	-	-	-
9	6/13/2013	10:30	14:12	14:21	14:23	15:22	Opposite Lorino settlement, Lorino settlement	5.0	9	1	15	beaufort - 0, wind - W, ice - 0	male	9.4	85.00	aggressive	-	-	-	-
10	6/14/2013	10:45	10:59	11:30	11:35	12:10	Opposite Lorino settlement, Lorino settlement	3.0	8	0	5	beaufort - 1, wind - S, ice - 0	female	8.9	72.00	quiet	-	-	-	-
11	6/18/2013	9:45	9:50	9:58	10:01	12:05	Opposite Lorino settlement, Lorino settlement	3.0	2	0	2	beaufort - 1, wind - SW, ice - 0	female	8.2	62.00	quiet	-	-	-	-
12	6/18/2013	9:45	10:30	11:30	12:05	13:15	Opposite Lorino settlement, Lorino settlement	4.0	8	0	45	beaufort - 1, wind - SW, ice - 10	female	8.8	70.00	quiet	-	-	-	-
13	6/20/2013	8:30	9:15	9:45	9:55	14:20	Opposite Plosky cape, Novoe Chaplino settlement	25.0	7	1	100	beaufort - 0, wind - NW, ice - 10	female	7.9	59.30	quiet	-	-	6/21/2013	Selyakina S.G.
14	6/20/2013	10:30	12:10	13:00	14:00	15:00	Opposite Uelen settlement, Uelen settlement	3.0	16	1	100	beaufort - 0, wind - N, ice - 30	female	12.0	181.00	quiet	-	-	6/20/2013	Ettuvgi V.Ya.
15	6/20/2013	8:00	8:45	8:55	12:10	12:50	Anadyr gulf, Enmelen settlement	4.0	7	0	160	beaufort - 1, wind - NE, ice - 1	male	11.0	138.00	aggressive	hematoma on back	-	6/20/2013	Rakhtuvje N.I.
16	6/20/2013	8:00	8:30	10:30	11:00	15:00	Lavrentiya bay, Lavrentiya settlement	25.0	8	2	110	beaufort - 2, wind - SE, ice - 0	male	13.0	232.00	quiet	-	-	-	-
17	6/20/2013	7:30	16:15	17:50	18:00	21:00	Preobrazhenya bay, Anadyr gulf, Nunligran settlement	1.0	5	0	135	beaufort - 2, wind - S, ice - 0	female	9.0	74.00	quiet	-	-	-	-
18	6/23/2013	8:00	9:20	10:20	10:45	15:45	Opposite Inchoun settlement, Inchoun settlement	2.0	12	4	60	beaufort - 0,5, wind - N, ice - 0	male	14.9	353.00	quiet	-	-	6/24/2013	Cheyvun A.V.
19	6/24/2013	14:05	16:30	16:57	17:07	17:37	Opposite Goryachenskaya river, Lorino settlement	8.0	8	1	40	beaufort - 1, wind - NW, ice - 0	female	9.4	85.00	aggressive	-	-	-	-
20	6/30/2013	6:00	6:30	7:30	8:00	15:00	Opposite Uelen settlement Uelen settlement	3.0	16	1	100	beaufort - 1, wind - NE, ice - 0	female	10.0	103.00	aggressive	-	-	6/30/2013	Ettuvgi V.Ya., Yakovlev I.S.
21	7/1/2013	17:25	17:31	18:22	18:47	20:36	Opposite Chilen, Lorino settlement	6.0	11	0	20	beaufort - 0, wind - SE, ice - 0	female	9.1	77.00	aggressive	-	-	-	-
22	7/2/2013	10:30	13:10	14:00	14:30	18:05	Opposite Inchoun settlement, Inchoun settlement	5.0	12	2	74	beaufort - 0,5, wind - E, ice - 0	male	9.5	88.00	quiet	-	-	7/2/2013	Cheyvun A.V.
23	7/3/2013	9:30	9:50	10:20	10:40	12:00	Opposite lighthouse, Lorino settlement	2.0	4	0	20	beaufort - 1, wind - E, ice - 0	female	8.3	63.00	aggressive	-	-	-	-
24	7/4/2013	5:20	5:47	6:17	6:40	7:45	Opposite lighthouse, Lorino settlement	4.0	9	0	60	beaufort - 1, wind - E, ice - 0	male	8.6	67.00	aggressive	-	-	-	-
25	7/4/2013	11:00	11:50	14:05	14:30	16:20	Opposite Kuguvan cape, Yanrakynnot settlement	9.0	9	5	154	beaufort - 0, wind - NE, ice - 0	female	8.0	60.00	quiet	-	-	04.07.2013	Apaliu A.V.
26	7/4/2013	9:00	12:10	13:40	14:00	17:50	Opposite Inchoun settlement, Inchoun settlement	5.0	12	3	49	beaufort - 1, wind - E, ice - 0	female	9.8	96.00	quiet	-	-	7/4/2013	Cheyvun A.V.
27	7/7/2013	7:30	16:30	17:30	18:00	19:00	Opposite Uelen settlement Uelen settlement	3.0	16	0	80	beaufort - 0 wind - 0, ice - 0	female	10.0	103.00	quiet	-	-	7/7/2013	Ettuvgi V.Ya.
28	7/8/2013	10:05	10:18	10:35	10:37	12:21	Opposite Lorino settlement, Lorino settlement	4.0	8	0	10	beaufort - 1, wind - E, ice - 0	female	9.9	100.00	aggressive	-	-	-	-
29	7/9/2013	12:30	14:45	15:10	15:55	18:00	Pynakul', Lavrentiya settlement	5.0	12	2	100	beaufort - 0, wind - 0, ice - 0	female	10.0	103.00	quiet	-	-	7/9/2013	Lelikov A.P.
30	7/9/2013	6:40	6:56	7:12	7:19	10:30	Opposite Lorino settlement, Lorino settlement	7.0	8	0	10	beaufort - 2, wind - NW, ice - 0	female	9.1	77.00	aggressive	-	-	-	-
31	7/9/2013	6:40	7:25	7:44	7:56	10:30	Opposite Lorino settlement, Lorino settlement	9.0	8	0	15	beaufort - 2, wind - NW, ice - 0	female	9.1	77.00	aggressive	-	-	-	-
32	7/13/2013	3:30	5:05	6:30	7:45	9:00	Opposite Uelen settlement Uelen settlement	3.0	16	0	80	beaufort - 0, wind - 0, ice - 0	female	10.0	103.00	aggressive	-	-	7/13/2013	Ettuvgi V.Ya.
33	7/13/2013	7:00	7:18	7:30	7:33	9:15	Opposite Lorino settlement, Lorino settlement	4.0	8	0	20	beaufort - 1, wind - W, ice - 0	female	8.8	70.00	aggressive	-	-	-	-
34	7/18/2013	3:50	20:00	20:30	21:20	0:00	Neshkan settlement	3.0	6	2	100	beaufort - 1, wind - NE, ice - 1	male	14.5	324.00	quiet	-	-	-	-
35	7/18/2013	7:00	17:00	20:35	21:00	23:00	Kenigvun area, Enurmino settlement	12.0	6	0	150	beaufort - 0, wind - 0, ice - 0	male	11.6	163.00	quiet	-	-	7/18/2013	Tymkyroltyrgin A.O.
36	7/19/2013	9:30	9:45	10:20	10:30	11:30	Opposite "Ynakhpak" base, Novoe Chaplino settlement	3.0	6	1	120	beaufort - 2, wind - SE, ice - 0	female	9.5	88.00	quiet	stinky, inedible		19.07.2013	Selyakina S.G.
37	7/20/2013	11:00	11:30	12:40	13:30	14:00	Opposite Nunyamo cape, Lavrentiya settlement	4.0	12	2	200	beaufort - 0, wind - 0, ice - 0	female	13.4	255.00	quiet	-	-	7/20/2013	Lelikov A.P.
38	7/22/2013	10:00	13:00	14:30	15:00	20:00	Opposite Singak cape, Sireniki settlement	1.0	8	2	120	beaufort - 0, wind - SE, ice - 0	female	8.0	60.00	quiet	-	-	-	-
39	7/23/2013	9:00	12:00	13:20	14:00	17:50	Opposite Inchoun settlement, Inchoun settlement	5.0	10	4	56	beaufort - 0, wind - E, ice - 0	female	9.9	100.00	quiet	-	-	7/13/2013	Cheyvun A.V.
40	7/25/2013	9:43	9:46	10:07	10:16	13:09	Opposite Lorino settlement, Lorino settlement	3.0	0	1	20	beaufort - 0, wind - SE, ice - 0	male	8.6	67.00	aggressive	-	-	-	-
41	7/25/2013	9:43	12:02	12:15	12:21	14:07	Opposite Lorino settlement, Lorino settlement	5.0	9	0	10	beaufort - 1, wind - S, ice - 0	female	8.7	68.00	aggressive	-	-	-	-
42	7/26/2013	5:04	6:15	6:24	6:27	10:17	Opposite Goryachenskaya river, Lorino settlement	10.0	7	0	10	beaufort - 1, wind - SE, ice - 0	female	9.0	74.00	aggressive	-	-	-	-
43	7/26/2013	5:04	5:42	6:39	6:47	7:54	Opposite lighthouse, Lorino settlement	2.5	7	0	11	beaufort - 0, wind - SE, ice - 0	male	8.9	72.00	aggressive	-	-	-	-
44	7/26/2013	6:00	7:00	8:30	9:00	12:00	Opposite Uelen settlement Uelen settlement	2.0	17	0	80	beaufort - 1, wind - S, ice - 0	female	10.0	103.00	aggressive	-	-	7/26/2013	Ettuvgi V.Ya.
45	7/26/2013	10:00	12:00	13:20	14:10	17:50	Opposite Inchoun settlement, Inchoun settlement	5.0	9	4	80	beaufort - 0, wind - S, ice - 0	female	11.6	163.00	quiet	-	-	7/26/2013	Cheyvun A.V.
46	7/30/2013	4:30	5:30	6:30	7:00	10:30	Opposite Dezhnev cape, Uelen settlement	2.0	20	0	120	beaufort - 0, wind - S, ice - 0	female	12.0	181.00	quiet	-	-	7/30/2013	Ettuvgi V.Ya.
47	7/30/2013	5:45	5:57	6:18	6:24	8:50	Opposite Lorino settlement, Lorino settlement	3.0	9	0	120	beaufort - 2, wind - SE, ice - 0	female	8.8	70.00	aggressive	-	-	-	-
48	7/30/2013	5:45	7:04	7:32	7:54	8:50	Opposite Lorino settlement, Lorino settlement	1.5	8	0	17	beaufort - 1, wind - SE, ice - 0	female	9.1	77.00	aggressive	-	-	-	-
49	7/31/2013	6:38	6:57	7:18	7:23	11:20	Opposite Lorino settlement, Lorino settlement	1.5	9	0	15	beaufort - 1 wind - W, ice - 0	female	8.9	72.00	aggressive	-	-	-	-
50	7/31/2013	6:38	6:57	8:23	8:43	11:20	Opposite first spit, Lorino settlement	4.0	10	0	20	beaufort - 1 wind - SE, ice - 0	male	9.1	77.00	aggressive	-	-	-	-
51	8/1/2013	5:33	6:06	6:59	7:12	7:45	Opposite berth, Lorino settlement	5.0	10	0	18	beaufort - 1, wind - S, ice - 0	female	9.5	88.00	aggressive	-	-	-	-
52	8/1/2013	5:33	6:13	7:15	7:32	7:45	Opposite "Shooting range", Lorino settlement	6.0	10	0	40	beaufort - 0 wind - 0, ice - 0	male	9.8	96.00	aggressive	-	-	-	-
53	8/1/2013	10:00	10:20	12:30	12:39	15:30	Opposite Vankarem cape, Vankarem settlement	25.0	9	0	120	beaufort - 1, wind - E, ice - 10	male	11.0	138.00	aggressive	-	-	8/1/2013	Goryachikh A.Yu.
54	8/1/2013	10:40	13:10	13:25	14:20	17:50	Opposite Inchoun settlement, Inchoun settlement	10.0	10	6	100	beaufort - 0 wind - S, ice - 0	female	12.0	181.00	quiet	-	-	8/1/2013	Cheyvun A.V.
55	8/2/2013	8:15	8:25	9:05	9:20	10:00	Opposite "Ynakhpak" base, Novoe Chaplino settlement	2.0	7	1	100	beaufort - 1, wind - 0, ice - 0	female	9.0	74.00	quiet	-	-	8/3/2013	Selyakina S.G.
56	8/2/2013	9:00	9:30	10:00	10:30	13:00	Lavrentiya bay, Lavrentiya settlement	8.0	8	0	1	beaufort - 0, wind - 0, ice - 0	female	9.0	74.00	quiet	-	-	-	-
57	8/3/2013	7:45	9:35	9:55	10:00	16:00	Opposite Goryachenskaya river, Lorino settlement	5.0	8	0	20	beaufort - 3, wind - NE, ice - 0	female	9.1	77.00	quiet	-	-	-	-
58	8/6/2013	5:02	10:30	11:20	11:50	16:40	Opposite Lorino settlement Lorino settlement	12.0	8	0	25	beaufort - 2 wind - NE, ice - 0	female	9.2	79.00	quiet	-	-	-	-
59	8/7/2013	6:30	12:20	13:25	14:00	15:40	Opposite Kitsetin cape, Enurmino settlement	6.0	14	3	80	beaufort - 0, wind - SE, ice - 0	male	11.8	172.00	quiet	-	-	8/7/2013	Tymkyroltyrgin A.O.
60	8/10/2013	5:10	5:20	6:11	6:23	10:13	Opposite Third spit, Lorino settlement	12.0	9	0	15	beaufort - 2, wind - NW, ice - 0	male	8.7	68.00	aggressive	-	-	-	-
61	8/12/2013	9:10	11:30	11:50	13:30	14:50	Anadyr gulf, Enmelen settlement	4.0	6	3	140	beaufort - 1, wind - N, ice - 0	male	9.3	82.00	aggressive	hematomas on back and tail	-	8/12/2013	Rakhtuvje N.I.
62	8/13/2013	8:00	17:00	18:10	20:00	4:30	Opposite Neshkan settlement, Neshkan settlement	5.0	7	2	100	beaufort - 0, wind - 0, ice - 0	male	15.5	391.00	quiet	-	-	8/13/2013	Kugenvev M.G.
63	8/13/2013	6:30	8:00	8:30	9:10	12:45	Opposite Inchoun settlement, Inchoun settlement	12.0	12	3	100	beaufort - 1, wind - S, ice - 0	female	12.5	206.00	quiet	-	-	8/13/2013	Cheyvun A.V.
64	8/14/2013	4:30	5:00	6:00	8:00	9:00	Opposite Uelen settlement, Uelen settlement	6.0	16	0	120	beaufort - 0, wind - 0, ice - 0	female	12.0	181.00	aggressive	-	-	8/14/2013	Ettuvgi V.Ya.
65	8/14/2013	8:30	11:00	14:00	14:35	19:00	Senyavina strait, Yanrakynnot settlement	28.0	13	6	115	beaufort - 0, wind - 0, ice - 0	male	10.0	103.00	quiet	-	-	8/14/2013	Gematagin D.T.
66	8/16/2013	9:15	9:30	10:23	10:39	15:07	Opposite Goryachenskaya river, Lorino settlement	17.0	11	2	20	beaufort - 1, wind - NW, ice - 0	male	9.6	90.00	aggressive	-	-	-	-
67	8/17/2013	8:30	9:40	11:05	12:00	13:30	Kengivun area, Enurmino settlement	11.0	8	3	120	beaufort - 1, wind - E, ice - 0	male	12.3	196.00	quiet	-	-	8/17/2013	Tymkyroltyrgin A.O.
68	8/20/2013	10:30	11:00	11:50	12:10	14:00	Opposite "Ynakhpak" base, Novoe Chaplino settlement	9.0	9	2	80	beaufort - 2, wind - E, ice - 0	male	9.0	74.00	aggressive	-	-	8/20/2013	Selyakina S.G.
69	8/20/2013	6:55	7:10	7:35	7:40	14:30	Opposite lighthouse, Lorino settlement	7.0	9	0	20	beaufort - 1, wind - 0, ice - 0	male	9.1	77.00	aggressive	-	-	-	-
70	8/20/2013	6:55	8:05	8:20	8:30	14:30	Opposite Goryachenskaya river, Lorino settlement	3.0	9	2	35	beaufort - 0, wind - 0, ice - 0	female	9.8	96.00	aggressive	-	-	-	-

71	8/22/2013	12:00	12:10	12:18	12:25	14:30	Opposite Lorino settlement Lorino settlement	2.0	8	1	30	beaufort - 0, wind - NW, ice - 0	female	9.1	77.00	aggressive	-	-	-	-
72	8/28/2013	3:00	5:00	9:30	10:20	11:30	Opposite Uelen settlement, Uelen settlement	3.0	18	0	140	beaufort - 1, wind - S, ice - 0	female	10.0	103.00	aggressive	-	-	8/28/2013	Ettuvgi V.Ya.
73	8/30/2013	7:03	7:43	8:36	9:03	14:06	Opposite "Shooting range" Lorino settlement	8.0	8	0	20	beaufort - 0, wind - 0, ice - 0	female	9.0	74.00	aggressive	-	-	-	-
74	8/30/2013	7:03	9:25	9:55	10:10	14:06	Opposite Lorino settlement Lorino settlement	6.0	9	0	85	beaufort - 0, wind - 0, ice - 0	female	9.3	82.00	quiet	-	-	-	-
75	9/1/2013	9:00	9:30	11:00	11:40	15:00	Opposite Vankarem cape, Vankarem settlement	20.0	9	0	120	beaufort - 3, wind - SE, ice - 0	male	11.1	142.00	quiet	-	-	9/1/2013	Goryachikh A.Yu.
76	9/2/2013	10:30	10:45	13:00	13:30	16:00	Opposite Inchoun settlement, Inchoun settlement	4.0	10	2	100	beaufort - 1, wind - NE, ice - 0	male	9.2	79.00	quiet	-	-	9/2/2013	Cheyvun A.V.
77	9/4/2013	10:32	10:55	11:25	11:40	13:30	Opposite Lorino settlement Lorino settlement	6.0	8	1	15	beaufort - 1, wind - NE, ice - 0	female	10.0	103.00	aggressive	-	-	-	-
78	9/4/2013	10:32	12:26	13:55	14:05	20:00	Opposite Lorino settlement Lorino settlement	10.0	12	0	45	beaufort - 1, wind - NE, ice - 0	female	13.0	232.00	aggressive	-	-	-	-
79	9/5/2013	5:00	8:10	9:20	10:00	13:15	Pinakul', Lavrentiya settlement	4.0	8	2	140	beaufort - 0, wind - 0, ice - 0	female	12.4	201.00	quiet	-	-	9/5/2013	Lelikov A.P.
80	9/6/2013	9:04	9:53	10:53	11:12	12:04	Opposite Raupelyan cape, Lorino settlement	7.0	7	0	7	beaufort - 0, wind - E, ice - 0	female	9.1	77.00	quiet	-	-	-	-
81	9/6/2013	9:11	9:21	9:43	9:57	14:20	Opposite Second spit, Lorino settlement	8.0	8	0	0	beaufort - 1, wind - SE, ice - 0	female	9.1	77.00	aggressive	-	-	-	-
82	9/8/2013	8:00	8:30	10:10	13:00	16:30	Lavrentiya bay, Lavrentiya settlement	18.0	8	5	50	beaufort - 0, wind - 0, ice - 0	male	12.6	211.00	quiet	-	-	-	-
83	9/8/2013	4:30	6:40	8:00	9:00	14:00	Opposite Uelen settlement, Uelen settlement	2.0	18	0	140	beaufort - 1, wind - W, ice - 0	female	12.0	181.00	aggressive	-	-	9/8/2013	Ettuvgi V.Ya.
84	9/9/2013	4:45	6:05	7:20	7:55	11:30	Opposite Inchoun settlement, Inchoun settlement	7.0	12	0	100	beaufort - 1, wind - SE, ice - 0	male	9.2	78.00	quiet	-	-	9/9/2013	Cheyvun A.V.
85	9/9/2013	10:44	11:07	11:42	11:58	12:53	Opposite Lorino settlement, Lorino settlement	7.0	8	4	0	-	female	9.4	85.00	quiet	-	-	-	-
86	9/9/2013	10:00	14:00	14:50	15:20	19:30	Opposite Zeleny cape, Sireniki settlement	0,3-0,4	12	0	120	beaufort - 0, wind - 0, ice - 0	female	8.0	60.00	quiet	-	-	-	-
87	9/9/2013	9:00	9:50	10:10	13:00	15:15	Anadyr gulf, Enmelen settlement	4.0	6	3	120	beaufort - 0 wind - 0, ice - 0	male	9.3	82.00	aggressive	flukes injured	-	9/9/2013	Rultyngaun N.A.
88	9/9/2013	9:00	10:00	10:30	12:00	15:30	Anadyr gulf, Enmelen settlement	5.0	6	2	100	beaufort - 0, wind - 0, ice - 0	male	9.0	74.00	quiet	right flipper injured	-	9/9/2013	Tayka O.N.
89	9/9/2013	5:35	6:21	6:32	8:20	15:20	Opposite Zeleny cape, Uelkal' settlement	20.0	15	0	280	beaufort - 1, wind - NW, ice - 0	male			aggressive	struck and lost			
90	9/10/2013	9:05	9:25	10:00	11:15	14:10	Opposite Lorino settlement, Lorino settlement	10.0	7	2	0	beaufort - 0, wind - SE, ice - 0	female	8.7	68.00	aggressive	-	-	-	-
91	9/10/2013	9:05	9:35	9:55	10:15	14:00	Opposite Lorino settlement, Lorino settlement	9.0	7	3	0	beaufort - 0, wind - SE, ice - 0	female	8.6	66.00	aggressive	-	-	-	-
92	9/18/2013	9:10	10:02	11:10	11:30	16:10	Opposite Lorino settlement, Lorino settlement	12.0	10	0	12	beaufort - 1 wind - NE, ice - 0	female	12.5	206.00	quiet	stinky, inedible			
93	9/19/2013	9:30	9:50	10:40	10:55	11:20	Opposite "Ynakhpak" base, Novoe Chaplino settlement	3.0	7	1	100	beaufort - 2, wind - SE, ice - 0	female	8.0	60.00	aggressive	-	-	9/20/2013	Selyakina S.G.
94	9/20/2013	5:45	5:47	6:58	7:21	11:13	Opposite Second spit, Lorino settlement	15.0	14	0	60	beaufort - 3, wind - NE, ice - 0	female	13.4	255.00	aggressive	-	-	-	-
95	9/23/2013	6:34	6:42	7:03	7:12	10:43	Opposite First spit, Lorino settlement	3.0	7	1	9	beaufort - 0,5, wind - NW, ice - 0	female	8.9	72.00	quiet	-	-	-	-
96	9/23/2013	8:12	8:15	8:47	9:09	10:43	Opposite Second spit, Lorino settlement	8.0	7	1	30	beaufort - 0, wind - 0, ice - 0	female	9.4	85.00	quiet	-	-	-	-
97	9/23/2013	8:30	10:58	11:17	13:45	21:40	Opposite Kolyuchin cape, Yanrakynnot settlement	38.0	10	0	320	beaufort - 1,5, wind - S, SW, ice - 0	male	8.0	60.00	quiet	-	-	24.09.2013	Apaliu A.V.
98	9/24/2013	6:03	6:14	6:45	6:58	12:07	Opposite Second spit, Lorino settlement	8.0	9	3	0	beaufort - 0,5, wind - NW, ice - 0	female	8.5	66.00	quiet	-	-	-	-
99	9/24/2013	7:14	8:08	8:29	8:57	12:07	Opposite Raupelyan area, Lorino settlement	13.0	9	2	0	beaufort - 0,3, wind - NW, ice - 0	female	9.0	74.00	aggressive	-	-	-	-
100	9/24/2013	9:00	14:00	14:40	16:00	18:00	Lavrentiya bay, Lavrentiya settlement	12.0	8	0	100	beaufort - 1, wind - S, ice - 0	male	12.0	181.00	quiet	-	-	-	-
101	9/24/2013	5:00	12:20	13:20	13:55	17:50	Opposite Inchoun settlement, Inchoun settlement	7.0	14	4	100	beaufort - 0,5, wind - W, ice - 0	female	12.8	221.00	quiet	-	-	9/24/2013	Cheyvun A.V.
102	9/24/2013	5:00	9:20	11:10	11:25	17:50	Opposite Inchoun settlement, Inchoun settlement	5.0	16	5	100	beaufort - 0,5, wind - W, ice - 0	male	15.0	357.00	quiet	-	-	9/24/2013	Cheyvun A.V.
103	9/25/2013	6:30	7:00	8:10	9:15	15:00	Opposite Pynakul', Lavrentiya settlement	4.5	15	2	120	beaufort - 1,5, wind - N, ice - 0	female	12.0	181.00	aggressive	-	-	9/25/2013	Lelikov A.P.
104	9/26/2013	8:35	8:50	9:25	9:50	10:45	Opposite "Ynakhpak" base, Novoe Chaplino settlement	1.5	8	3	40	beaufort - 2, wind - NE, ice - 0	female	9.0	74.00	quiet	-	-	27.09.2013	Selyakina S.G.
105	9/27/2013	5:20	7:30	8:10	8:49	11:15	Opposite Lorino settlement, Lorino settlement	10.0	10	2	15	beaufort - 3, wind - SE, ice - 0	female	9.5	88.00	aggressive	-	-	-	-
106	9/27/2013	6:00	10:00	12:30	13:20	19:00	Opposite Neshkan settlement, Neshkan settlement	8.0	7	2	140	beaufort - 1-2, wind - SW, ice - 0	male	15.0	357.00	quiet	-	-	9/27/2013	Kugenvev M.G.
107	9/27/2013	8:00	15:00	15:20	15:45	20:00	Opposite Zeleny cape, Sireniki settlement	1.5	10	0	120	beaufort - 0, wind - 0, ice - 0	female	8.0	60.00	quiet	-	-	-	-
108	10/1/2013	8:00	8:30	8:40	9:05	12:30	Opposite Uelkal' settlement, Uelkal' settlement	25.0	9	0	260	beaufort - 1, wind - NW, ice - 0	male	10.0	103.00	quiet	-	-	10/1/2013	Kolpikov Yu.I.
109	10/1/2013	6:00	9:15	9:47	10:20	11:00	Opposite Enurmino settlement, Enurmino settlement	9.0	13	2	120	beaufort - 0, wind - 0, ice - 0	male	11.3	150.00	quiet	-	-	10/1/2013	Tymkyroltyrgin A.O.
110	10/2/2013	6:00	7:30	8:30	9:20	15:00	Opposite Uelen settlement, Uelen settlement	4.0	19	0	120	beaufort - 1, wind - E, ice - 0	female	13.0	232.00	aggressive	-	-	10/2/2013	Ettuvgi V.Ya.
111	10/3/2013	8:35	9:05	9:45	10:10	11:35	Opposite "Ynakhpak" base, Novoe Chaplino settlement	5.0	8	3	100	beaufort - 1, wind - SE, ice - 0	female	8.0	60.00	quiet	-	-	10/4/2013	Selyakina S.G.
112	10/15/2013	8:40	10:20	11:05	11:20	12:40	Opposite "Ynakhpak" base, Novoe Chaplino settlement	11.0	7	3	100	beaufort - 3, wind - NE, ice - 0	female	8.0	60.00	quiet	-	-	10/16/2013	Selyakina S.G.
113	10/15/2013	6:05	8:30	9:15	10:02	13:05	Opposite Lorino settlement	10.0	9	0	30	beaufort - 1, wind - 0, ice - 0	female	9.3	82.00	quiet	-	-		
114	10/16/2013	6:05	9:07	10:45	11:45	18:00	Opposite Lorino settlement	3.0	8	2	30	beaufort - 0, wind - 0, ice - 0	female	8.7	68.00	quiet	-	-		
115	10/16/2013	6:05	6:35	7:20	8:05	18:00	Opposite Kukuveem	8.0	9	2	45	beaufort - 2, wind - S, ice - 0	female	8.4	64.00	quiet	-	-		
116	10/24/2013	7:00	7:30	8:02	8:10	11:45	Opposite Goryachenskaya river	8.0	9	2	0	beaufort - 3, wind - NE, ice - 0	male	9.2	79.00	aggressive	orca's bites	-	-	-
117	10/29/2013	9:15	10:10	10:48	12:13	16:50	Achen, Yanrakynnot settlement	3.0	9	0	60	beaufort - 1, wind - NE, ice - 0	female	8.0	60.00	aggressive	-	-	10/29/2013	Apaliu A.V.
118	10/29/2013	6:00	6:30	7:50	8:20	11:30	Opposite Inchoun settlement	6.0	12	2	100	beaufort - 1, wind - N, ice - 0	male	9.5	88.00	quiet		-	10/29/2013	Cheyvun A.V.
119	10/31/2013	8:00	8:30	8:50	9:45	10:45	Enmelen settlement		7	0	60	beaufort - 2, wind N, ice - 0	male	8.0	64.00	aggressive	tail and left flipper injured	-	10/31/2013	Rultantigreu N.A.
120	11/1/2013	7:00	9:40	10:20	11:00	13:00	Lavrentiya bay, Lavrentiya settlement	12.0	8	0	80	beaufort - 1, wind - W, ice - 0	male	9.4	85.00	quiet	-	-		
121	11/2/2013	9:30	11:00	11:55	12:15	16:00	Pynakul', Lavrentiya settlement	4.0	9	2	100	beaufort - 0, wind - 0, ice - 0	female	9.7	93.00	aggressive	-	-	11/2/2013	Eynetegina O.I.
122	11/3/2013	6:30	10:30	11:40	12:20	13:50	Inchoun	6.0	11	3	100	beaufort - 1, wind - S, ice - 0	female	10.2	102.00	quiet	-	-	11/3/2013	Cheyvun A.V.
123	11/3/2013	6:30	8:10	9:50	10:00	12:30	Inchoun	5.0	13	2	100	beaufort - 1, wind - S, ice - 0	male	10.4	116.00	quiet	-	-	11/3/2013	Cheyvun A.V.
124	11/12/2013	10:21	10:30	10:53	11:07	14:15	Opposite Second spit	7.0	8	1	20	beaufort - 1, wind - E, ice - 1	female	9.5	88.00	aggressive	-	-	-	-
125	11/16/2013	8:30	9:27	9:43	9:58	14:37	Opposite Goryachenskaya river	13.0	9	1	30	beaufort - 1, wind - NW, ice - 2	female	9.2	77.00	aggressive	-	-		
126	11/18/2013	8:00	9:20	10:05	10:25	13:30	Plosky cape, Kivak	22.0	7	3	80	beaufort - 1, wind - NW, ice - 0	female	8.0	60.00	quiet	-	-	11/18/2013	Selyakina S.G.
127	12/2/2013	7:00	7:30	8:30	9:00	13:00	Dezhneva cape	2.0	16	0	100	beaufort - 1, wind - N, ice - 0	female	12.0	181.00	aggressive	-	-	11/29/2013	Ettuvgi V.Ya.

List of passports of bowhead whales taken in 2013

1	2	3	4	5	6	7	8	9	10			11	12	13	14	15	16	17	18	
#	Date	Time of departure to sea	Time of spotting the whale	Time of first shot	Time of whale's death	Time of returning to shore	Places of hunt and stranding	Distance from shore (km)	Number of shots			Sea, wind, ice (%) conditions	Whale's sex	Body length (meters)	Weight (hundreds of kilos)	Remarks (hunters' comments, whale's behavior)	Presence of traumas and injuries	Presence of foetus, lactation	Biological sampling	
									harpoon	darting gun	carbine								Date	Name
1	11/22/2013	9:00	10:00	11:20	12:00	18:50	Stoletya cape, Sirenik	2.0	5	2	100	beaufort - 0, wind - NE, ice - 0	male	13.0	410.00	quiet	-	-		

#	Date	Time of first shot	Time of whale's death	Time to death (TTD)	Number of shots			Body length (meters)	Weight (hundreds of kilos)
					harpoon	darting gun	carbine		
1	5/12/2013	13:41	14:33	0:52	14	0	80	12.8	221.00
2	5/16/2013	7:58	8:21	0:23	16	0	83		
3	5/18/2013	12:03	12:24	0:21	13	0	83	13.4	255.00
4	5/28/2013	8:53	9:18	0:25	18	0	83	12.5	206.00
5	5/31/2013	8:30	10:56	2:26	13	2	63	12.4	201.00
6	6/3/2013	17:50	18:20	0:30	8	1	120	8.0	60.00
7	6/4/2013	14:15	14:30	0:15	14	1	65	12.2	191.00
8	6/13/2013	12:09	12:31	0:22	9	1	18	9.6	90.00
9	6/13/2013	14:21	14:23	0:02	9	1	15	9.4	85.00
10	6/14/2013	11:30	11:35	0:05	8	0	5	8.9	72.00
11	6/18/2013	9:58	10:01	0:03	2	0	2	8.2	62.00
12	6/18/2013	11:30	12:05	0:35	8	0	45	8.8	70.00
13	6/20/2013	9:45	9:55	0:10	7	1	100	7.9	59.30
14	6/20/2013	13:00	14:00	1:00	16	1	100	12.0	181.00
15	6/20/2013	8:55	12:10	3:15	7	0	160	11.0	138.00
16	6/20/2013	10:30	11:00	0:30	8	2	110	13.0	232.00
17	6/20/2013	17:50	18:00	0:10	5	0	135	9.0	74.00
18	6/23/2013	10:20	10:45	0:25	12	4	60	14.9	353.00
19	6/24/2013	16:57	17:07	0:10	8	1	40	9.4	85.00
20	6/30/2013	7:30	8:00	0:30	16	1	100	10.0	103.00
21	7/1/2013	18:22	18:47	0:25	11	0	20	9.1	77.00
22	7/2/2013	14:00	14:30	0:30	12	2	74	9.5	88.00
23	7/3/2013	10:20	10:40	0:20	4	0	20	8.3	63.00
24	7/4/2013	6:17	6:40	0:23	9	0	60	8.6	67.00
25	7/4/2013	14:05	14:30	0:25	9	5	154	8.0	60.00
26	7/4/2013	13:40	14:00	0:20	12	3	49	9.8	96.00
27	7/7/2013	17:30	18:00	0:30	16	0	80	10.0	103.00
28	7/8/2013	10:35	10:37	0:02	8	0	10	9.9	100.00
29	7/9/2013	15:10	15:55	0:45	12	2	100	10.0	103.00
30	7/9/2013	7:12	7:19	0:07	8	0	10	9.1	77.00
31	7/9/2013	7:44	7:56	0:12	8	0	15	9.1	77.00
32	7/13/2013	6:30	7:45	1:15	16	0	80	10.0	103.00
33	7/13/2013	7:30	7:33	0:03	8	0	20	8.8	70.00
34	7/18/2013	20:30	21:20	0:50	6	2	100	14.5	324.00
35	7/18/2013	20:35	21:00	0:25	6	0	150	11.6	163.00

36	7/19/2013	10:20	10:30	0:10	6	1	120	9.5	88.00
37	7/20/2013	12:40	13:30	0:50	12	2	200	13.4	255.00
38	7/22/2013	14:30	15:00	0:30	8	2	120	8.0	60.00
39	7/23/2013	13:20	14:00	0:40	10	4	56	9.9	100.00
40	7/25/2013	10:07	10:16	0:09	0	1	20	8.6	67.00
41	7/25/2013	12:15	12:21	0:06	9	0	10	8.7	68.00
42	7/26/2013	6:24	6:27	0:03	7	0	10	9.0	74.00
43	7/26/2013	6:39	6:47	0:08	7	0	11	8.9	72.00
44	7/26/2013	8:30	9:00	0:30	17	0	80	10.0	103.00
45	7/26/2013	13:20	14:10	0:50	9	4	80	11.6	163.00
46	7/30/2013	6:30	7:00	0:30	20	0	120	12.0	181.00
47	7/30/2013	6:18	6:24	0:06	9	0	120	8.8	70.00
48	7/30/2013	7:32	7:54	0:22	8	0	17	9.1	77.00
49	7/31/2013	7:18	7:23	0:05	9	0	15	8.9	72.00
50	7/31/2013	8:23	8:43	0:20	10	0	20	9.1	77.00
51	8/1/2013	6:59	7:12	0:13	10	0	18	9.5	88.00
52	8/1/2013	7:15	7:32	0:17	10	0	40	9.8	96.00
53	8/1/2013	12:30	12:39	0:09	9	0	120	11.0	138.00
54	8/1/2013	13:25	14:20	0:55	10	6	100	12.0	181.00
55	8/2/2013	9:05	9:20	0:15	7	1	100	9.0	74.00
56	8/2/2013	10:00	10:30	0:30	8	0	1	9.0	74.00
57	8/3/2013	9:55	10:00	0:05	8	0	20	9.1	77.00
58	8/6/2013	11:20	11:50	0:30	8	0	25	9.2	79.00
59	8/7/2013	13:25	14:00	0:35	14	3	80	11.8	172.00
60	8/10/2013	6:11	6:23	0:12	9	0	15	8.7	68.00
61	8/12/2013	11:50	13:30	1:40	6	3	140	9.3	82.00
62	8/13/2013	18:10	20:00	1:50	7	2	100	15.5	391.00
63	8/13/2013	8:30	9:10	0:40	12	3	100	12.5	206.00
64	8/14/2013	6:00	8:00	2:00	16	0	120	12.0	181.00
65	8/14/2013	14:00	14:35	0:35	13	6	115	10.0	103.00
66	8/16/2013	10:23	10:39	0:16	11	2	20	9.6	90.00
67	8/17/2013	11:05	12:00	0:55	8	3	120	12.3	196.00
68	8/20/2013	11:50	12:10	0:20	9	2	80	9.0	74.00
69	8/20/2013	7:35	7:40	0:05	9	0	20	9.1	77.00
70	8/20/2013	8:20	8:30	0:10	9	2	35	9.8	96.00
71	8/22/2013	12:18	12:25	0:07	8	1	30	9.1	77.00
72	8/28/2013	9:30	10:20	0:50	18	0	140	10.0	103.00
73	8/30/2013	8:36	9:03	0:27	8	0	20	9.0	74.00
74	8/30/2013	9:55	10:10	0:15	9	0	85	9.3	82.00
75	9/1/2013	11:00	11:40	0:40	9	0	120	11.1	142.00

76	9/2/2013	13:00	13:30	0:30	10	2	100	9.2	79.00
77	9/4/2013	11:25	11:40	0:15	8	1	15	10.0	103.00
78	9/4/2013	13:55	14:05	0:10	12	0	45	13.0	232.00
79	9/5/2013	9:20	10:00	0:40	8	2	140	12.4	201.00
80	9/6/2013	10:53	11:12	0:19	7	0	7	9.1	77.00
81	9/6/2013	9:43	9:57	0:14	8	0	0	9.1	77.00
82	9/8/2013	10:10	13:00	2:50	8	5	50	12.6	211.00
83	9/8/2013	8:00	9:00	1:00	18	0	140	12.0	181.00
84	9/9/2013	7:20	7:55	0:35	12	0	100	9.2	78.00
85	9/9/2013	11:42	11:58	0:16	8	4	0	9.4	85.00
86	9/9/2013	14:50	15:20	0:30	12	0	120	8.0	60.00
87	9/9/2013	10:10	13:00	2:50	6	3	120	9.3	82.00
88	9/9/2013	10:30	12:00	1:30	6	2	100	9.0	74.00
89	9/9/2013	6:32	8:20	1:48	15	0	280		
90	9/10/2013	10:00	11:15	1:15	7	2	0	8.7	68.00
91	9/10/2013	9:55	10:15	0:20	7	3	0	8.6	66.00
92	9/18/2013	11:10	11:30	0:20	10	0	12	12.5	206.00
93	9/19/2013	10:40	10:55	0:15	7	1	100	8.0	60.00
94	9/20/2013	6:58	7:21	0:23	14	0	60	13.4	255.00
95	9/23/2013	7:03	7:12	0:09	7	1	9	8.9	72.00
96	9/23/2013	8:47	9:09	0:22	7	1	30	9.4	85.00
97	9/23/2013	11:17	13:45	2:28	10	0	320	8.0	60.00
98	9/24/2013	6:45	6:58	0:13	9	3	0	8.5	66.00
99	9/24/2013	8:29	8:57	0:28	9	2	0	9.0	74.00
100	9/24/2013	14:40	16:00	1:20	8	0	100	12.0	181.00
101	9/24/2013	13:20	13:55	0:35	14	4	100	12.8	221.00
102	9/24/2013	11:10	11:25	0:15	16	5	100	15.0	357.00
103	9/25/2013	8:10	9:15	1:05	15	2	120	12.0	181.00
104	9/26/2013	9:25	9:50	0:25	8	3	40	9.0	74.00
105	9/27/2013	8:10	8:49	0:39	10	2	15	9.5	88.00
106	9/27/2013	12:30	13:20	0:50	7	2	140	15.0	357.00
107	9/27/2013	15:20	15:45	0:25	10	0	120	8.0	60.00
108	10/1/2013	8:40	9:05	0:25	9	0	260	10.0	103.00
109	10/1/2013	9:47	10:20	0:33	13	2	120	11.3	150.00
110	10/2/2013	8:30	9:20	0:50	19	0	120	13.0	232.00
111	10/3/2013	9:45	10:10	0:25	8	3	100	8.0	60.00
112	10/15/2013	11:05	11:20	0:15	7	3	100	8.0	60.00
113	10/15/2013	9:15	10:02	0:47	9	0	30	9.3	82.00
114	10/16/2013	10:45	11:45	1:00	8	2	30	8.7	68.00
115	10/16/2013	7:20	8:05	0:45	9	2	45	8.4	64.00

116	10/24/2013	8:02	8:10	0:08	9	2	0	9.2	79.00
117	10/29/2013	10:48	12:13	1:25	9	0	60	8.0	60.00
118	10/29/2013	7:50	8:20	0:30	12	2	100	9.5	88.00
119	10/31/2013	8:50	9:45	0:55	7	0	60	8.0	64.00
120	11/1/2013	10:20	11:00	0:40	8	0	80	9.4	85.00
121	11/2/2013	11:55	12:15	0:20	9	2	100	9.7	93.00
122	11/3/2013	11:40	12:20	0:40	11	3	100	10.2	102.00
123	11/3/2013	9:50	10:00	0:10	13	2	100	10.4	116.00
124	11/12/2013	10:53	11:07	0:14	8	1	20	9.5	88.00
125	11/16/2013	9:43	9:58	0:15	9	1	30	9.2	77.00
126	11/18/2013	10:05	10:25	0:20	7	3	80	8.0	60.00
127	12/2/2013	8:30	9:00	0:30	16	0	100	12.0	181.00
Mean				**0:35**	**10**	**1**	**73**	**10.10**	**118.72**
Sum					**1255**	**156**	**9290**		**14840**

SUMMARY OF INFRACTIONS REPORTS RECEIVED BY THE COMMISSION FOR 2014 AND 2015

Under the terms of the Convention, each Contracting Government is required to transmit to the Commission full details of each infraction of the provisions of the Convention committed by persons and vessels under the jurisdiction of the Government. Note that although lost whales are traditionally reported, they are not intrinsically infractions.

Aboriginal subsistence catches and infractions are summarised in tables 1a-b. Catch and associated data for commercial and scientific permit catches were submitted to the IWC Secretariat (IWC/66/Rep 1 (2015) and (2016)). The data for commercial catches and other infractions are summarised in tables 1c-d.

Table 2 gives details of the infractions reported in the 2014 and 2015 seasons and Table 3 gives information on the unresolved infractions from previous years.

Table 1a. Summary of Aboriginal subsistence catches and infractions reported for the 2014 season.

Country	Species	Males	Females	Total landed	Struck and lost	Total Strikes	Infractions / Comments
Denmark							
West Greenland	Fin	6	5	11	1	12	None
	Minke	27	115	144[1]	2	146	None
	Humpback	2	4	6	1	7	None
East Greenland	Minke	1	9	11[2]	0	11	None
St Vincent and The Grenadines							
	Humpback	0	0	0	2	2	None
USA							
	Bowhead	19	18	38[2]	15	53	None
Russian Federation							
	Gray	42	80	122	2	124	None

Table 1b. Summary of Aboriginal subsistence catches and infractions reported for the 2015 season.

Country	Species	Males	Females	Total landed	Struck and lost	Total Strikes	Infractions / Comments
Denmark							
West Greenland	Fin	2	8	10	2	12	None
	Minke	26	101	130[3]	3	133	None
	Humpback	2	4	6	0	6	None
	Bowhead	0	1	1	0	1	None
East Greenland	Minke	0	6	6	0	6	None
St Vincent and The Grenadines							
	Humpback	1	0	1	0	1	None
USA							
	Bowhead	20	19	39	10	49	1 (Infraction 2015.1)
Russian Federation							
	Gray	49	75	124[4]	1	125	None

[1] Includes 2 whales of unknown sex
[2] Includes 1 whale of unknown sex
[3] Includes 3 whales of unknown sex
[4] Includes 1 whale that was inedible due to strong chemical smell

Table 1c. Summary of Commercial catches and any infractions reported for the 2014 season.

Nation	Species	Males	Females	Total Landed	Lost	Total	Infractions / Comments
ICELAND							
	Fin	81	53	134	3	137	None (see note [5])
	Minke	16	7	23	1	24	None
NORWAY							
	Minke	235	494	731[6]	5	736	None
REPUBLIC OF KOREA							
	Minke					11	11 (Infractions 2014.1-11)

Table 1d. Summary of Commercial catches and any infractions reported for the 2015 season.

Nation	Species	Males	Females	Total Landed	Lost	Total	Infractions/ Comments
ICELAND							
	Fin	87	67	154	1	155	None
	Minke	21	8	29	0	29	None
NORWAY							
	Minke	159	501	660	0	660	None
REPUBLIC OF KOREA (see [7])							
	Minke					14	14 (Infractions 2015.3-16)
	Right whale					1	1 (Infraction 2015.17)
	Unidentified					1	1 (Infraction 2015.2)

[5] The catch included a lactating whale but it was not accompanied by a calf and could not be identified as such until after it was caught. Hence it is not reported as an infraction.

[6] Includes 2 whales of unknown sex

[7] Korea also reports that 23 porpoises were taken illegally

Table 2a. List of infractions from the 2014 season

No. 2014-	Nation	Species	Sex	Length	Date	Infraction (specify)[1]	Explanation[2]	Penalty/Action[3]	Investigatn. complete?
1	Korea	Minke whale (1)	Unk.	Unk.	11 Nov. 2014	No Quota (Illegal Catch)	On 11 Nov 2014 ~12:20 a Minke whale was seen 6 miles east of Samcheok Port. The violators harpooned the whale which died from blood loss. A vessel waiting nearby dismembered and transported the whale.	Total : Eight violators - 2 violators: 8-month imprisonment - 2 violators: 7-month imprisonment, 2-year probation - 2 violators: monetary penalty(KRW 5 million) - 1 violators: monetary penalty(KRW 3 million)	
2	Korea	Minke whale (1)	Unk.	Unk	27 Jan. 2014	No Quota (Illegal Catch and transportation)	On 27 Jan 2014 ~12:00 the suspected ship, *Chilsan*, departed from Yeonggwang for gray mullet. On the same day ~16:00 at the southeast from Ahnma-do, an unidentified fishing vessel in preparation for fishing operation suddenly approached and asked for the destination. After identifying the destination as Jeollanam-do, Yeonggwang-gun, Yeomsan-myun, Weolpyung, they handed over one mobile phone and ~50 sacks onto the *Chilsan* and stated that a car will approach on entry into the port and hand over KRW 3 million. Thus, while transporting the 50 sacks, the ship got caught in a fishing net then they disposed the sacks.	Total : Two violators - 1 violator: monetary penalty(KRW 5 million) - 1 violator: prosecution suspended	
3	Korea	Minke whale	Unk.	Unk.	3 Mar 2014	No Quota (Illegal Catch and Transportation)	On 3 Mar 2014 ~18:00, the captain of the ship 2011*Dongjin* received an offer of KRW1.5 million in return for transportation by an unknown person when he was about to board the ship. He received 3 sacks of dismembered whale (approximately 500kg) in waters between Okdo-myun, Bangchook-do and Myung-do, and took them to the oil depot of National Fisheries Federation Cooperation in Gunsan-si, Bieung-do the same day. They were found on arrival when they were about to be transshipped to a 1 ton refrigerator truck and distributed.	Total : Seven violators - 1 violator: monetary penalty(KRW 3 million) - 1 violator: non-prosecution - 1 violator: monetary penalty(KRW 1 million) - 1 violator: monetary penalty(KRW 3 million) Dismembered whale meat: confiscated	
4	Korea	Minke whale	Unk.	Unk.	20 May 2014	No Quota (Illegal Transportation)	On 20 May 2014 ~00:20, at the Yamido dock of Okdo-myun, Yamido-ri, chief Yamido branch officer identified ship *Youngjin* unloading products which he assumed to be an illegal catch from a refrigerator. The ship was arrested at once while transferring dismembered whale (approximately 1,500 kg) from a refrigerator truck.	- 1 violator: 6-month imprisonment, 1-year probation Dismembered whale meat: confiscated	
5	Korea	Minke whale	Unk.	Unk (Dismembered)	20 Mar 2014	No Quota (Illegal Transportation and Storage)	On 20 Mar 2014 ~03:00, on the road near Gyeongju-si, Angang-eup, Nodang-ri, a violator was approached by an unknown person transporting an illegal Minke whale on a ton porter vehicle, and moved it to a rented workplace in 496 Nodang-ri, Angang-eup, for dismemberment. 93 sacks of illegally captured and dismembered whale meat were	Total : Four violators - Two violators : on trial - Two violators : non-prosecution (lack of evidence)	

No. 2014-	Nation	Species	Sex	Length	Date	Infraction (specify)[1]	Explanation[2]	Penalty/Action[3]	Investigatn. complete?
							handed over and stored.		
6	Korea	Minke whales (1)	Unk.	4.5m	1 Apr 2014	No Quota (Illegal Catch)	On 1 Apr 2014, ship 205*Gwangsung* departed Yangpo port and on 3 Apr, ~13:30, a Minke whale was found caught in the line while hauling up the fishing trap set on an unidentified date. The whale was raised and then reported to Yangpo branch office.	Non-prosecution (stay of prosecution) Suspect unidentified	
7	Korea	Minke whale	Unk.	Unk	27 Jun 2014	No Quota (Illegal Catch)	On 27 Jun 2014, ~19:50, at sea 2 miles east from Pohang-si, Songra-myun, Hwajin-ri, a violator was caught while pulling up 3 nets of whale meat from a signal buoy. An unknown person informed on him.	- 1 violator: monetary penalty (KRW 5 million)	
8	Korea	Minke whales (1)	Unk.	6m	21 Jul. 2014	No Quota (Illegal Catch)	On 21 Jul 2014, ~07:00, at Chuksan port of Gyeongbuk, Yeongdeok-gun, Chuksan-myeon, a captain departed for illegal snow crab fishing boat observation. On the same day, around 10:50, a dead Minke whale caught using a harpoon was found and reported.	Non-prosecution (prosecution suspended) Suspect unidentified	
9	Korea	Minke whale	Unk.	Unk.	21 Aug. 2014	No Quota (Illegal Catch)	On 21 Aug 2014, ~12:00, at sea about 14 miles northeast from Jukbyun port of Uljin-gun, Jukbyun-myeon, ship 212*Hochang* (57ton, Jukbyun vessel, trawler, 10 crew on board) in operation detected a piece of meat (length 110cm, circumference 140cm) which was assumed to be a Minke whale when hauling the net, and reported it to the Jukbyun police substation.	Conclusion of examination Suspect unidentified	
10	Korea	Minke whale	Unk.	Unk.	28 Sep. 2014	No Quota (Illegal Catch)	On 28 Sep 2014, ~11:00, at Chiksan port of Uljin-gun, Pyeonghae-eop, the violators boarded the ship *Haeju* (4.91 ton) for an unknown sea where they caught a Minke whale, dismembered it on board, put the meat into sacks and concealed them under water near the seawall of Uljin-gun, Pyeonghae-eop, Jiksan-ri. (14 net sacks of whale meat found)	- Three violators : on trial	
11	Korea	Minke whale	Unk.	Unk.	20 Oct. 2014	No Quota (Illegal Transportation and Storage)	On an unknown date, an unknown ship caught a Minke whale in an illegal way not permitted by the Fishing Act, transported 20 boxes of meat to the Ilshin Machinery's cold storage area and stored them.	- Two violators : on trial - One violator: non-prosecution (lack of evidence)	

Table 2b. List of infractions from the 2015 season.

No. 2015-	Nation	Species	Sex	Length	Date	Infraction (specify)[1]	Explanation[2]	Penalty/Action[3]	Investigation complete?[4]
1	USA	Balaena mysticetus	F	5.7m	5 May 16	Calf	A very experienced crew inadvertently struck a calf, having incorrectly identified it as a larger whale.	The AEWC staff and Board of Commissioners conducted an investigation of the incident and held a hearing to take testimony from the captain and crew. Under the circumstances, including recognition of the fact that this experienced captain had never before committed an infraction, it was determined that a warning would be issued but no penalty would be imposed.	
2	Korea	Unidentified	Unk.	Unk.	13 Jan. 2015	No Quota (Illegal Transportation)	On 13 Jan 2015 at 5:00 pm the violators departed from a port in Eocheong Island (Okdo-myeon, Gunsan city) on board the vessel *Changshin* in order to transport illegally captured whales. The *Changshin* was moored with another whaler (7 tons, no other details) 0.5 miles northeast of Eocheong Island at 8:00 pm. The two violators illegally captured and dismembered a whale, and were arrested 0.5 miles north of Hyeonggyeongdo (Okdo-myeon) at 11:30 pm.	Total : Two violators - 1 violator: monetary penalty (US$5 thousand) - 1 violator: prosecution suspended Dismembered whale meat: confiscated	(Gusan Police office)
3	Korea	Minke whale (1)	Unk.	4.6m	21 Feb. 2015	No Quota (Illegal Catch)	It was reported as follows: When hauling a set net at a point about two miles east of Osan Port at 4:10 am on 21 Feb 2015, the violators found a live minke whale entangled in the net. They tied a rope to the whale's tail and kept it hanging upside down with its head and blowhole submerged under the sea. By doing so, they let whale die and illegally captured it.	Total : Three violators - 3 Violators : non-prosecution (lack of evidence)	(Pohang Police office)
4	Korea	Minke whale	Unk.	Unk	10 June 2015	No Quota (Illegal Transportation and Storage)	After plotting in advance, the violator received about 68 bags of illegally caught whale meat (1,100kg) from an unknown vessel on 10 June 2015 at a prearranged place. On the same date, the vessel was detected by police officers while mooring at Hajeong 3-ri Port (Guryongpo-eup, Nam-gu Pohang-si) at 3:50 p.m. and the violators ran away abandoning the vessel.	Total : Seven violators - 5 violators: on trial - 1 violator : non-prosecution (suspension of prosecution) - 1 violator: non-prosecution (lack of evidence)	(Pohang Police office)
5	Korea	Minke whale	Unk.	Unk.	24 Aug. 2015	No Quota (Illegal Transportation & Storage)	Upon proposal by an unknown person to transport whale meat, the violator went on board the vessel *Biyong* at Jigyeong Port at 2:00 pm on 23 Aug 2015. The vessel received 40 bags of dismembered whale meat at a point twelve miles east of Jigyeong Port.	Total : Three violators Three violators: on trial	(Pohang Police office)

6-9	Korea	Minke whales (4) & porpoise (23)	Unk.	6.3 m	2 April 2015	No Quota (Illegal Catch)	In the period from early Nov. 2014 to late April 2015, four minke whales and 23 porpoise (total of 27) had been captured.	Total : Eight violators - 1 violator: 10-month imprisonment, monetary penalty (US$ 3 thousand) - 1 violator : 6-month imprisonment, monetary penalty (US$ 1 thousand) - 1 violator : 6-month imprisonment, monetary penalty (US$ 2 thousand) - 2 violators : monetary penalty (US$ 4 thousand) - 1 violator : 6-mth imprisonment, monetary penalty (US$ 1 thousand) -1 violator: 6mth imprisonment, 2yr probation monetary penalty (US$ 1 thousand) - 1 violator : non-prosecution (lack of evidence)	(Ulsan Police office)
10-13	Korea	Minke whales (4)	Unk.	Unk.	25 April 2015	No Quota (Illegal Catch)	In February 2015, a minke whale was captured in the waters off Jeollanam-do. In April 2015, three minke whales were captured in the East Sea.	On trial	(Ulsan Police office)
14	Korea	Minke whale (1)	Unk.	Unk.	29 May 2015	No Quota (Illegal Catch)	A minke whale swimming in the coastal sea of Dong-gu, Ulsan was captured illegally.	On trial	(Ulsan Police office)
15	Korea	Minke whale	Unk.	Unk.	16 June 2015	No Quota (Illegal transportation)	Violators were prompted by unknown person(s) to transport illegally captured and dismembered whale meat to land in return for KRW 3.5 million. At 5:00 pm on 16 June 2015, the violators received 34 bags of illegally captured and dismembered minke whale meat (340.2 kg, confiscated) from the captain of unknown illegal whaler in waters near Songi Island (Yeonggwang-gun, Jeollanam-do) and retained them on board. They were alleged to take the meat to waters 1.5 miles from Songseok-ri, Muan-gun Jeoallanam-do at 00:17 am on 17 June 2015.	Total : Three violators - 1 violator: monetary penalty US$ 5 thousand Proceeds from sale of whale meat: confiscated (sentence handed down on April 12 / not yet finalized) - 2 violators :non-prosecution	(Mokpo Police office)
16-17	Korea	Minke whale (1) & Right Whale (1)	Unk.	Unk.	19 Oct. 2015	No Quota (Illegal Catch and transportation)	Violators were arrested while transporting illegally captured and dismembered whales by a leisure boat in the coastal waters of Ilsan-dong, Dong-gu, Ulsan. The whaler(s) is being traced.	Total : Seventeen violators - 1 violator : 8-month imprisonment - 16 violators : under investigation	(Ulsan Police office)

Table 3. List of unresolved or previously unreported infractions from earlier seasons and follow-up actions.

Year & No.	Nation	Species	Sex	Length	Date	Infraction (specify)[1]	Explanation[2]	Penalty/Action[3]	Investigation complete?[4]
2012-1	Denmark (Greenland)	Humpback whale	Female	14 m	7/11 2012	Killing method, use of cold harpoon	Ilulissat (West Greenland). Report from regional Wildlife Officer on killing method (cold harpoon) used for secondary killing.	Reported to the Police. Investigation stopped, expired	Stopped.

International Convention

for the

Regulation of Whaling, 1946

Schedule

As amended by the Commission at the 67th Meeting

Florianópolis, Brazil, September 2018

INTERNATIONAL
WHALING COMMISSION

International Convention

for the

Regulation of Whaling, 1946

Schedule

EXPLANATORY NOTES

The Schedule printed on the following pages contains the amendments made by the Commission at its 67th Meeting in September 2018. The amendments, which are shown in ***italic bold*** type, come into effect on 29 December 2018.
In Tables 1, 2 and 3 unclassified stocks are indicated by a dash. Other positions in the Tables have been filled with a dot to aid legibility.
Numbered footnotes are integral parts of the Schedule formally adopted by the Commission. Other footnotes are editorial.
The Commission was informed in June 1992 by the ambassador in London that the membership of the Union of Soviet Socialist Republics in the International Convention for the Regulation of Whaling from 1948 is continued by the Russian Federation.
The Commission recorded at its 39th (1987) meeting the fact that references to names of native inhabitants in Schedule paragraph 13(*b*)(4) would be for geographical purposes alone, so as not to be in contravention of Article V.2(c) of the Convention (*Rep. int. Whal. Commn* 38:21).

I. INTERPRETATION

1. The following expressions have the meanings respectively assigned to them, that is to say:

A. Baleen whales

"baleen whale" means any whale which has baleen or whale bone in the mouth, i.e. any whale other than a toothed whale.

"blue whale" (*Balaenoptera musculus*) means any whale known as blue whale, Sibbald's rorqual, or sulphur bottom, and including pygmy blue whale.

"bowhead whale" (*Balaena mysticetus*) means any whale known as bowhead, Arctic right whale, great polar whale, Greenland right whale, Greenland whale.

"Bryde's whale" (*Balaenoptera edeni*, *B. brydei*) means any whale known as Bryde's whale.

"fin whale" (*Balaenoptera physalus*) means any whale known as common finback, common rorqual, fin whale, herring whale, or true fin whale.

"gray whale" (*Eschrichtius robustus*) means any whale known as gray whale, California gray, devil fish, hard head, mussel digger, gray back, or rip sack.

"humpback whale" (*Megaptera novaeangliae*) means any whale known as bunch, humpback, humpback whale, humpbacked whale, hump whale or hunchbacked whale.

"minke whale" (*Balaenoptera acutorostrata*, *B. bonaerensis*) means any whale known as lesser rorqual, little piked whale, minke whale, pike-headed whale or sharp headed finner.

"pygmy right whale" (*Caperea marginata*) means any whale known as southern pygmy right whale or pygmy right whale.

"right whale" (*Eubalaena glacialis*, *E. australis*) means any whale known as Atlantic right whale, Arctic right whale, Biscayan right whale, Nordkaper, North Atlantic right whale, North Cape whale, Pacific right whale, or southern right whale.

"sei whale" (*Balaenoptera borealis*) means any whale known as sei whale, Rudolphi's rorqual, pollack whale, or coalfish whale.

B. Toothed whales

"toothed whale" means any whale which has teeth in the jaws.

"beaked whale" means any whale belonging to the genus Mesoplodon, or any whale known as Cuvier's beaked whale (*Ziphius cavirostris*), or Shepherd's beaked whale (*Tasmacetus shepherdi*).

"bottlenose whale" means any whale known as Baird's beaked whale (*Berardius bairdii*), Arnoux's whale (*Berardius arnuxii*), southern bottlenose whale (*Hyperoodon planifrons*), or northern bottlenose whale (*Hyperoodon ampullatus*).

"killer whale" (*Orcinus orca*) means any whale known as killer whale or orca.

"pilot whale" means any whale known as long-finned pilot whale (*Globicephala melaena*) or short-finned pilot whale (*G. macrorhynchus*).

"sperm whale" (*Physeter macrocephalus*) means any whale known as sperm whale, spermacet whale, cachalot or pot whale.

C. General

"strike" means to penetrate with a weapon used for whaling.

"land" means to retrieve to a factory ship, land station, or other place where a whale can be treated.

"take" means to flag, buoy or make fast to a whale catcher.

"lose" means to either strike or take but not to land.

"dauhval" means any unclaimed dead whale found floating.

"lactating whale" means (a) with respect to baleen whales - a female which has any milk present in a mammary gland, (b) with respect to sperm whales - a female which has milk present in a mammary gland the maximum thickness (depth) of which is 10cm or more. This measurement shall be at the mid ventral point of the mammary gland perpendicular to the body axis, and shall be logged to the nearest centimetre; that is to say, any gland between 9.5cm and 10.5cm shall be logged as 10cm. The measurement of any gland which falls on an exact 0.5 centimetre shall be logged at the next 0.5 centimetre, e.g. 10.5cm shall be logged as 11.0cm.

However, notwithstanding these criteria, a whale shall not be considered a lactating whale if scientific (histological or other biological) evidence is presented to the appropriate national authority establishing that the whale could not at that point in its physical cycle have had a calf dependent on it for milk.

"small-type whaling" means catching operations using powered vessels with mounted harpoon guns hunting exclusively for minke, bottlenose, beaked, pilot or killer whales.

II. SEASONS

Factory Ship Operations

2. (a) It is forbidden to use a factory ship or whale catcher attached thereto for the purpose of taking or treating baleen whales except minke whales, in any waters south of 40° South Latitude except during the period from 12th December to 7th April following, both days inclusive.
   (b) It is forbidden to use a factory ship or whale catcher attached thereto for the purpose of taking or treating sperm or minke whales, except as permitted by the Contracting Governments in accordance with sub-paragraphs (*c*) and (*d*) of this paragraph, and paragraph 5.
   (c) Each Contracting Government shall declare for all factory ships and whale catchers attached thereto under its jurisdiction, an open season or seasons not to exceed eight months out of any period of twelve months during which the taking or killing of sperm whales by whale catchers may be permitted; provided that a separate open season may be declared for each factory ship and the whale catchers attached thereto.
   (d) Each Contracting Government shall declare for all factory ships and whale catchers attached thereto under its jurisdiction one continuous open season not to exceed six months out of any period of twelve months during which the taking or killing of minke whales by the whale catchers may be permitted provided that:
      (1) a separate open season may be declared for each factory ship and the whale catchers attached thereto;
      (2) the open season need not necessarily include the whole or any part of the period declared for other baleen whales pursuant to sub-paragraph (a) of this paragraph.
3. It is forbidden to use a factory ship which has been used during a season in any waters south of 40° South Latitude for the purpose of treating baleen whales, except minke whales, in any other area except the North Pacific Ocean and its dependent waters north of the Equator for the same purpose within a period of one year from the termination of that season; provided that catch limits in the North Pacific Ocean and dependent waters are established as provided in paragraphs 12 and 16 of this Schedule and provided that this paragraph shall not apply to a ship which has been used during the season solely for freezing or salting the meat and entrails of whales intended for human food or feeding animals.

Land Station Operations

4. (a) It is forbidden to use a whale catcher attached to a land station for the purpose of killing or attempting to kill baleen and sperm whales except as permitted by the Contracting Government in accordance with sub-paragraphs (*b*), (*c*) and (*d*) of this paragraph.
   (b) Each Contracting Government shall declare for all land stations under its jurisdiction, and whale catchers attached to such land stations, one open season during which the taking or killing of baleen whales, except minke whales, by the whale catchers shall be permitted. Such open season shall be for a period of not more than six consecutive months in any period of twelve months and shall apply to all land stations under the jurisdiction of the Contracting Government; provided that a separate open season may be declared for any land station used for the taking or treating of baleen whales, except minke whales, which is more than 1,000 miles from the nearest land station used for the taking or treating of baleen whales, except minke whales, under the jurisdiction of the same Contracting Government.
   (c) Each Contracting Government shall declare for all land stations under its jurisdiction and for whale catchers attached to such land stations, one open season not to exceed eight continuous months in any one period of twelve months, during which the taking or killing of sperm whales by the whale catchers shall be permitted; provided that a separate open season may be declared for any land station used for the taking or treating of sperm whales which is more than 1,000 miles from the nearest land station used for the taking or treating of sperm whales under the jurisdiction of the same Contracting Government.
   (d) Each Contracting Government shall declare for all land stations under its jurisdiction and for whale catchers attached to such land stations one open season not to exceed six continuous months in any period of twelve months during which the taking or killing of minke whales by the whale catchers shall be permitted (such period not being necessarily concurrent with the period declared for other baleen whales, as provided for in sub-paragraph (*b*) of this paragraph); provided that a separate open season may be declared for any land station used for the taking or treating of minke whales which is more than 1,000 miles from the nearest land station used for the taking or treating of minke whales under the jurisdiction of the same Contracting Government.

   Except that a separate open season may be declared for any land station used for the taking or treating of minke whales which is located in an area having oceanographic conditions clearly distinguishable from those of the area in which are located the other land stations used for the taking or treating of minke whales under the jurisdiction of the same Contracting Government; but the declaration of a separate open season by virtue of the provisions of this sub-paragraph shall not cause thereby the period of time covering the open seasons declared by the same Contracting Government to exceed nine continuous months of any twelve months.

(e) The prohibitions contained in this paragraph shall apply to all land stations as defined in Article II of the Whaling Convention of 1946.

Other Operations

5. Each Contracting Government shall declare for all whale catchers under its jurisdiction not operating in conjunction with a factory ship or land station one continuous open seasons not to exceed six months out of any period of twelve months during which the taking or killing of minke whales by such whale catchers may be permitted. Notwithstanding this paragraph one continuous open season not to exceed nine months may be implemented so far as Greenland is concerned. ***This paragraph shall not apply to aboriginal subsistence whaling under paragraphs 13(b)(3)(ii) and 13(b)(3)(iii).***

III. CAPTURE

6. The killing for commercial purposes of whales, except minke whales using the cold grenade harpoon shall be forbidden from the beginning of the 1980/81 pelagic and 1981 coastal seasons. The killing for commercial purposes of minke whales using the cold grenade harpoon shall be forbidden from the beginning of the 1982/83 pelagic and the 1983 coastal seasons.*

7. (a) In accordance with Article V(1)(*c*) of the Convention, commercial whaling, whether by pelagic operations or from land stations, is prohibited in a region designated as the Indian Ocean Sanctuary. This comprises the waters of the Northern Hemisphere from the coast of Africa to 100°E, including the Red and Arabian Seas and the Gulf of Oman; and the waters of the Southern Hemisphere in the sector from 20°E to 130°E, with the Southern boundary set at 55°S. This prohibition applies irrespective of such catch limits for baleen or toothed whales as may from time to time be determined by the Commission. This prohibition shall be reviewed by the Commission at its Annual Meeting in 2002.☼

(b) In accordance with Article V(1)(*c*) of the Convention, commercial whaling, whether by pelagic operations or from land stations, is prohibited in a region designated as the Southern Ocean Sanctuary. This Sanctuary comprises the waters of the Southern Hemisphere southwards of the following line: starting from 40 degrees S, 50 degrees W; thence due east to 20 degrees E; thence due south to 55 degrees S; thence due east to 130 degrees E; thence due north to 40 degrees S; thence due east to 130 degrees W; thence due south to 60 degrees S; thence due east to 50 degrees W; thence due north to the point of beginning. This prohibition applies irrespective of the conservation status of baleen and toothed whale stocks in this Sanctuary, as may from time to time be determined by the Commission. However, this prohibition shall be reviewed ten years after its initial adoption and at succeeding ten year intervals, and could be revised at such times by the Commission. Nothing in this sub-paragraph is intended to prejudice the special legal and political status of Antarctica.**+

Area Limits for Factory Ships

8. It is forbidden to use a factory ship or whale catcher attached thereto, for the purpose of taking or treating baleen whales, except minke whales, in any of the following areas:
   (a) in the waters north of 66°N, except that from 150°E eastwards as far as 140°W, the taking or killing of baleen whales by a factory ship or whale catcher shall be permitted between 66°N and 72°N;
   (b) in the Atlantic Ocean and its dependent waters north of 40°S;
   (c) in the Pacific Ocean and its dependent waters east of 150°W between 40°S and 35°N;
   (d) in the Pacific Ocean and its dependent waters west of 150°W between 40°S and 20°N;
   (e) in the Indian Ocean and its dependent waters north of 40°S.

Classification of Areas and Divisions

9. (a) *Classification of Areas*
   Areas relating to Southern Hemisphere baleen whales except Bryde's whales are those waters between the ice-edge and the Equator and between the meridians of longitude listed in Table 1.
   (b) *Classification of Divisions*
   Divisions relating to Southern Hemisphere sperm whales are those waters between the ice-edge and the Equator and between the meridians of longitude listed in Table 3.
   (c) *Geographical boundaries in the North Atlantic*
   The geographical boundaries for the fin, minke and sei whale stocks in the North Atlantic are:

FIN WHALE STOCKS

NOVA SCOTIA
South and West of a line through:
47°N 54°W, 46°N 54°30'W,
46°N 42°W, 20°N 42°W.

NEWFOUNDLAND-LABRADOR
West of a line through:
75°N 73°30'W, 69°N 59°W, 61°N 59°W,
52°20'N 42°W, 46°N 42°W and
North of a line through:
46°N 42°W, 46°N 54°30'W, 47°N 54°W.

WEST GREENLAND
East of a line through:
75°N 73°30'W, 69°N 59°W,
61°N 59°W, 52°20'N 42°W,
and West of a line through
52°20'N 42°W, 59°N 42°W,
59°N 44°W, Kap Farvel.

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*The Governments of Brazil, Iceland, Japan, Norway and the Union of Soviet Socialist Republics lodged objections to the second sentence of paragraph 6 within the prescribed period. For all other Contracting Governments this sentence came into force on 8 March 1982. Norway withdrew its objection on 9 July 1985 and Brazil on 8 January 1992. Iceland withdrew from the Convention with effect from 30 June 1992. The objections of Japan and the Russian Federation not having been withdrawn, this sentence is not binding upon these governments.

☼At its 54th Annual Meeting in 2002, the Commission agreed to continue this prohibition but did not discuss whether or not it should set a time when it should be reviewed again.

**The Government of Japan lodged an objection within the prescribed period to paragraph 7(*b*) to the extent that it applies to the Antarctic minke whale stocks. The Government of the Russian Federation also lodged an objection to paragraph 7(*b*) within the prescribed period but withdrew it on 26 October 1994. For all Contracting Governments except Japan paragraph 7(*b*) came into force on 6 December 1994.

+Paragraph 7(*b*) contains a provision for review of the Southern Ocean Sanctuary "ten years after its initial adoption". Paragraph 7(*b*) was adopted at the 46th (1994) Annual Meeting. The first review was completed in 2004, and the second in 2016.

EAST GREENLAND-ICELAND
East of a line through:
Kap Farvel (South Greenland),
59°N 44°W, 59°N 42°W, 20°N 42°W,
and West of a line through:
20°N 18°W, 60°N 18°W, 68°N 3°E,
74°N 3°E, and South of 74°N.

NORTH NORWAY
North and East of a line through:
74°N 22°W, 74°N 3°E, 68°N 3°E,
67°N 0°, 67°N 14°E.

WEST NORWAY-FAROE ISLANDS
South of a line through:
67°N 14°E, 67°N 0°, 60°N 18°W,
and North of a line through:
61°N 16°W, 61°N 0°, Thyborøn
(Western entrance to Limfjorden, Denmark).

SPAIN-PORTUGAL-BRITISH ISLES
South of a line through:
Thyborøn (Denmark), 61°N 0°, 61°N 16°W,
and East of a line through:
63°N 11°W, 60°N 18°W, 22°N 18°W.

MINKE WHALE STOCKS
CANADIAN EAST COAST
West of a line through:
75°N 73°30'W, 69°N 59°W, 61°N 59°W,
52°20'N 42°W, 20°N 42°W.

CENTRAL
East of a line through:
Kap Farvel (South Greenland),
59°N 44°W, 59°N 42°W, 20°N 42°W,
and West of a line through:
20°N 18°W, 60°N 18°W, 68°N 3°E,
74°N 3°E, and South of 74°N.

WEST GREENLAND
East of a line through:
75°N 73°30'W, 69°N 59°W, 61°N 59°W,
52°20'N 42°W, and
West of a line through:
52°20'N 42°W, 59°N 42°W,
59°N 44°W, Kap Farvel.

NORTHEASTERN
East of a line through:
20°N 18°W, 60°N 18°W, 68°N 3°E, 74°N 3°E,
and North of a line through:
74°N 3°E, 74°N 22°W.

SEI WHALE STOCKS
NOVA SCOTIA
South and West of a line through:
47°N 54°W, 46°N 54°30'W, 46°N 42°W,
20°N 42°W.

ICELAND-DENMARK STRAIT
East of a line through:
Kap Farvel (South Greenland),
59°N 44°W, 59°N 42°W, 20°N 42°W,
and West of a line through:
20°N 18°W, 60°N 18°W, 68°N 3°E,
74°N 3°E, and South of 74°N.

EASTERN
East of a line through:
20°N 18°W, 60°N 18°W, 68°N 3°E, 74°N 3°E,
and North of a line through:
74°N 3°E, 74°N 22°W.

(d) *Geographical boundaries in the North Pacific*
The geographical boundaries for the sperm, Bryde's and minke whale stocks in the North Pacific are:

SPERM WHALE STOCKS
WESTERN DIVISION
West of a line from the ice-edge south along the 180° meridian of longitude to 180°, 50°N, then east along the 50°N parallel of latitude to 160°W, 50°N, then south along the 160°W meridian of longitude to 160°W, 40°N, then east along the 40°N parallel of latitude to 150°W, 40°N, then south along the 150°W meridian of longitude to the Equator.

EASTERN DIVISION
East of the line described above.

BRYDE'S WHALE STOCKS
EAST CHINA SEA
West of the Ryukyu Island chain.

EASTERN
East of 160°W (excluding the Peruvian stock area).

WESTERN
West of 160°W (excluding the East China Sea stock area).

MINKE WHALE STOCKS
SEA OF JAPAN-YELLOW SEA-EAST CHINA SEA
West of a line through the Philippine Islands, Taiwan, Ryukyu Islands, Kyushu, Honshu, Hokkaido and Sakhalin Island, north of the Equator.

OKHOTSK SEA-WEST PACIFIC
East of the Sea of Japan-Yellow Sea- East China Sea stock and west of 180°, north of the Equator.

REMAINDER
East of the Okhotsk Sea-West Pacific stock, north of the Equator.

(e) *Geographical boundaries for Bryde's whale stocks in the Southern Hemisphere*

SOUTHERN INDIAN OCEAN
20°E to 130°E,
South of the Equator.

SOLOMON ISLANDS
150°E to 170°E,
20°S to the Equator.

PERUVIAN
110°W to the South American coast,
10°S to 10°N.

EASTERN SOUTH PACIFIC
150°W to 70°W,
South of the Equator (excluding the Peruvian stock area).

WESTERN SOUTH PACIFIC
130°E to 150°W,
South of the Equator (excluding the Solomon Islands stock area).

SOUTH ATLANTIC
70°W to 20°E,
South of the Equator (excluding the South African inshore stock area).

SOUTH AFRICAN INSHORE
South African coast west of 27°E and out to the 200 metre isobath.

Classification of Stocks

10. All stocks of whales shall be classified in one of three categories according to the advice of the Scientific Committee as follows:

(a) A Sustained Management Stock (SMS) is a stock which is not more than 10 per cent of Maximum Sustainable Yield (hereinafter referred to as MSY) stock level below MSY stock level, and not more than 20 per cent above that level; MSY being determined on the basis of the number of whales.

When a stock has remained at a stable level for a considerable period under a regime of approximately constant catches, it shall be classified as a Sustained Management Stock in the absence of any positive evidence that it should be otherwise classified.

Commercial whaling shall be permitted on Sustained Management Stocks according to the advice of the Scientific Committee. These stocks are listed in Tables 1, 2 and 3 of this Schedule.

For stocks at or above the MSY stock level, the permitted catch shall not exceed 90 per cent of the MSY. For stocks between the MSY stock level and 10 per cent below that level, the permitted catch shall not exceed the number of whales obtained by taking 90 per cent of the MSY and reducing that number by 10 per cent for every 1 per cent by which the stock falls short of the MSY stock level.

(b) An Initial Management Stock (IMS) is a stock more than 20 per cent of MSY stock level above MSY stock level. Commercial whaling shall be permitted on Initial Management Stocks according to the advice of the Scientific Committee as to measures necessary to bring the stocks to the MSY stock level and then optimum level in an efficient manner and without risk of reducing them below this level. The permitted catch for such stocks will not be more than 90 per cent of MSY as far as this is known, or, where it will be more appropriate, catching effort shall be limited to that which will take 90 per cent of MSY in a stock at MSY stock level.

In the absence of any positive evidence that a continuing higher percentage will not reduce the stock below the MSY stock level no more than 5 per cent of the estimated initial exploitable stock shall be taken in any one year. Exploitation should not commence until an estimate of stock size has been obtained which is satisfactory in the view of the Scientific Committee. Stocks classified as Initial Management Stock are listed in Tables 1, 2 and 3 of this Schedule.

(c) A Protection Stock (PS) is a stock which is below 10 per cent of MSY stock level below MSY stock level.

There shall be no commercial whaling on Protection Stocks. Stocks so classified are listed in Tables 1, 2 and 3 of this Schedule.

(d) Notwithstanding the other provisions of paragraph 10 there shall be a moratorium on the taking, killing or treating of whales, except minke whales, by factory ships or whale catchers attached to factory ships. This moratorium applies to sperm whales, killer whales and baleen whales, except minke whales.

(e) Notwithstanding the other provisions of paragraph 10, catch limits for the killing for commercial purposes of whales from all stocks for the 1986 coastal and the 1985/86 pelagic seasons and thereafter shall be zero. This provision will be kept under review, based upon the best scientific advice, and by 1990 at the latest the Commission will undertake a comprehensive assessment of the effects of this decision on whale stocks and consider modification of this provision and the establishment of other catch limits.*•#

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*The Governments of Japan, Norway, Peru and the Union of Soviet Socialist Republics lodged objection to paragraph 10(*e*) within the prescribed period. For all other Contracting Governments this paragraph came into force on 3 February 1983. Peru withdrew its objection on 22 July 1983. The Government of Japan withdrew its objections with effect from 1 May 1987 with respect to commercial pelagic whaling; from 1 October 1987 with respect to commercial coastal whaling for minke and Bryde's whales; and from 1 April 1988 with respect to commercial coastal sperm whaling. The objections of Norway and the Russian Federation not having been withdrawn, the paragraph is not binding upon these Governments.

•Iceland's instrument of adherence to the International Convention for the Regulation of Whaling and the Protocol to the Convention deposited on 10 October 2002 states that Iceland 'adheres to the aforesaid Convention and Protocol with a reservation with respect to paragraph 10(*e*) of the Schedule attached to the Convention'. The instrument further states the following:

> 'Notwithstanding this, the Government of Iceland will not authorise whaling for commercial purposes by Icelandic vessels before 2006 and, thereafter, will not authorise such whaling while progress is being made in negotiations within the IWC on the RMS. This does not apply, however, in case of the so-called moratorium on whaling for commercial purposes, contained in paragraph 10(*e*) of the Schedule not being lifted within a reasonable time after the completion of the RMS. Under no circumstances will whaling for commercial purposes be authorised without a sound scientific basis and an effective management and enforcement scheme.'

#The Governments of Argentina, Australia, Brazil, Chile, Finland, France, Germany, Italy, Mexico, Monaco, the Netherlands, New Zealand, Peru, San Marino, Spain, Sweden, UK and the USA have lodged objections to Iceland's reservation to paragraph 10(*e*).

Table 1

BALEEN WHALE STOCK CLASSIFICATIONS AND CATCH LIMITS[+] (excluding Bryde's whales).

		SEI		MINKE		FIN		BLUE		RIGHT, BOWHEAD, HUMPBACK		PYGMY RIGHT		GRAY	
		Classi-fication	Catch limit	Classi-fication	Catch limit	Classi-fication	Catch limit	Classi-fication	Catch limit	Classi-fication	Catch limit	Classi-fication	Catch limit	Classi-fication	Catch limit
SOUTHERN HEMISPHERE-***2018/2019 and 2019/2020*** pelagic season and ***2019 and 2020*** coastal season															
Area															.
I	120°W-60°W	PS	0	-	0	PS	0	PS	0	PS	0	PS	0	.	.
II	60°W- 0°	PS	0	-	0	PS	0	PS	0	PS	0	PS	0	.	.
III	0°- 70°E	PS	0	-	0	PS	0	PS	0	PS	0	PS	0	.	.
IV	70°E-130°E	PS	0	-	0	PS	0	PS	0	PS	0	PS	0	.	.
V	130°E- 170°W	PS	0	-	0	PS	0	PS	0	PS	0	PS	0	.	.
VI	170°W-120°W	PS	0	-	0	PS	0	PS	0	PS	0	PS	0	.	.
Total catch not to exceed:							0		0		0		0		
NORTHERN HEMISPHERE-***2019 and 2020*** season															
ARCTIC		.	.	.	.	.	.	.	.	.	.	PS	0	.	.
NORTH PACIFIC															
Whole region		PS	0	.	.	PS	0	PS	0	PS	0	PS	0	.	.
Okhotsk Sea-West Pacific Stock		.	.	-	0	.	.	.	.	.	.	.	.	.	.
Sea of Japan-Yellow Sea-East China Sea Stock		.	.	PS	0	.	.	.	.	.	.	.	.	.	.
Remainder		.	.	IMS	0	.	.	.	.	.	.	.	.	.	.
Eastern Stock		.	.	.	.	.	.	.	.	.	.	.	.	SMS	.[1]
Western Stock		.	.	.	.	.	.	.	.	.	.	.	.	PS	0
NORTH ATLANTIC															
Whole region		.	.	.	.	.	.	PS	0	PS	0	PS	0	.	.
West Greenland Stock		.	.	PS	0	-	19[2]	.	.	.	.	.	.	.	.
Newfoundland-Labrador Stock		.	.	.	.	-	0	.	.	.	.	.	.	.	.
Canadian East Coast Stock		.	.	-	0	.	.	.	.	.	.	.	.	.	.
Nova Scotia Stock		PS	0	.	.	PS	0	.	.	.	.	.	.	.	.
Central Stock		.	.	-	.	.	.	.	.	.	.	.	.	.	.
East Greenland-Iceland Stock		.	.	.	.	SMS	0	.	.	.	.	.	.	.	.
Iceland-Denmark Strait Stock		-	0	.	.	.	.	.	.	.	.	.	.	.	.
Spain-Portugal-British Isles Stock		.	.	.	.	-	0	.	.	.	.	.	.	.	.
Northeastern Stock		.	.	PS*	0	.	.	.	.	.	.	.	.	.	.
West Norway-Faroe Islands Stock		.	.	.	.	PS	0	.	.	.	.	.	.	.	.
North Norway Stock		.	.	.	.	-	0	.	.	.	.	.	.	.	.
Eastern Stock		-	0	.	.	.	.	.	.	.	.	.	.	.	.
NORTHERN INDIAN OCEAN		.	.	IMS	0	.	.	PS	0	PS	0	PS	0	.	.

[1]Available to be taken by aborigines or a Contracting Government on behalf of aborigines pursuant to paragraph 13*(b)*2.

[2]Available to be struck by aborigines pursuant to paragraph 13*(b)*3. Catch limit for each of the years ***2019, 2020, 2021, 2022, 2023, 2024 and 2025***.

[+]The catch limits of zero introduced into Table 1 as editorial amendments as a result of the coming into effect of paragraph 10*(e)* are not binding upon the governments of the countries which lodged and have not withdrawn objections to the said paragraph.

*The Government of Norway presented objection to the classification of the Northeastern Atlantic stock of minke whales as a Protection Stock within the prescribed period. This classification came into force on 30 January 1986 but is not binding on the Government of Norway.

SCHEDULE

Table 2

Bryde's whale stock classifications and catch limits.[+]

	Classification	Catch limit
SOUTHERN HEMISPHERE-***2018/2019 and 2019/2020*** pelagic season and ***2019 and 2020*** coastal season		
South Atlantic Stock	-	0
Southern Indian Ocean Stock	IMS	0
South African Inshore Stock	-	0
Solomon Islands Stock	IMS	0
Western South Pacific Stock	IMS	0
Eastern South Pacific Stock	IMS	0
Peruvian Stock	-	0
NORTH PACIFIC-***2019 and 2020*** season		
Eastern Stock	IMS	0
Western Stock	IMS	0
East China Sea Stock	PS	0
NORTH ATLANTIC-***2019 and 2020*** season	IMS	0
NORTHERN INDIAN OCEAN-***2019 and 2020*** season	-	0

[+]The catch limits of zero introduced in Table 2 as editorial amendments as a result of the coming into effect of paragraph 10*(e)* are not binding upon the governments of the countries which lodged and have not withdrawn objections to the said paragraph.

Table 3

Toothed whale stock classifications and catch limits.[+]

SOUTHERN HEMISPHERE-***2018/2019 and 2019/2020*** pelagic season and ***2019 and 2020*** coastal season

		SPERM	
Division	Longitudes	Classification	Catch limit
1	60°W-30°W	-	0
2	30°W-20°E	-	0
3	20°E-60°E	-	0
4	60°E-90°E	-	0
5	90°-130°E	-	0
6	130°E-160°E	-	0
7	160°E-170°W	-	0
8	170°W-100°W	-	0
9	100°W-60°W	-	0
NORTHERN HEMISPHERE-***2019 and 2020*** season			
NORTH PACIFIC			
Western Division		PS	0[1]
Eastern Division		-	0
NORTH ATLANTIC		-	0
NORTHERN INDIAN OCEAN		-	0
		BOTTLENOSE	
NORTH ATLANTIC		PS	0

[1]No whales may be taken from this stock until catch limits including any limitations on size and sex are established by the Commission.
[+]The catch limits of zero introduced in Table 3 as editorial amendments as a result of the coming into effect of paragraph 10*(e)* are not binding upon the governments of the countries which lodged and have not withdrawn objections to the said paragraph.

Baleen Whale Catch Limits

11. The number of baleen whales taken in the Southern Hemisphere in the ***2018/2019 and 2019/2020*** pelagic season and the ***2019 and 2020*** coastal season shall not exceed the limits shown in Tables 1 and 2.

12. The number of baleen whales taken in the North Pacific Ocean and dependent waters in ***2019 and 2020*** and in the North Atlantic Ocean in ***2019 and 2020*** shall not exceed the limits shown in Tables 1 and 2.

13. (a) Notwithstanding the provisions of paragraph 10, catch limits for aboriginal subsistence whaling to satisfy aboriginal subsistence need for the 1984 whaling season and each whaling season thereafter shall be established in accordance with the following principles:

(1) For stocks at or above MSY level, aboriginal subsistence catches shall be permitted so long as total removals do not exceed 90 per cent of MSY.

(2) For stocks below the MSY level but above a certain minimum level, aboriginal subsistence catches shall be permitted so long as they are set at levels which will allow whale stocks to move to the MSY level.[1]

(3) The above provisions will be kept under review, based upon the best scientific advice, and by 1990 at the latest the Commission will undertake a comprehensive assessment of the effects of these provisions on whale stocks and consider modification.

(4) For aboriginal whaling conducted under subparagraphs (*b*)(1), (*b*)(2), and (*b*)(3) of this paragraph, it is forbidden to strike, take or kill calves or any whale accompanied by a calf. For aboriginal whaling conducted under subparagraphs (*b*)(4) of this paragraph, it is forbidden to strike, take or kill suckling calves or female whales accompanied by calves.

(5) All aboriginal whaling shall be conducted under national legislation that accords with this paragraph.

(6) Commencing in 2026, and provided the appropriate Strike Limit Algorithm has been developed by then, strike/catch limits (including any carry forward provisions) for each stock identified in sub-paragraph 13(b) shall be extended every six years, provided: (a) the Scientific Committee advises in 2024, and every six years thereafter, that such limits will not harm that stock; (b) the Commission does not receive a request from an ASW country relying on the stock ('relevant ASW country'), for a change in the relevant catch limits based on need; and (c) the Commission determines that the relevant ASW country has complied with the approved timeline and that the information provided represents a status quo continuation of the hunt.

(7) The provisions for each stock identified in sub-paragraph 13(b), especially the provisions for carryover, shall be reviewed by the Commission in light of the advice of the Scientific Committee.

(b) Catch limits for aboriginal subsistence whaling are as follows:

(1) The taking of bowhead whales from the Bering-Chukchi-Beaufort Seas stock by aborigines is permitted, but only when the meat and products of such whales are to be used exclusively for local consumption by the aborigines and further provided that:

(i) For the years ~~2013, 2014, 2015, 2016, 2017 and 2018~~ ***2019, 2020, 2021, 2022, 2023, 2024 and 2025***, the number of bowhead whales landed shall not exceed ~~336~~ ***392***. For each of these years the number of bowhead whales struck shall not exceed 67, except that any unused portion of a strike quota from ~~any year (including 15 unused strikes from the 2008–2012 quota)~~ ***the three prior quota blocks*** shall be carried forward and added to the strike quotas of ~~any~~ subsequent years, provided that no more than ~~15 strikes~~ ***50 percent of the annual strike limit*** shall be added to the strike quota for any one year.

~~(ii) This provision shall be reviewed annually by the Commission in light of the advice of the Scientific Committee.~~

(2) The taking of gray whales from the Eastern stock in the North Pacific is permitted, but only by aborigines or a Contracting Government on behalf of aborigines, and then only when the meat and products of such whales are to be used exclusively for local consumption by the aborigines.

(i) For the years ~~2013, 2014, 2015, 2016, 2017 and 2018~~ ***2019, 2020, 2021, 2022, 2023, 2024 and 2025***, the number of gray whales ***landed*** ~~taken in accordance with this sub-paragraph~~ shall not exceed ~~744~~ ***980***, provided that the number of gray whales ***struck*** ~~taken~~ in any one of the years ~~2013, 2014, 2015, 2016, 2017 and 2018~~ ***2019, 2020, 2021, 2022, 2023, 2024 and 2025*** shall not exceed 140***, except that any unused portion of a strike quota from the prior quota block shall be carried forward and added to the strike quotas of subsequent years, provided that no more than 50 percent of the annual strike limit shall be added to the strike quota for any one year***.

~~(ii) This provision shall be reviewed annually by the Commission in light of the advice of the Scientific Committee.~~

(3) The taking by aborigines of minke whales from the West Greenland and Central stocks ***from the East Greenland hunt*** and fin whales from the West Greenland stock and bowhead whales from the West Greenland feeding aggregation and humpback whales from the West Greenland feeding aggregation is permitted and then only when the meat and products are to be used exclusively for local consumption.

(i) The number of fin whales struck from the West Greenland stock ~~in accordance with this subparagraph~~ shall not exceed 19 in each of the years ~~2015, 2016, 2017 and 2018~~ ***2019, 2020, 2021, 2022, 2023, 2024 and 2025, except that any unused portion of a strike quota from the prior quota block under a Strike Limit Algorithm management advice shall be carried forward and added to the strike quotas of subsequent years, provided that no more than 50 percent of the annual strike limit shall be added to the strike quota for any one year***.

(ii) The number of minke whales struck from the Central stock ~~in accordance with this sub-paragraph~~ shall not exceed ~~12~~ ***20*** in each of the years ~~2015, 2016, 2017 and 2018~~ ***2019, 2020, 2021, 2022, 2023, 2024 and 2025***, except that any unused portion of ~~the~~ ***a*** strike quota ~~for each year~~ shall be carried forward ~~from that year~~ and added to the ***strike*** quota***s*** of ~~any~~ subsequent years, provided that no more than 3 ***strikes*** shall be added to the ***strike*** quota for any one year. ***Commencing in 2020, and provided a Strike Limit Algorithm for this stock has been developed by then, any unused portion of a strike quota from the prior quota block under a Strike Limit Algorithm management advice shall be carried forward and added to the strike quotas of subsequent years, provided that no more than 50 percent of the annual strike limit shall be added to the strike quota for any one year.***

(iii) The number of minke whales struck from the West Greenland stock shall not exceed 164 in each of the years ~~2015, 2016, 2017 and 2018~~ ***2019, 2020, 2021, 2022, 2023, 2024 and 2025***, except that any unused portion of ~~the~~ ***a strike*** quota ~~for each year~~ ***from the prior quota block under a Strike Limit Algorithm management advice*** shall be carried forward ~~from that year~~ and added to the strike quota**s** of ~~any of the~~ subsequent years, provided that no more than ~~15 strikes~~ ***50 percent of the annual strike limit*** shall be added to the strike quota for any one year. ~~This provision will be reviewed if new scientific data become available within the 4 year period and if necessary amended on basis of the advice of the Scientific Committee.~~

(iv) The number of bowhead whales struck off West Greenland ~~in accordance with this sub-paragraph~~ shall not exceed 2 in each of the years ~~2015, 2016, 2017 and 2018~~ ***2019, 2020, 2021, 2022, 2023, 2024 and 2025***, except that any unused portion of ~~the~~ ***a strike*** quota ~~for each year~~ ***from the prior quota block under a Strike Limit Algorithm management advice*** shall be carried forward ~~from that year~~ and added to the ***strike*** quota**s** of ~~any~~ subsequent years, provided that no more than ~~2 strikes~~ ***50 percent of the annual strike limit*** shall be added to the ***strike*** quota for any one year. ~~This provision will be reviewed if new scientific data become available within the 4 year period and if necessary amended on basis of the advice of the Scientific Committee.~~

(v) The number of humpback whales struck off West Greenland ~~in accordance with this sub-paragraph~~ shall not exceed 10 in each of the years ~~2015, 2016, 2017 and 2018~~ ***2019, 2020, 2021, 2022, 2023, 2024 and 2025***, except that any unused portion of ~~the~~ ***a strike*** quota ~~for each year~~ ***from the three prior quota blocks under a Strike Limit Algorithm management advice*** shall be carried forward ~~from that year~~ and added to the strike quota**s** of ~~any of the~~ subsequent years, provided that no more than ~~2 strikes~~ ***50 percent of the annual strike limit*** shall be added to the strike quota for any one year. ~~This provision will be reviewed if new scientific data become available within the remaining quota period and if necessary amended on basis of the advice of the Scientific Committee.~~

(4) For the seasons ~~2013-2018~~ ***2019-2025*** the number of humpback whales to be taken by the Bequians of St. Vincent and The Grenadines shall not exceed ~~24~~ ***28***. The meat and products of such whales are to be used exclusively for local consumption in St. Vincent and The Grenadines.

14. It is forbidden to take or kill suckling calves or female whales accompanied by calves.

Baleen Whale Size Limits

15. (a) It is forbidden to take or kill any sei or Bryde's whales below 40 feet (12.2 metres) in length except that sei and Bryde's whales of not less than 35 feet (10.7 metres) may be taken for delivery to land stations, provided that the meat of such whales is to be used for local consumption as human or animal food.

(b) It is forbidden to take or kill any fin whales below 57 feet (17.4 metres) in length in the Southern Hemisphere, and it is forbidden to take or kill fin whales below 55 feet (16.8 metres) in the Northern Hemisphere; except that fin whales of not less than 55 feet (16.8 metres) may be taken in the Southern Hemisphere for delivery to land

stations and fin whales of not less than 50 feet (15.2 metres) may be taken in the Northern Hemisphere for delivery to land stations, provided that, in each case the meat of such whales is to be used for local consumption as human or animal food. ***This paragraph shall not apply to aboriginal subsistence whaling under paragraph 13(b)(3)(i).***

Sperm Whale Catch Limits

16. Catch limits for sperm whales of both sexes shall be set at zero in the Southern Hemisphere for the 1981/82 pelagic season and 1982 coastal seasons and following seasons, and at zero in the Northern Hemisphere for the 1982 and following coastal seasons; except that the catch limits for the 1982 coastal season and following seasons in the Western Division of the North Pacific shall remain undetermined and subject to decision by the Commission following special or annual meetings of the Scientific Committee. These limits shall remain in force until such time as the Commission, on the basis of the scientific information which will be reviewed annually, decides otherwise in accordance with the procedures followed at that time by the Commission.
17. It is forbidden to take or kill suckling calves or female whales accompanied by calves.

Sperm Whale Size Limits

18. (a) It is forbidden to take or kill any sperm whales below 30 feet (9.2 metres) in length except in the North Atlantic Ocean where it is forbidden to take or kill any sperm whales below 35 feet (10.7 metres).
    (b) It is forbidden to take or kill any sperm whale over 45 feet (13.7 metres) in length in the Southern Hemisphere north of 40° South Latitude during the months of October to January inclusive.
    (c) It is forbidden to take or kill any sperm whale over 45 feet (13.7 metres) in length in the North Pacific Ocean and dependent waters south of 40° North Latitude during the months of March to June inclusive.

IV. TREATMENT

19. (a) It is forbidden to use a factory ship or a land station for the purpose of treating any whales which are classified as Protection Stocks in paragraph 10 or are taken in contravention of paragraphs 2, 3, 4, 5, 6, 7, 8, 11, 12, 14, 16 and 17 of this Schedule, whether or not taken by whale catchers under the jurisdiction of a Contracting Government.
    (b) All other whales taken, except minke whales, shall be delivered to the factory ship or land station and all parts of such whales shall be processed by boiling or otherwise, except the internal organs, whale bone and flippers of all whales, the meat of sperm whales and parts of whales intended for human food or feeding animals. A Contracting Government may in less developed regions exceptionally permit treating of whales without use of land stations, provided that such whales are fully utilised in accordance with this paragraph.
    (c) Complete treatment of the carcases of "dauhval" and of whales used as fenders will not be required in cases where the meat or bone of such whales is in bad condition.
20. (a) The taking of whales for treatment by a factory ship shall be so regulated or restricted by the master or person in charge of the factory ship that no whale carcase (except of a whale used as a fender, which shall be processed as soon as is reasonably practicable) shall remain in the sea for a longer period than thirty-three hours from the time of killing to the time when it is hauled up for treatment.
    (b) Whales taken by all whale catchers, whether for factory ships or land stations, shall be clearly marked so as to identify the catcher and to indicate the order of catching.

V. SUPERVISION AND CONTROL

21. (a) There shall be maintained on each factory ship at least two inspectors of whaling for the purpose of maintaining twenty-four hour inspection provided that at least one such inspector shall be maintained on each catcher functioning as a factory ship. These inspectors shall be appointed and paid by the Government having jurisdiction over the factory ship; provided that inspectors need not be appointed to ships which, apart from the storage of products, are used during the season solely for freezing or salting the meat and entrails of whales intended for human food or feeding animals.
    (b) Adequate inspection shall be maintained at each land station. The inspectors serving at each land station shall be appointed and paid by the Government having jurisdiction over the land station.
    (c) There shall be received such observers as the member countries may arrange to place on factory ships and land stations or groups of land stations of other member countries. The observers shall be appointed by the Commission acting through its Secretary and paid by the Government nominating them.
22. Gunners and crews of factory ships, land stations, and whale catchers, shall be engaged on such terms that their remuneration shall depend to a considerable extent upon such factors as the species, size and yield of whales and not merely upon the number of the whales taken. No bonus or other remuneration shall be paid to the gunners or crews of whale catchers in respect of the taking of lactating whales.
23. Whales must be measured when at rest on deck or platform after the hauling out wire and grasping device have been released, by means of a tape-measure made of a non-stretching material. The zero end of the tape- measure shall be attached to a spike or stable device to be positioned on the deck or platform abreast of one end of the whale. Alternatively the spike may be stuck into the tail fluke abreast of the apex of the notch. The tape-measure shall be held taut in a straight line parallel to the deck and the whale's body, and other than in exceptional circumstances along the whale's back,

and read abreast of the other end of the whale. The ends of the whale for measurement purposes shall be the tip of the upper jaw, or in sperm whales the most forward part of the head, and the apex of the notch between the tail flukes.

Measurements shall be logged to the nearest foot or 0.1 metre. That is to say, any whale between 75 feet 6 inches and 76 feet 6 inches shall be logged as 76 feet, and any whale between 76 feet 6 inches and 77 feet 6 inches shall be logged as 77 feet. Similarly, any whale between 10.15 metres and 10.25 metres shall be logged as 10.2 metres, and any whale between 10.25 metres and 10.35 metres shall be logged as 10.3 metres. The measurement of any whale which falls on an exact half foot or 0.05 metre shall be logged at the next half foot or 0.05 metre, e.g. 76 feet 6 inches precisely shall be logged as 77 feet and 10.25 metres precisely shall be logged as 10.3 metres.

VI. INFORMATION REQUIRED

24. (a) All whale catchers operating in conjunction with a factory ship shall report by radio to the factory ship:
    (1) the time when each whale is taken
    (2) its species, and
    (3) its marking effected pursuant to paragraph 20(b).

    (b) The information specified in sub-paragraph (a) of this paragraph shall be entered immediately by a factory ship in a permanent record which shall be available at all times for examination by the whaling inspectors; and in addition there shall be entered in such permanent record the following information as soon as it becomes available:
    (1) time of hauling up for treatment
    (2) length, measured pursuant to paragraph 23
    (3) sex
    (4) if female, whether lactating
    (5) length and sex of foetus, if present, and
    (6) a full explanation of each infraction.

    (c) A record similar to that described in sub-paragraph (b) of this paragraph shall be maintained by land stations, and all of the information mentioned in the said sub-paragraph shall be entered therein as soon as available.

    (d) A record similar to that described in sub-paragraph (b) of this paragraph shall be maintained by "small-type whaling" operations conducted from shore or by pelagic fleets, and all of this information mentioned in the said sub-paragraph shall be entered therein as soon as available.

25. (a) All Contracting Governments shall report to the Commission for all whale catchers operating in conjunction with factory ships and land stations the following information:
    (1) methods used to kill each whale, other than a harpoon, and in particular compressed air;
    (2) number of whales struck but lost.

    (b) A record similar to that described in sub-paragraph (a) of this paragraph shall be maintained by vessels engaged in "small-type whaling" operations and by native peoples taking species listed in paragraph 1, and all the information mentioned in the said sub-paragraph shall be entered therein as soon as available, and forwarded by Contracting Governments to the Commission.

26. (a) Notification shall be given in accordance with the provisions of Article VII of the Convention, within two days after the end of each calendar week, of data on the number of baleen whales by species taken in any waters south of 40° South Latitude by all factory ships or whale catchers attached thereto under the jurisdiction of each Contracting Government, provided that when the number of each of these species taken is deemed by the Secretary to the International Whaling Commission to have reached 85 per cent of whatever total catch limit is imposed by the Commission notification shall be given as aforesaid at the end of each day of data on the number of each of these species taken.

    (a) If it appears that the maximum catches of whales permitted by paragraph 11 may be reached before 7 April of any year, the Secretary to the International Whaling Commission shall determine, on the basis of the data provided, the date on which the maximum catch of each of these species shall be deemed to have been reached and shall notify the master of each factory ship and each Contracting Government of that date not less than four days in advance thereof. The taking or attempting to take baleen whales, so notified, by factory ships or whale catchers attached thereto shall be illegal in any waters south of 40° South Latitude after midnight of the date so determined.

    (b) Notification shall be given in accordance with the provisions of Article VII of the Convention of each factory ship intending to engage in whaling operations in any waters south of 40° South Latitude.

27. Notification shall be given in accordance with the provisions of Article VII of the Convention with regard to all factory ships and catcher ships of the following statistical information:
    (a) concerning the number of whales of each species taken, the number thereof lost, and the number treated at each factory ship or land station, and
    (b) as to the aggregate amounts of oil of each grade and quantities of meal, fertiliser (guano), and other products derived from them, together with
    (c) particulars with respect to each whale treated in the factory ship, land station or "small-type whaling" operations as to the date and approximate latitude and longitude of taking, the species and sex of the whale, its length and, if it contains a foetus, the length and sex, if ascertainable, of the foetus.

    The data referred to in (a) and (c) above shall be verified at the time of the tally and there shall also be notification to the Commission of any information which may be collected or obtained concerning the calving grounds and migration of whales.

28. (a) Notification shall be given in accordance with the provisions of Article VII of the Convention with regard to all factory ships and catcher ships of the following statistical information:
    (1) the name and gross tonnage of each factory ship,
    (2) for each catcher ship attached to a factory ship or land station:
        (i) the dates on which each is commissioned and ceases whaling for the season,
        (ii) the number of days on which each is at sea on the whaling grounds each season,
        (iii) the gross tonnage, horsepower, length and other characteristics of each; vessels used only as tow boats should be specified.
    (3) A list of the land stations which were in operation during the period concerned, and the number of miles searched per day by aircraft, if any.

    (b) The information required under paragraph (a)(2)(ii) should also be recorded together with the following information, in the log book format shown in Appendix A, and forwarded to the Commission:
    (1) where possible the time spent each day on different components of the catching operation,
    (2) any modifications of the measures in paragraphs (a)(2)(i)-(iii) or (b)(1) or data from other suitable indicators of fishing effort for "small-type whaling" operations.

29. (a) Where possible all factory ships and land stations shall collect from each whale taken and report on:
    (1) both ovaries or the combined weight of both testes,
    (2) at least one ear plug, or one tooth (preferably first mandibular).

    (b) Where possible similar collections to those described in sub-paragraph (a) of this paragraph shall be undertaken and reported by "small-type whaling" operations conducted from shore or by pelagic fleets.

    (c) All specimens collected under sub-paragraphs (a) and (b) shall be properly labelled with platform or other identification number of the whale and be appropriately preserved.

    (d) Contracting Governments shall arrange for the analysis as soon as possible of the tissue samples and specimens collected under sub-paragraphs (a) and (b) and report to the Commission on the results of such analyses.

30. A Contracting Government shall provide the Secretary to the International Whaling Commission with proposed scientific permits before they are issued and in sufficient time to allow the Scientific Committee to review and comment on them. The proposed permits should specify:
    (a) objectives of the research;
    (b) number, sex, size and stock of the animals to be taken;
    (c) opportunities for participation in the research by scientists of other nations; and
    (d) possible effect on conservation of stock.

    Proposed permits shall be reviewed and commented on by the Scientific Committee at Annual Meetings when possible. When permits would be granted prior to the next Annual Meeting, the Secretary shall send the proposed permits to members of the Scientific Committee by mail for their comment and review. Preliminary results of any research resulting from the permits should be made available at the next Annual Meeting of the Scientific Committee.

31. A Contracting Government shall transmit to the Commission copies of all its official laws and regulations relating to whales and whaling and changes in such laws and regulations.

INTERNATIONAL CONVENTION FOR THE REGULATION OF WHALING, 1946
SCHEDULE APPENDIX A

TITLE PAGE
(one logbook per catcher per season)

Catcher name…… Year built……

Attached to expedition/land station ……

Season……

Overall length…… Wooden/steel hull……

Gross tonnage……

Type of engine..…… H.P. ……

Maximum speed…… Average searching speed……

Asdic set, make and model no.……

Date of installation……

Make and size of cannon……

Type of first harpoon used…… Explosive/electric/non-explosive

Type of killer harpoon used……

Length and type of forerunner……

Type of whaleline……

Height of barrel above sea level……

Speedboat used, Yes/No

Name of Captain……

Number of years experience……

Name of gunner……

Number of years experience……

Number of crew……

INTERNATIONAL CONVENTION FOR THE REGULATION OF WHALING, 1946

DAILY RECORD SHEET TABLE 1

Date ..... Catcher name ..... Sheet No.....

Searching: Time started (or resumed) searching
*Time whales seen or reported to catcher
Whale species
Number seen and no. of groups
Position found
Name of catcher that found whales

Chasing: Time started chasing (or confirmed whales)
Time whale shot or chasing discontinued
Asdic used (Yes/No)

Handling: Time whale flagged or alongside for towing
Serial No. of catch

Towing: Time started picking up
Time finished picking up or started towing
Date and time delivered to factory

Resting: Time stopped (for drifting or resting)
Time finished drifting/resting
Time ceased operations

WEATHER CONDITIONS

	Time	Sea state	Wind force and direction	Visibility
Total searching time.....				
Total chasing time				
A) with asdic				
B) without asdic				
Total handling time				
Total towing time				
Total resting time				
Other time (e.g. bunkering, in port)				

Whales Seen (No. and No. of schools)

Blue.....	Bryde's
Fin.....	Minke
Humpback.....	Sperm .....
Right.....	Others (specify)
Sei.....	.....
Signed.....	.....

*Time whales reported to catcher means the time when the catcher is told of the position of a school and starts to move towards it to chase it.

SCHEDULE APPENDIX A

SCHOOLING REPORT TABLE 2

To be completed by pelagic expedition or coastal station for each sperm whale school chased. A separate form to be used each day.

Name of expedition or coastal station

Date Noon position of factory ship

Time School Found

Total Number of Whales in School

Number of Takeable Whales in School

Number of Whales Caught from School by each Catcher

Name of Catcher

Name of Catcher

Name of Catcher .....

Name of Catcher

Total Number Caught from School

Remarks:

Explanatory Notes

A. Fill in one column for each school chased with number of whales caught by each catcher taking part in the chase; if catchers chase the school but do not catch from it, enter O; for catchers in fleet which do not chase that school enter X.

B. A school on this form means a group of whales which are sufficiently close together that a catcher having completed handling one whale can start chasing another whale almost immediately without spending time searching. A solitary whale should be entered as a school of 1 whale.

C. A takeable whale is a whale of a size or kind which the catchers would take if possible. It does not necessarily include all whales above legal size, e.g. if catchers are concentrating on large whales only these would be counted as takeable.

D. Information about catchers from other expeditions or companies operating on the same school should be recorded under Remarks.