



## DEPARTMENT OF COMMERCE

### National Oceanic and Atmospheric Administration

**RTID 0648-XA349**

#### 2020 Marine Mammal Stock Assessment Reports

**AGENCY:** National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

**ACTION:** Notice; response to comments.

**SUMMARY:** As required by the Marine Mammal Protection Act (MMPA), NMFS has considered public comments for revisions of the 2020 marine mammal stock assessment reports (SAR). This notice announces the availability of 80 final 2020 SARs that were updated and finalized. NMFS also announces the availability of a revised final 2019 North Atlantic right whale SAR that includes a typographic correction.

**ADDRESSES:** Electronic copies of SARs are available on the Internet as regional compilations and separated by individual species/stocks at the following addresses, respectively: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region>  
<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-species-stock>.

**FOR FURTHER INFORMATION CONTACT:** Dr. Zachary Schakner, Office of Science and Technology, 301-427-8106, [Zachary.Schakner@noaa.gov](mailto:Zachary.Schakner@noaa.gov); Marcia Muto, 206-526-4026, [Marcia.Muto@noaa.gov](mailto:Marcia.Muto@noaa.gov), regarding Alaska regional stock assessments; Elizabeth Josephson, 508-495-2362, [Elizabeth.Josephson@noaa.gov](mailto:Elizabeth.Josephson@noaa.gov), regarding Atlantic, Gulf of Mexico, and Caribbean regional stock assessments; or Jim Carretta, 858-546-7171, [Jim.Carretta@noaa.gov](mailto:Jim.Carretta@noaa.gov), regarding Pacific regional stock assessments.

**SUPPLEMENTARY INFORMATION:**

## **Background**

Section 117 of the MMPA (16 U.S.C. 1361 *et seq.*) requires NMFS and the U.S. Fish and Wildlife Service (FWS) to prepare stock assessments for each stock of marine mammals occurring in waters under the jurisdiction of the United States, including the U.S. Exclusive Economic Zone (EEZ). These reports must contain information regarding the distribution and abundance of the stock, population growth rates and trends, estimates of annual human-caused Mortality and Serious Injury (M/SI) from all sources, descriptions of the fisheries with which the stock interacts, and the status of the stock. Initial reports were completed in 1995.

The MMPA requires NMFS and FWS to review the SARs at least annually for strategic stocks and stocks for which significant new information is available, and at least once every three years for non-strategic stocks. The term “strategic stock” means a marine mammal stock: (A) for which the level of direct human-caused mortality exceeds the potential biological removal level or PBR (defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (OSP)); (B) which, based on the best available scientific information, is declining and is likely to be listed as a threatened species under the Endangered Species Act (ESA) within the foreseeable future; or (C) which is listed as a threatened species or endangered species under the ESA. NMFS and the FWS are required to revise a SAR if the status of the stock has changed or can be more accurately determined.

Prior to public review, the updated SARs under NMFS’ jurisdiction are peer-reviewed within NMFS Fisheries Science Centers and by members of three regional independent Scientific Review Groups (SRG), established under the MMPA to independently advise NMFS on information and uncertainties related to the status of marine mammals.

The period covered by the 2020 SARs is 2014-2018. NMFS reviewed all strategic stock SARs and others as appropriate and updated 80 SARs representing 84 stocks in the Alaska, Atlantic, and Pacific regions to incorporate new information. The 2020 revisions to the SARs consist primarily of updated or revised estimates of human-caused M/SI new stock names, new methodology and updated abundance estimates. Four stocks changed status from “non-strategic” to “strategic” (Eastern Bering Sea beluga whale, Gulf of Mexico spinner dolphin, Gulf of Mexico striped dolphin, and Gulf of Mexico Clymene dolphin).

The revised draft 2020 SARs were made available for public review and comment for 90 days (85 FR 78307, December 4, 2020). NMFS received comments on the draft 2020 SARs through March 8, 2021 and has revised the reports as necessary. This notice announces the availability of 80 final 2020 reports, which are available on NMFS’ website (see **ADDRESSES**). The Gulf of Maine humpback whale SAR was not finalized because of a technical error; the corrected report will be published in a subsequent SAR cycle. NMFS also announces the availability of the revised final 2019 NARW SAR that includes a typographic correction.

### **Comments and Responses**

NMFS received letters containing comments on the draft 2020 SARs from the Marine Mammal Commission (Commission); Department of Fisheries and Oceans Canada (DFO); Makah Indian Tribe (Makah); Western Pacific Regional Fishery Management Council (WPRFMC); Natural Resources Defense Council (NRDC); two fishing industry associations (Hawaii Longline Association (HLA) and Maine Lobstermen’s Association (MLA)); and a coalition comment letter from four non-governmental organizations (Center for Biological Diversity, Whale and Dolphin Conservation, Conservation Council for Hawai’i, and Conservation Law Foundation,

referred to hereafter as “the Coalition”). Responses to substantive comments are below; responses to comments not related to the SARs are not included. Comments suggesting editorial or minor clarifying changes were incorporated in the reports, but they are not included in the summary of comments and responses. In some cases, NMFS’ responses state that comments would be considered or incorporated in future revisions of the SARs rather than being incorporated into the final 2020 SARs.

#### *Comments on National Issues*

*Comment 1:* The Coalition notes that the MMPA requires that NMFS revise stock assessments for strategic stocks annually and comments that the public is not able to timely contribute to the SARs. For those stocks, which are especially important to conserve, the public is not able to timely contribute to the SARs. The publication of the draft SARs is same month as the Scientific Review Groups are reviewing the draft 2021 marine mammal SARs and the coalition commented that undermines the public’s ability to participate in a meaningful manner.

*Response:* The MMPA requires NMFS to review, not revise, SARs at least annually for strategic stocks and stocks for which significant new information is available. Following this review, NMFS revises SARs as necessary. We acknowledge and agree with this comment regarding the importance of following the SAR process timeline so the current year’s draft SARs do not overlap with the final SARs from the previous year. Unfortunately, the publication of the draft 2020 SARs was delayed until the end of the year, largely due to the impacts of the ongoing COVID-19 pandemic. The public comment period of 90 days, however, remained unchanged.

*Comment 2:* The Commission continues to be concerned about NMFS’ performance in meeting several of the requirements of Section 117 of the MMPA. Without a minimum abundance estimate (Nmin) derived from recent data, PBR cannot be calculated and is considered “unknown.” Including the revised 2020 draft SARs, the

Commission comments that an Nmin estimate is lacking for 81 of the 252, or 32 percent of identified stocks. The lack of data for over one third of the stocks recognized by NMFS is a serious shortcoming in meeting statutory obligations. The Commission reiterates its recommendation that NMFS continue its efforts to prioritize and coordinate requests to secure the necessary survey resources across regions.

*Response:* We acknowledge the Commission's comment and will continue to prioritize our efforts for the collection of data to address outdated Nmin estimates, as resources allow.

*Comment 3:* The Commission notes that in a few of the individual SARs (e.g., Eastern North Pacific gray whale, CA/WA/OR fin whale, and all of the Northeast stocks), M/SI data are lumped for the five-year analysis period. The Commission feels strongly that M/SI data should be presented individually for each year of the analysis period, and comments that the detection of short-term trends or extreme events affecting M/SI are difficult to discern if five-year averages are the only data available. The Commission recommends that NMFS present estimates for each year of a five-year analysis period for all SARs with M/SI data.

*Response:* For two of the stocks highlighted by the Commission (Eastern North Pacific gray whale and CA/WA/OR fin whales), the number of observed bycatch events in the most-recent five-year period (one and zero respectively) are highlighted in the SAR bycatch table for the California swordfish drift gillnet fishery that is observed annually. For the sake of visual simplicity in the SAR (rather than parsing out five zeros or four zeros and a one), these data are pooled into a five-year time frame and individual annual totals may be found in supporting citations (bycatch and serious injury reports). In cases where there has been a large spike in bycatch, or major changes in fishery effort or observer coverage, these details are reflected in the SAR text. Where MS/I data are collected opportunistically from strandings or at-sea sightings, the five-year sum of

observed totals is assessed against PBR and individual year data is published in annual serious injury reports. We agree that in some cases where observer coverage is sporadic or highly-variable within a five-year period, parsing out such annual data may be useful to highlight potential data gaps or changes in bycatch levels. However, these benefits are outweighed by the costs of parsing and presenting annual data that is prone to high levels of statistical noise.

*Comments on Alaska Issues*

*Comment 4:* Over the past decade, the Commission has repeatedly recommended that NMFS, in collaboration with its co-management partners, improve its monitoring and reporting of subsistence hunting in Alaska. While there have been improvements in the number of communities reporting take levels for some ice seals in the SARs in recent years, the majority of communities that hunt or may hunt ice seals are still unaccounted for. Therefore, the Commission continues to recommend that NMFS pursue additional mechanisms to gather reliable information on the numbers of marine mammals taken for subsistence and handicraft purposes, including by securing adequate funding for comprehensive surveys of subsistence use and Native hunting effort in collaboration with co-management partners and the State of Alaska.

Further, the Commission encourages NMFS to continue to provide updated information in the SARs whenever it becomes available, even if it pertains only to a limited number of villages or a subset of years. The Commission has previously recommended that NMFS include all available data about harvest numbers, including struck and lost, in the SARs for beluga whales, and that NMFS work with the Alaska Beluga Whale Committee to improve the completeness of and consistency in reporting harvest data, with a focus on struck and lost information for these stocks. The Commission understands that, in response to a recommendation from the Alaska SRG,

struck and lost numbers will be included in the final 2020 SARs and the Commission looks forward to seeing those numbers.

*Response:* NMFS agrees that it is important to collect reliable information on the numbers of marine mammals taken for subsistence and handicraft purposes. Funding for subsistence use surveys remains limited; thus, in most cases, the best available data are not comprehensive. Nevertheless, we continue to work with our Alaska Native co-management partners (and the State of Alaska in some cases) to conduct surveys of subsistence use as resources allow, including animals struck and lost, and we incorporate that information into the SARs as it becomes available.

*Comment 5:* The Coalition emphasizes that, in the Humpback Whale, Central North Pacific Stock SAR, the section on habitat concerns should include Currie *et al.* (2021), which showed that in the presence of vessels, humpback whales increase swim speed and respiration rate and decrease dive times, which has been shown to be an energetically demanding avoidance strategy. In order to ensure recovery to OSP, the Coalition comments that the SARs must include non-lethal effects of human disturbance, as described in Currie *et al.* (2021) and believes that recording those interactions is a first step toward assessing and mitigating the severity of impact. The Coalition also requests that the Habitat Concerns section include the increasing overlap between whales and high concentrations of marine debris.

*Response:* NMFS has added information on 1) the behavioral responses of humpback whales to vessel presence in Southeast Alaska and Hawaii (Schuler *et al.* 2019, Currie *et al.* 2021), and 2) the overlap between humpback whales and high concentrations of marine debris (Currie *et al.* 2017) to the Habitat Concerns section of the final 2020 Central North Pacific humpback whale SAR.

#### *Comments on Atlantic Issues*

North Atlantic Right Whale, Western Atlantic Stock

*Comment 6:* Department of Fisheries and Oceans Canada (DFO) notes that Entanglement Mortality #3893 (1/22/2018) was discovered on a U.S. beach (1/22/2018) with no gear recovered but was assigned to Canada. DFO is not aware of any conclusive evidence to support this death being attributed to Canada.

*Response:* NMFS thanks the reviewer for the detailed examination of individual cases. Gear was recovered from #3893 and identified as Canadian snow crab fishing gear.

*Comment 7:* DFO comments on Entanglement Prorated Injury #3312, which was sighted in Canadian waters (7/13/2018) with no gear recovered and then assigned to Canada (CN). Entanglement Prorated Injury #3843 was sighted in Canadian waters (7/30/2018), also with no gear recovered, and it was unassigned as a first sighting in Canada (XC). DFO is not aware of any conclusive evidence to suggest that #3312 would reasonably be assigned to Canada. Moreover, a seemingly similar case of Entanglement Prorated Injury in U.S. waters (12/20/2018, #2310, Nantucket, MA), where there was also no gear recovered but was first sighted in the United States, is marked as unassigned (XU).

*Response:* Entanglement Prorated Injury #3312 was sighted in Canada earlier in the day on 7/13/2018 gear free. NMFS determined the entanglement occurred within a 2-hour window that day, thus it was assigned to CN. The other two whales sighted as examples had pre-entanglement sighting histories >1 month; therefore, there was much more uncertainty about when and where the entanglement may have occurred.

*Comment 8:* DFO comments on the summary in Table 3. Confirmed human-caused M/SI records of right whales: 2014–2018a assigns a 1.55 average M/SI over 5 years due to entanglement to Canada. Looking at the incidents in the table marked EN (entanglement) CN (Canada) there are 6.75 incidents (4 mortalities + 2 serious injuries + 0.75 prorated injury), resulting in an average of 1.35 per year rather than 1.55. The discrepancy is carried over from the 2019 draft SAR, when #3694 mortality was assigned



to Canada. However, in response to DFO's comment related to the mortality assignment of #3694 (published 85 FR 149; August 3, 2020.), the entry for #3694 was changed from CN (assigned to Canada) to XC (Unassigned first sighted in Canada) in the final 2019 North Atlantic right whale Stock Assessment Report. DFO points out that the total counts have not been updated in the summary for the 2020 draft SAR.

*Response:* Right whale #3694 was changed from XU (unassigned, first sighted in US) to CN in the 2019 draft that went out for public comment based on identification of the gear as Canadian snow crab gear. In the conversion from draft to final, this was inadvertently changed to XC (unassigned, first sighted in Canada). A correction has been issued and we have made the changes to the final 2019 report which is now available. Summary statistics have also been corrected in the final 2020 report.

*Comment 9:* DFO is not aware of any conclusive evidence used in assigning the following to Canada: Serious Injury #4057 (8/13/2016) and Serious Injury #4094 (07/19/2017).

*Response:* The gear involved with Serious Injury #4057 (8/13/2016) was identified as Canadian crab pot by DFO. For Serious Injury #4094 (07/19/2017), the gear was identified as Canadian crab pot in Daoust *et al.* (2018).

*Comment 10:* The Coalition recommends that the section "Stock Definition and Geographic Range" be changed to reflect the current habitat use of right whales. As written, it is confusing to discern between historic and more recent data. For example, the introduction states that foraging habitat is in New England and Canadian waters, which does not address the year-round use of waters south of Cape Cod as a foraging habitat as reflected in the NOAA Expert Working Group Report, or the detections in all seasons of right whales in the near shore waters of New Jersey during which right whales were documented skim feeding. The Coalition comments that the mid-Atlantic is increasingly used by the species as more than a migratory corridor, which should be reflected in the

SAR. The current references to the mid-Atlantic in the draft SAR precede 2010, the time when a significant shift in right whale habitat use was first noted. More recent sightings of right whales in the Gulf of Mexico and off the Canary Islands should also be included. The Coalition also notes that it is important to consider that population demographics may dictate habitat use, which could impact associated risks to those individuals.

*Response:* Although NMFS considers the description of the right whale range and habitat use to be an accurate reflection of published findings to date, we acknowledge that new observations indicate additional changes in the species' seasonal distribution. We also agree that demographics are an important consideration. Several studies have been recently completed; but, until published, our ability to utilize this information in the SAR is limited. In addition, we have no evidence to suggest that "changing habitat use" has settled into a new stable state. Still, we endeavor to consider all significant changes in habitat use. When it comes to management decisions based on habitat use, the agency uses the most current habitat use models available including those from the Marine Geospatial Ecology Lab at Duke University, which does reflect an increase in habitat use in the mid-Atlantic region.

*Comment 11:* The Coalition comments that the "Population Size and PBR" section is outdated and does not reflect the most recent analysis indicating that the Nmin for 2019 is 347. Even considering 2018, the value in the SAR is higher than the best population estimate of 383 based on the Pace method (Pace *et al.* 2021). As such, PBR is below 0.8.

*Response:* NMFS strives to update the SARs with as timely data as possible, to ensure the SARs are based upon the best available scientific information. As noted in previous years, as a result of the review, revision, and assessment of available data, the data used typically lag two years behind the year of the SAR. The agency recognizes the lags in SAR processing time, but this is necessary to achieve the appropriate peer review.

To that extent, we are finalizing a NMFS technical memorandum to provide up-to-date population estimates. We expect to include these data and information in the 2021 SAR.

*Comment 12:* The Coalition appreciates NMFS' inclusion of cryptic mortality as calculated by Pace *et al.* (2021). The current reference in the document should be updated from submitted to reflect its publication.

*Response:* Now that Pace *et al.* (2021) is published, we have updated the reference.

*Comment 13:* The Coalition asks NMFS to update the "Fishery-Related Mortality and Serious Injury" section to include Hamilton *et al.* (2019), from which NMFS determined that "11.04 percent of the right whale population is entangled annually in U.S. federal fishing gear." The Coalition requests that NMFS include its findings that an average of 6.724 right whales are seriously injured or killed in U.S. fishing gear each year.

*Response:* We have updated language in the final 2020 SAR referencing observations by Hamilton *et al.* (2019) that 30.25 percent of the population was entangled annually between 2010 and 2017. We recognized in the text of the document that MS/I is likely much higher than observed. However, the estimates above are based on a NMFS 2021 analysis that is still a draft and was not reviewed by the Atlantic SRG at the time of writing. Approaches to these issues were discussed with recommendations made by the Atlantic SRG in 2021 that will be considered in the 2021 SAR.

*Comment 14:* The Coalition asks NMFS to include the findings in the recently published North Atlantic Right Whale (*Eubalaena glacialis*) Vessel Speed Rule Assessment, which concluded that voluntary measures did not have a meaningful impact on reducing vessel collisions, small vessel collisions can seriously injure right whales, and that the current SMAs should be modified.

*Response:* We appreciate this comment; the implications of the Vessel Speed Rule Assessment are being considered for the 2021 SAR.

*Comment 15:* The Coalition requests that the 2018 prorated injuries for the following whales be changed to a value of 1 against PBR to reflect NMFS' determination that these individuals meet the criteria of Seriously Injured, as reflected on the Agency's Unusual Mortality Page: #3312 (entanglement), #3843 (entanglement), and #2310 (entanglement).

*Response:* NMFS' Unusual Mortality Event (UME) webpage is currently tallying prorated injuries and serious injuries together; but, for the SARs, NMFS follows the assessment guidelines here: <https://media.fisheries.noaa.gov/dam-migration/02-238-01.pdf>.

*Comment 16:* NRDC requests that NMFS revise the draft North Atlantic right whale SAR to reflect the most up-to-date estimate of population size. The best population estimate for the end of 2019 is now just 356 individuals, representing a more "precipitous drop [in the population size] than previous years." Moreover, the best population estimate for the end of 2018 has been revised down from 409 individuals to 380 individuals. NRDC comments that the new 2019 and revised 2018 estimates indicate a significant decrease in survivorship during the last three years as a result of the ongoing unusual mortality event. NRDC emphasizes that NMFS should update the draft SAR according to the best available scientific information on North Atlantic right whale population size.

*Response:* See our response to comment 11.

*Comment 17:* NRDC requests that NMFS revise the PBR level downward for the NARW. The updated population size estimate has implications for the calculation of the PBR level for the North Atlantic right whale. NMFS' draft SAR states that PBR for the species is currently 0.8; however, the agency has acknowledged in other fora that the

most recent population estimate has further reduced PBR to 0.7. NMFS must revise the PBR level in the draft SAR downwards to reflect the best available scientific information.

*Response:* We appreciate this comment; please see our response to comment 11.

*Comment 18:* NRDC comments that NMFS must accurately account for cryptic mortalities in its calculation of “total” estimated human-caused mortality and serious injury. The number of observed mortalities is a significant underestimate of actual deaths. A scientific study published this year by Richard Pace and colleagues (Pace *et al.* 2021) concludes only 29 percent (2 standard errors = 2.8 percent) of right whale carcasses were detected from 2010 to 2017. The same study found that entanglements accounted for the “vast majority” of detected serious injuries (87 percent), but only about half of detected deaths (49 percent) from 1990 to 2017. Thus, “cryptic deaths due to entanglements significantly outnumbers cryptic deaths from vessel collisions or other causes.” NMFS must update the estimates of “total” mortality included in the draft SAR based on the findings of the new Pace *et al.* (2021) model.

*Response:* NMFS appreciates this request. While Pace *et al.* (2021) make reference to the regime period of 2010-2017, the SARs - which work on 5-year rolling averages - make use of the time period 2013-2017. As such, the numbers in the SAR are not in disagreement with the estimates in Pace *et al.* 2021. Recognizing the significance of the population decline, we intend to publish a NMFS Technical Memorandum (Pace, in press) to provide an update on these estimates, as resources allow. We expect to reference this NMFS Technical Memorandum in a future SAR.

*Comment 19:* NRDC notes that NMFS must include the best available scientific information on sublethal impacts of entanglement. Entanglement remains the leading cause of North Atlantic right whale mortality and a major factor in reproductive loss. NRDC notes the pervasive sub-lethal effects of entanglement, including impaired reproductive potential and negative health effects, currently undermine any opportunity

for the species to recover and may eventually lead to individual mortalities. NRDC emphasizes that NMFS must include, and should more thoroughly consider, the best available scientific information on sub-lethal effects of entanglement and the implications for the survival of the North Atlantic right whale in the draft SAR.

*Response:* This is a valid point, and sub-lethal effects of entanglement was acknowledged in the “Current and Maximum Net Productivity Rates” section. NMFS had not yet cited the work by Christiansen *et al.* (2020), so we added that reference in the final 2020 SAR.

*Comment 20:* The Commission is hopeful that its recommendations and those of other experts will compel NMFS to take decisive and effective steps toward enabling right whales to recover. In that effort, it is imperative that NMFS apply the best available data and science to its estimation of population size and the M/SI rate. The best available population estimates are provided by the population model developed by Pace *et al.* (2017), and NMFS is making use of those estimates. NMFS has always done an excellent job of estimating the number of known M/SI due to entanglement in fishing gear and due to vessel strikes. However, a secondary finding of the Pace *et al.* (2017) population model was that only 60 percent of the total mortality estimated by the model was accounted for by the known M/SI. It was long suspected that some mortalities were going undetected, and the Pace *et al.* (2017) model suggested that the undetected proportion was 40 percent. Therefore, the Commission recommends that NMFS immediately take steps to include the best available science by incorporating the Pace *et al.* (2021) estimates of undetected mortalities in its estimates of total human-caused mortality and serious injuries of right whales in the final 2020 SAR.

*Response:* Please see NMFS response to comment 18.

*Comment 21:* MLA comments that the draft SAR must include more information regarding NARW entanglements in fishing gear. The draft SAR contains none of the

statutorily required information on commercial fisheries that interact with the stock (16 U.S.C. 1386(a)(4)). As a result, the public has no information about the fisheries that interact with the NARW and the levels, types, and seasonal and geographic patterns of entanglement that occur within and among those fisheries. This information must be included in the final SAR.

The draft SAR presents only M/SI entanglement data—non-serious injury entanglements are omitted. This highly important information is relevant to assess the effectiveness of the Atlantic Large Whale Take Reduction Plan (TRP). For example, the TRP requires certain measures that are intended to reduce the severity of fishery interactions, rendering them non-serious injuries. MLA emphasizes that a comparison of M/SI and non-serious injury data over time, by area, and by fishery, is relevant to evaluating the effectiveness of measures intended to reduce the severity of fishery interactions. This information must be included in the final SAR.

*Response:* Because there are multiple species interactions with multiple fisheries, the fisheries are summarized in Appendix 3- Fishery Descriptions. They are also available online <https://www.fisheries.noaa.gov/national/marine-mammal-protection/list-fisheries-summary-tables> with focus on Table II category I and II fisheries. The SAR reports to the extent possible what information is available for describing commercial fisheries that interact with the stock, in accordance with Section 117 of the MMPA (i.e., M/SI levels by fishery, seasonal/area differences in M/SI, and M/SI rates calculated using standardized fishing effort). However, because only a small fraction of entanglements have gear recovered and a smaller fraction of that is traceable to the fishery, the agency has not been able to estimate the annual MS/I to the resolution of fishery/region. Given new recommendations from the Atlantic SRG meeting in 2021, and additional analysis resulting from Pace *et al.* (2021), NMFS is working to improve our reporting of this issue in future SARs. For now, this topic is addressed to the extent that data can support it in

the SAR's Table 3. The issue of non-serious injuries is discussed in the third paragraph of the section titled "Fishery-Related Mortality and Serious Injury." The draft SAR cites Knowlton *et al.* (2016) and more recently Hamilton *et al.* (2019), which have consistently tracked 26 percent to now 30 percent of the population receiving non-serious injuries annually, which is an increasing trend. Despite roughly 100 injuries per year in recent years, injuries are almost never observed at the time they occur, but the wounds persist for periods of weeks to months/years, during which time animals may travel thousands of miles. Additional language to address this concern has been added to the first paragraph of the "Fishery-Related Mortality and Serious Injury" section of the SAR.

*Comment 22:* MLA requests that the SAR include data on the severity of entanglements. The New England Aquarium (2020) reports that from 2010 to 2017, the annual average serious entanglement rate ranged from 1.4 percent to 3.8 percent, and that from 2014-2018 the majority of NARW entanglements were minor (62 percent), with less than half either moderate or severe (19 percent and 19 percent, respectively). None of this important information is reported in the draft SAR, but it should be.

*Response:* Table 3 of the NARW SAR provides considerable detail on each entanglement case that merited a prorated serious injury or greater. The New England Aquarium applies different criteria than defined in NMFS' Serious Injury Policy (NMFS 2014). While there is often agreement between institutions, inconsistencies occur based on different criteria. The "rates" quoted above are based upon observed events. However, Pace *et al.* (2021) stated, "We used an abundance estimation model to derive estimates of cryptic mortality for NARW and found that observed carcasses accounted for only 36 percent of all estimated deaths during 1990–2017. We found strong evidence that total mortality varied over time, and that observed carcass counts were poor predictors of estimated annual numbers of whales dying." As such, focusing on the rates above would amount to 'cherry picking' and misleading conclusions that under-represent the true scale



of the entanglement problem, given that Pace *et al.* (2021) indicate only 36 percent of mortalities have been observed since 1990, and given the bias that most serious injuries are entanglements (vs. ship strikes) that are never seen again. This indicates hundreds of entanglement mortalities have gone undetected even in just the past decade.

*Comment 23:* MLA points out that the Guidelines for Assessing Marine Mammal Stocks (GAMMS) instruct authors to include in the SAR “[a] summary of mortality and serious injury incidental to U.S. commercial fisheries ... presented in a table, providing the name of the fishery and, for each appropriate year, observed mortality and serious injury, estimated extrapolated mortality and serious injury and associated CV, and percent observer coverage in that year, with the last column providing the average annual mortality and serious injury estimate for that fishery.” Although the draft SAR presents a table of entanglements showing “country” and “gear type,” this falls well short of the detailed and well-organized table recommended by GAMMS (and included in numerous other SARs). MLA notes that such a table should be included in the SAR. This information is important for assessing individual fisheries, which has even more significance given that NMFS’ revised “negligible impact determination” policy includes a process for assessing individual fisheries.

*Response:* Table 3 provides all known information on injuries. The requested table is not provided because the data are not available to populate it. Appendix 3 describes the U.S. fisheries and their observer coverage level (or the complete lack thereof, in the case of the lobster fishery). Additional language to address this concern has been added to the first paragraph of the “Fishery-Related Mortality and Serious Injury” section of the SAR.

*Comment 24:* With respect to the lobster fishery, MLA requests that the SAR include data showing that there has been a 90 percent decline in instances where lobster gear was removed from entangled NARW since 2010. There were four known cases of

lobster gear removed from NARW from 1997 to 2000, six from 2000-2010, and one from 2010 to 2019. MLA notes that the only confirmed M/SI resulting from entanglement in lobster gear occurred in 2002 and none of this is reported in the draft SAR.

*Response:* The right whale SAR provides summaries of all available data relating to right whale serious injury and mortalities during 2014-2018, including all identified fisheries. NMFS has included in the narrative the primary points and statistics. Because right whale injuries are rarely witnessed, we have relied on opportunistic reports to build our understanding of impacts to the population and provide a minimum number of deaths. However, 11 opportunistic records since 1997, as cited by the commenter, are insufficient to assess trends in entanglement rates, especially without context on fishing effort during the same time period. Specifically, gear was only retrieved from 13 percent of the right whale entanglement incidents from 2010 to 2018 (22/167). Of those, most (73 percent) are identifiable to a fishery. However, the work by Pace *et al.* (2021) shows there is no evidence of observed rates/causes of mortality corresponding to cryptic mortality rates. As such, the reporting of “trends” for observed cases is misleading.

*Comment 25:* MLA comments that the draft SAR omits data and information collected by NMFS showing that more entanglements occur with Canadian fishing gear. The draft SAR is virtually silent on the outsized role of Canadian fisheries in a significant spike in M/SI incidents since 2017, even though relevant data, scientific observations, and expert analyses are available to NMFS. This should be included in the final SAR in order to provide a full and accurate picture of the known and/or probable origin of entanglements outside U.S. waters.

*Response:* The final SAR assigns fishing gear to fishery type, e.g., pot/trap and country of origin, when sufficient data are available. Given the low frequency at which such data are available, and the lack of a statistical relationship between observed and actual mortalities (Pace *et al.* 2021), no annual serious injury and mortality statistics are

derived on a ‘by fishery’ basis. All confirmed Canadian mortalities were identified in Table 3. Differences in survey effort between Canada and the United States need to be considered when attempting to compare incidents of M/SI. The apparent increase in M/SI incidents in Canadian fisheries since 2017 is influenced in part by the increased detection of mortalities that happened within the confines of a relatively closed body of water that had several aircraft surveying it beginning in 2017, and as many as 5 aerial survey platforms conducting regular surveys since then. Increased Canadian monitoring efforts were in response to this being an area of significant mortality. However, the coastal waters of New England represent a similar length of area, with a similar number of vertical lines. The lack of fishery observers, much more limited aerial survey capacity over an open section of coast with currents that can carry carcasses offshore, and gear that is heavy enough to anchor whales below the surface contributes to making coastal New England waters an area where the odds of detecting mortality are quite low. However, spatial models suggest a high risk of mortality in this area. As above, we note that many of these comments recommend placing strong correlation value on limited observations, which is ill advised based upon the findings of Pace *et al.* (2021).

*Comment 26:* MLA comments that although the draft SAR acknowledges that “[a]n Unusual Mortality Event was established for North Atlantic right whales in June 2017 due to elevated st[r]andings along the Northwest Atlantic Ocean coast, especially in the Gulf of St. Lawrence region of Canada,” it omits discussion of significant relevant information showing that a large number of NARW have altered their migratory patterns because their preferred prey has responded to altered oceanographic conditions by moving into the Gulf of St. Lawrence, where NARW are at very high risk of entanglement in snow crab gear that is heavier and more lethal than gear fished in U.S. waters. This relates directly to the severity of injury resulting from entanglement, as noted in previous MLA comments. This information provides important insights into the

source of entanglement risk and severity of entanglement for North Atlantic right whales, and MLA requests NMFS include the best available scientific information.

*Response:* NMFS has addressed this comment in the “Stock Definition/Geographic Range,” “Current Population Trend,” and “Habitat Issues” sections.

*Comment 27:* MLA suggests that the draft SAR should be revised to incorporate the best available scientific information regarding the increasing proportion of M/SI from Canada as a result of altered North Atlantic right whale migratory patterns to the Gulf of St. Lawrence. These data are critical to understanding the increase in M/SI. Specifically, MLA requests the inclusion of data concerning the country of origin of NARW entanglements during the relevant time period, taking into account scientific observations of entangling gear, depicting differentiating attributes of that gear (such as rope diameter and strength) which make it so lethal, and describing the differences between the conservation programs and relative effectiveness of measures to protect NARW in each country.

*Response:* NMFS has applied the best available science to the narrative of right whale distribution and entanglement rates, but the scientific understanding of right whale movement in the western North Atlantic is limited. Also, the timeline of mortality data for this SAR is through 2018. As future data become available and statistically meaningful trends emerge, they will be discussed in future SARs as resources allow. Although roughly a third of the population currently visits the Gulf of St. Lawrence, their residency in surveyed areas appears to be highly variable, and we have little idea where the other two-thirds of the population is residing. We do not know the relationship between detected entanglement and mortality and what the levels are for the population as a whole. We know that mortality rates are significantly higher than the number of

observed cases, but currently do not have sufficient evidence to support apportioning undetected mortality to one country or another.

*Comment 28:* MLA states that the draft SAR omits best available scientific information about NARW behavior that affects its risk of harm from fishing gear. MLA suggests that NMFS has not taken account of significant variances in North Atlantic right whale behavior across its migratory range. MLA requests that NMFS provide greater detail on these known foraging areas, including the number and proportion of North Atlantic right whales sighted in these areas in recent years, to ensure adequate protections are in place.

To address seasonal or area differences in incidents of M/SI, MLA requests the final SAR incorporate information such as that described above detailing geographic shifts in NARW and differing behavior in these habitats in response to oscillating oceanographic conditions across their migratory range, which places North Atlantic right whales at varying levels of risk from gear entanglement.

*Response:* NMFS agrees that risk is elevated where high right whale density overlaps with fishing gear. Higher gear densities also elevate risk, and heavier gear likely increases injury severity. The SAR presents our current understanding of right whale distribution and population assessment for the public and management decisions. It also describes our level of understanding of entanglement risk. Although more than 80 percent of right whales bear evidence of entanglement, there are few events where the location or depth that the whale encountered the gear is known. All reported entanglement events from 2014 to 2018 are presented in Table 3.

*Comment 29:* MLA notes that the draft SAR must reincorporate deleted text and include supplemental information to provide a full appreciation of the status of the North Atlantic right whale population. On page 42, the draft SAR strikes text indicating that “the existence of important habitat areas is not presently well described,” but nonetheless

states that “long-range matches indicate an extended range for at least some individuals” and “the location of much of the population is unknown during the winter.” In the absence of new data, the MLA recommends that the deleted text remain in the document to help the reader understand that much of North Atlantic right whale habitat remains poorly understood.

*Response:* The new text represents NMFS’ evolving understanding of right whale habitat. We continue to close knowledge gaps. Some blanket statements retained from previous versions of the SAR are no longer accurate. We endeavor to provide the most pertinent information for the reader.

*Comment 30:* MLA comments that on page 42, NMFS has removed language stating that the majority of right whale sightings occur within 90 kilometers (km) of the shoreline of the southeastern United States. However, at page 43, the draft SAR states that “telemetry data have shown rather lengthy excursions, including into deep water off the continental shelf (Mate *et al.* 1997; Baumgartner and Mate 2005).” Has NMFS received new data that warrants noting North Atlantic right whale excursions into deeper water but not that North Atlantic right whales are known to occur within 90 km of the shoreline? The MLA recommends that both are important to include in the final SAR, and NMFS should provide additional details on the number of North Atlantic right whales known to use these habitats.

*Response:* The SAR includes both text and a figure that describes the distribution of sightings. The statement that the majority of sightings occur within 90 km of the shoreline was misleading because it does not account for effort; most right whale sightings occur close to shore because that is where most people are present to see and report the sightings. The excursions into deep water are not otherwise well represented. Telemetry data provide another dimension to NMFS’ understanding and are important to note.

*Comment 31:* MLA noted that, on page 43, the draft SAR states that “New England waters are important feeding habitats for right whales, where they feed primarily on copepods (largely of the genera *Calanus* and *Pseudocalanus*).” MLA believes the best available information allows NMFS to be more specific in this statement. Given the pending regulatory focus on offshore Maine, MLA believes it would be appropriate to distinguish where these feeding grounds occur.

*Response:* The narrative in the SAR is meant to provide only a general description of right whale distribution. NMFS is providing other products with detailed information on right whale densities throughout the right whales’ range for management and Atlantic Large Whale Take Reduction Team consideration.

*Comment 32:* On page 44, the draft SAR states: “In 2016, the Northeastern U.S. Foraging Area Critical Habitat was expanded to include nearly all U.S. waters of the Gulf of Maine (81 FR 4837, 26 February 2016).” MLA requests that NMFS clarify that critical habitat is designated because it contains at least one physical or biological feature to support foraging, and not necessarily because NARW have been observed to forage in all designated areas throughout the entire Gulf of Maine. Some readers may not understand the regulatory criteria for designating critical habitat, which are not dependent upon whale presence.

*Response:* NMFS agrees with this distinction, and language has been added to this point in the final 2020 NARW SAR.

*Comment 33:* MLA noted, on page 44, the draft SAR states: “An important shift in habitat use patterns in 2010 was highlighted... The number of individuals using Cape Cod Bay in spring increased, (Mayo *et al.* 2018). In addition, right whales apparently abandoned the central Gulf of Maine in winter (see Cole *et al.* 2013), but have since been seen in large numbers in a region south of Martha’s Vineyard and Nantucket Islands.... Aerial surveys of the Gulf of St. Lawrence during the summers of 2015, 2017, and 2018,

documented at least 34, 105, and 131 unique individuals using the region, respectively (NMFS unpublished data).” MLA believes NMFS should provide as much detail as possible to help the public understand the spatial distribution of North Atlantic right whales. MLA requests the inclusion of the number of North Atlantic right whales and proportion of the population sighted in Cape Cod Bay (as noted in previous MLA comments), clarify what is meant by central Gulf of Maine (which MLA interprets to be the portion of the Gulf of Maine located off the Maine coast), and include the proportion of North Atlantic right whales represented by Gulf of St. Lawrence sightings.

*Response:* Clarification has been added to text regarding the central Gulf of Maine location. Describing the proportion of individuals sighted in various habitats may provide a false impression of our level of knowledge of right whale use of these areas.

Photographic capture of individuals and maximum likelihood models of these data indicate considerable immigration and emigration of individuals. A tally of individuals seen in a habitat does not accurately convey the spatial distribution of right whales, or potential risk. There is a significant difference in risk levels if 10 whales occupy an area for a day versus 10 whales occupying an area for 100 days. NMFS’ level of understanding is evolving and is currently better in some areas than others. The text is an accurate reflection of our current understanding when considering the combined effects of sightings, survey effort, and potential residency of right whales.

*Comment 34:* MLA commented that, on pages 44-45, the draft SAR strikes the language: “an additional interpretation of paternity analyses is that the population size may be larger than was previously thought. Fathers for only 45 percent of known calves have been genetically determined; yet, genetic profiles were available for 69 percent of all photo-identified males (Frasier 2005). The conclusion was that the majority of these calves must have different fathers that cannot be accounted for by the unsampled males, therefore the population of males must be larger (Frasier 2005).” MLA comments it is



unclear why this text citing data from Frasier (2005) is struck from the SAR and why Fitzgerald (2018) now represents the best available information?

*Response:* NMFS has determined that Fitzgerald (2018) best represents the current understanding of pedigree-informed abundance estimation; however, Frasier (2005) has not been conclusively refuted. We have restored Frasier (2005), and added Frasier *et al.* (2007), to the text and references.

*Comment 35:* MLA points out that on page 56, the draft SAR states: “Whales often free themselves of gear following an entanglement event, and as such scarring may be a better indicator of fisheries interaction than entanglement records.” As noted previously, this statement falls short of providing a useful and complete understanding of scarring data for the relevant time period. As described above, the New England Aquarium (2020) states that the majority of entanglements between 2014 and 2018 are minor (62 percent).

*Response:* This is a valid point, and NMFS will include more detailed results from entanglement scar-coding research in a future draft NARW SAR, as resources allow.

*Comment 36:* MLA noted, on page 56, the SAR cites three studies concluding that North Atlantic right whales mitigation measures implemented prior to 2009 have not worked, and that the effectiveness of measures implemented since 2009 have not yet been evaluated. NMFS has reported on multiple occasions in conversations with the Atlantic Large Whale Take Reduction Team that the 2009 groundline rule has been effective, citing data that no groundlines have been identified as the primary entangling gear on right whales since its implementation, yet the SAR states that the effectiveness of these measures has yet to be evaluated. In addition, as noted above, the SAR should report data showing that there has been a 90 percent decline in instances of lobster gear removed from entangled North Atlantic right whales since 2010. There were four known cases of lobster gear removed from North Atlantic right whales from 1997 to 2000, six from 2000

to 2010, and one from 2010 to 2019. The only confirmed M/SI resulting from entanglement in lobster gear occurred in 2002.

*Response:* In this instance, the SAR is reporting on the population level effect of the groundline rule, that is, if the 2009 rule has significantly reduced entanglement rates. The absence of groundline as primary entangling gear is a positive result, but a comprehensive evaluation of effectiveness of the rule requires a long time series for a statistically robust analysis. Opportunistic records cannot provide any rate change information, such as injury rate relative to fishing levels, because the variables affecting detection are largely unknown.

*Comment 37:* MLA comments that the draft SAR contains errors in Table 3. First, the entanglement that occurred on 9/23/2016 (ID 3694) has been confirmed to have involved Canadian trap/pot gear since the draft SAR was published. The country code in Table 3 for this entry and the M/SI for entanglement by country of origin should be updated accordingly. Second, there is a minor clerical error that should be corrected for consistency. The entanglement that occurred on 7/30/2018 (ID 3843) is miscoded as “-”. The correct coding for this entry is “GU”.

*Response:* The gear retrieved from #3694 was identified as Canadian snow crab in April 2018. It was previously reported as XU with unknown gear but has been updated to CN pot/trap in the final 2020 SAR. The coding for 7/30/2018 (ID 3843) has been updated to “GU” in the final 2020 SAR.

*Comment 38:* MLA requests that the draft SAR disclose the current limits of the Pace model. MLA comments that the draft SAR (p. 46) could be construed by the public to mean that Pace *et al.* (2017) fully accounts for changes in capture probability. However, the Pace model is relatively new and highly sensitive to additional years of data, in part because subsequent re-sightings influence the probability of recapture and estimate of mortality.

*Response:* The Pace model does account for changes in capture probability (see Figure 3 in the final 2020 SAR), and builds on the full sighting history of all individual right whales to provide population estimates that are robust to changes in whale distribution and survey effort. This approach, coupled with high levels of effort to photographically capture individuals each year, provides relatively precise estimates and the ability to detect small changes in the population from year to year.

*Comment 39:* MLA comments that the draft SAR should make clear that while Pace *et al.* (2017) assumes no natural mortality, natural mortality has been documented by Taylor *et al.* (2013) and Curtis *et al.* (2014). The fact that there is a significant amount of neonate mortality (see draft SAR, p. 55) is critical for the public to understand. By ignoring neonate mortality, as done by the Pace model, MLA believes the below-expected number of individuals recruited into the population could be construed as a reflection of the NARW calving rate when, in fact, natural mortality is occurring. The appropriate regulatory and management responses to an anomalously low calving rate are different from elevated neonate mortality from natural predators. MLA requests the SAR cite relevant literature on natural mortality and put it in the context of studies such as Pace *et al.* (2017).

*Response:* First, the Pace *et al.* (2017) model does not assume any particular cause of death (natural or human-caused); it simply allows one to estimate total mortality using sighting histories as described in the draft SAR. Second, we agree that there are likely neonate mortalities that go undetected, some of which may due to natural causes. However, since these undetected neonates would not have a sighting history, including these instances would only add to the total mortality derived from the Pace *et al.* (2021) method and would not change the findings of Sharp *et al.* (2019) that all non-calf mortality for which cause of death could be determined was human-caused. To date, only one neonate mortality was determined to be from white shark predation. Pre-mortem

shark attack was determined to be a contributing cause of death of two other calves that were entangled in fishing gear (Taylor *et al.* 2013). In general, calving rate in this population is determined by extensive survey effort along the coast of the Southeastern United States, with very few individuals found to “enter the population” without having been detected as calves in recent years.

*Comment 40:* MLA points out that the SAR concludes 100 percent of the estimated mortality of 18.6 animals per year is assumed to be human-caused and comments that this may be somewhat positively biased (i.e., a slight overestimate) given that some calf mortality is likely not human-caused. Although the draft SAR acknowledges this is likely a “slight overestimate,” its conclusion that all mortality is human-caused is not supported by Sharp *et al.* (2019). The draft SAR ignores the underlying data that of 124 whales examined, 42 percent were confirmed to be anthropogenic (26 due to vessel strikes, 26 due to entanglement), and 58 percent were due to natural or unknown cause (18 neonates died of natural causes, while 54 died of unknown causes). With natural causes constituting a total of 14.5 percent of all examined individuals and 25 percent of those incidents where cause was confirmed, it is not a “slight overestimate” and the best available scientific information does not support attributing all mortalities of unknown cause to human activity. MLA reiterates that the SAR must be revised to accurately reflect the best available science.

*Response:* NMFS disagrees with the assertion that Sharp *et al.* (2019) does not support the assignment of all estimated mortality to human causes. Only 6 deaths of the 124 (2 percent) documented between 1970 and 2018 were attributed to natural causes, and all 6 were calves. For one calf, shark predation was implicated; the other natural deaths were determined to have been stillbirth, dystocia, or malnutrition. Conversely, 100 percent of all examined, non-calf carcasses for which cause of death could be established were determined to have died from either entanglement or vessel collision. Cause of

death could not be verified for the remaining carcasses due to either decomposition or logistical constraints, such as distance from shore or poor field conditions. While it is possible that some of these unexamined deaths were due to natural causes, existing evidence indicates right whales rarely die of natural causes. Also see response to comment 39.

*Comment 41:* MLA states that the report by Kenney (2018) is fundamentally flawed and should not be cited in the SAR. The draft SAR cites Kenney (2018) to support the statement that “[p]rojection models suggest that the [maximum net productivity rate] could be 4 percent per year if female survival was the highest recorded over the time series from Pace *et al.* (2017).”

*Response:* The Kenney (2018) reference is a relevant, peer-reviewed study that helps provide context for the impacts of fishery-related mortality on the right whale population. The study does account for other mortality, removing only confirmed fishery-related deaths. Several scenarios are provided with varying levels of hypothetical entanglement mortality rates corresponding to degrees of compliance with MMPA regulations. While the paper presents a very simple representation of complex processes, the model parameters are reasonable and the results are valid.

Gray Seal Western North Atlantic

*Comment 42:* The Commission requests improved reporting of serious injury data for gray seals. Human-caused serious injury data are reported by source within the SARs, including both observations and extrapolations, if possible. Summaries of observations of human-caused injuries may include some uncertainty of the specific source, but the Commission believes these should still be included in the total M/SI summaries reported in the Status of the Stock section relative to PBR level.

The Commission is concerned that numerous observations of potentially serious injuries of gray seals are not being accounted for in the SAR. Based on unmanned aerial

surveys of gray seals hauled out on shore, Martins *et al.* (2019) reported the minimum total number of entangled gray seals could range from 192 to 857 (or 0.83 percent to 3.7 percent of the population in U.S. Atlantic waters). It appears that these seriously injured animals are not being counted in either the commercial fisheries observer M/SI data or the stranding data. Zero serious injuries were reported for 2014-2018 in the commercial fisheries observer data (for both gillnet and trawl fisheries in which mortality is known to occur), and only mortalities are being reported in the human-interaction stranding table. Further, because no serious injuries are reported in fisheries observer data, these injured animals are not accounted for in the extrapolated M/SI estimates either.

The Commission recommends that NMFS ensure that these observations of injured seals are being accurately quantified and included in the SAR, consistent with the agency's 2012 guidelines on injury determinations (including consultation with staff from other Science Centers). The Commission also believes NMFS should continue to collaborate with the Northwest Atlantic Seal Research Consortium, Northeast Fisheries Observer Program, and regional stranding responders on efforts to better photo-document and identify injured and dead seals.

*Response:* NMFS is actively collaborating on this issue both internally and externally with the Northwest Atlantic Seal Research Consortium. NMFS plans to address how to better document the number of animals living with fisheries entanglements in order to account for them in the SAR, via a standardized system for data collection and entry into the National Stranding Database. The Northeast Fisheries Science Center, in partnership with other organizations, has also submitted a proposal to utilize artificial intelligence to identify specific individuals with entanglements from photographs, which is necessary to avoid double reporting of animals that may live with serious entanglements for several years.

Humpback Whale, Gulf of Maine

*Comment 43:* The Coalition appreciates the inclusion of cryptic mortality in this analysis, which appropriately elevates the stock to strategic as a result. The Coalition reiterates their comments from last year that the distribution map, while based on NOAA survey data, does not accurately depict the distribution of humpback whales, particularly in the near shore mid-Atlantic areas.

*Response:* There is a technical error with the Gulf of Maine humpback whale SAR and, as a result, this report has not been finalized. An updated draft report will be published in a subsequent SAR cycle.

Bryde's Whale, Gulf of Mexico stock

*Comment 44:* The Coalition appreciates the extensive updates to the Gulf of Mexico Bryde's whale SAR and reminds NMFS that, as an ESA-listed species, the SAR for these whales should be updated every year. The Coalition also reiterates their introductory comments on the general timing of review and comment for the 2020 SARs and the substantial delay in including new information, as it is now known that these whales have been designated as a new species: Rice's whales. The Coalition requests that this new designation be recognized and the 2021 SAR updated accordingly.

*Response:* Section 117 of the MMPA requires NMFS to review annually, and update as necessary with any new information, SARs for strategic stocks, which would include stocks of ESA-listed species. NMFS will review the Bryde's whale SAR annually to ensure that applicable updates are incorporated.

The 2021 SARs were drafted in fall of 2020, prior to the publication of the new species recommendation, and the Gulf of Mexico Bryde's whale SAR is not being updated in the 2021 cycle. In order to change the name of the species listed under the ESA, NMFS must update the common and scientific name of this species in the Code of Federal Regulations (CFR; see 50 CFR 224.101) by publishing a technical correction in the **Federal Register** (FR), a process that is currently underway. After the CFR has been

updated, we will make the name change in the SAR. Prior to initiating this technical correction, NMFS awaited notification from the Taxonomy Committee of the Society for Marine Mammalogy that they had reviewed the new publication recommending recognition of the Bryde's whales in the Gulf of Mexico as a different species, and that they agreed with the findings and would place the new species on the accepted list of taxonomic names. NMFS received that notification on March 4, 2021. Importantly, the name of the species does not affect the protections it receives under the ESA or the MMPA.

### *Comments on Pacific Issues*

#### Hawaiian Monk Seal

*Comment 45:* The Coalition states that the Harting *et al.* (2020) analysis provides important information to guide recovery planning by comparing the impact of multiple threats, and should be cited. Their analysis demonstrates that anthropogenic causes of death of Hawaiian monk seals have a larger impact than either natural or disease causes of death. The Coalition also requests that the recent decision by NMFS that the two monk seals found dead off Kauai in late 2020 likely drowned in lay nets be included in the SAR.

*Response:* Since these human-caused mortalities are outside the time period for the final 2020 SAR (2014-2018), Harting *et al.* (2020) will be cited in the draft 2021 SAR. Human-caused deaths that occurred in 2020 will be reported in the 2022 SAR.

#### Bottlenose Dolphin

*Comment 46:* The Coalition suggests there are several studies about bottlenose dolphin population abundance and health that should be included in the SARs. First, Van Cise *et al.* (in press) observed a decline in abundance in three out of four stocks and lower-than-expected survival rates in all stocks. For these small populations that experience concentrated anthropogenic disturbances, the authors recommended closely



monitoring trends in abundance. Second, Stack *et al.* (2019) encouraged the use of bent dorsal fin observations as an indicator of population health for odontocetes. In the case of 164 bottlenose dolphins sighted during the study, none included a bent dorsal fin. The study noted that one bottlenose dolphin with a bent dorsal fin in Hawaii was reported in Alves *et al.* (2018). The Coalition encourages the SARs for these species to include an account of sightings of bent dorsal fins. Third, in a study of coastal waters and marine debris, bottlenose dolphins had the largest area of interaction risk out of all odontocete species (Currie *et al.* 2017). The SARs should include this study as a high-concern threat to bottlenose dolphin habitat.

*Response:* NMFS is aware of the new abundance estimates for bottlenose dolphins of the Hawaiian Islands Stock Complex presented in Van Cise *et al.* (in press). These estimates will be included in the 2022 draft SARs along with appropriate caveats about the potential influence of sampling variability and bias on the estimates and associated trends. We appreciate the work done by Stack *et al.* (2019), although we interpreted their conclusions as calling for a consideration of the impacts of bent dorsal fins on population health given the potential for long-term effects on individuals, as opposed to suggesting that bent dorsal fins should be used as an indicator of population health. As the authors note, bent dorsal fins are also extremely rare, which makes them less reliable as a measure of population health compared to an attribute such as body or skin condition that could be readily measured across individuals. That said, bent dorsal fins can be indicators of impacts such as fishery interactions. When bent dorsal fin observations are made and linked to human-caused injuries, these could be cited in the SARs of relevant species, as is currently done with other information that provides evidence of potential threats. In that respect, we agree that the threat posed by marine debris described in Currie *et al.* (2017) should be considered for inclusion in the SARs of relevant species.

## Killer Whale, Southern Resident stock

*Comment 47:* The Coalition reiterates previous comments that the change in return timing and overall use of core summer habitat complicates the established census schedule that the SAR relies on. The Coalition requests that NMFS use the most recent population estimate for Southern Resident killer whales (SRKW) and urges NMFS to include the most recent full count from the Center for Whale Research in the SAR, regardless of the date that count was reached. The Coalition asks that NMFS clearly state the decline observed following the “peak census count of 99 animals in 1995,” with average decrease per year, and specifically for the time period included in this SAR. Recent Population Viability Assessments completed in both the U.S. and Canada should be used to describe the current population trend as well as future outlook.

*Response:* NMFS has helped support the Center for Whale Research’s annual Southern Resident killer whales census since 2004. The census technically ends on 1 July of each year (that date continues to be used in order to maintain comparability to prior years). We note that that Center for Whale Research does not provide their 1 July results until 1 October of that year, hence they have the benefit of two additional months, in particular September (for which SRKW still have a relatively high occurrence rate in inland waters), to confirm if animals are missing or assess the survivability of calves. In recent years NMFS has been providing additional support to the Center for Whale Research for surveys outside inland waters to allow them to complete the census by 1 July. As well, in recent years DFO has been working at the west entrance to the Strait of Juan de Fuca from mid-July to mid-August and has provided the Center for Whale Research with photo-identifications from their fairly frequent encounters. However, given that mortalities are relatively rare events (e.g., 4 mortalities in 2019, or approximately one every 3 months), a delay of a month or two in the Center for Whale Research’s ability to complete the census only fractionally raises the likelihood that a

mortality that occurred after 1 July would be inappropriately “assigned” to the prior year census.

Section 117(2) of the MMPA specifies that SARs shall include information on the current population trend. The Population Viability Assessments for SRKW are only projections of the population size, and reporting this information herein has no statutory requirement associated with the SAR and is not included. Language on the population’s annual rate of decline following the peak census count in 1995 is included in the SAR, along with the current census value. In addition, Figure 2 displays the population census since 1974, including how the population has increased and decreased in size following the peak census in 1995. Originally, the caption of Figure 2 provided the citation to Center for Whale Research 2019. However, given the Coalition’s comment, we have corrected this citation to be Center for Whale Research 2020, which provides annual census values since 1974 from which specific annual changes in population abundance can be easily calculated if desired.

*Comment 48:* The Coalition notes that growth rates and productivity in different Resident killer whale populations may be affected by variability in diet, environmental conditions, and habitat range. The Coalition points out that Alaskan Resident killer whales consume Chinook salmon, similar to Northern Resident killer whales (NRKW) and SRKW but appear to have a more diverse diet and benefit from larger and healthier salmon runs. The maximum net productivity rate for NRKW has been updated and is now estimated to be 2.9 percent. The Coalition recommends using the same rate for SRKW, which yields a PBR of 0.11 (1 animal every 9 years) for a population level of 73 whales, as included in this SAR.

*Response:* NMFS raised this issue with the Pacific SRG in 2020. The Pacific SRG recommended the continued use of  $R_{max} = 0.035$  until a better estimate is available for

review. We agree with this assessment and will continue to use this Rmax, reviewing it when new information is available.

Humpback whale, California/Oregon/Washington stock

*Comment 49:* The Coalition urges NMFS to revise the CA/OR/WA stock to reflect that the Central America distinct population segment (DPS) is a demographically independent population (DIP) separate from the Mexico DPS and to provide abundance estimates for both.

The Coalition requests the inclusion of the record of two dead humpback whales caught in Pacific whiting midwater trawl nets in separate incidents in July 2020. Seen only on electronic monitoring (EM), the whales could neither be identified to DPS nor necropsied to determine cause of death. The Coalition notes that as EM programs continue to expand, and more vessels opt to use EM instead of observers, it will be increasingly difficult to track marine mammal interactions as cameras are not currently designed to monitor marine mammal interactions. This will in turn decrease the amount of data on marine mammal interactions with commercial fisheries and increase uncertainty in M/SI estimates in several marine mammal stock assessments. The Coalition recommends NMFS improve the quantity and quality of information collected on marine mammal interactions.

*Response:* NMFS appreciates this recommendation regarding designating humpback whale stocks. In late 2019, NMFS finalized a new Policy Directive: Reviewing and Designating Stocks and Issuing Stock Assessment Reports under the Marine Mammal Protection Act (NMFS 2019). This directive established that DIP delineation and stock designation are separate processes. DIP delineation is the process of interpreting the scientific lines of evidence supporting whether groups of animals are demographically independent, including determining the geographic range of the groups. DIP delineation occurs outside the SAR process, and is described in Martien *et al.*

(2019). Stock designation is the process of officially classifying a stock as a management unit that will then be described and assessed in SARs and considers whether individual DIPs can be effectively managed as stocks. In light of the 2016 ESA humpback whale DPS listings, the MMPA humpback whale stock designations are currently being re-evaluated according to the process laid out in NMFS (2019). NMFS is reviewing the best available science on humpback whale population structure in the Pacific and evaluating the lines of evidence to, where possible, delineate humpback whale DIPs as guided by Martien *et al.* (2019). This review and evaluation is currently underway and following its completion, we will follow the process to revise stock designations following NMFS (2019) as resources allow.

Both the humpback whale incidents referred to in the comment were outside the time frame of this SAR. Regarding EM technologies, NMFS believes these can provide valuable supplementary data in addition to traditional fisheries observers for collecting data on fishing effort and catch (landings and discards), including bycatch of protected species. While we have made significant strides in assessing the technology and potential applications of EM, there are continuing policy and data-related challenges that come with new technologies. These include how to process and store the enormous amount of electronic data, enforcement of compliance issues, privacy concerns of fishery participants, costs, and image processing. As research and development efforts continue, we are actively working to include protected species in those efforts. In time, we expect to see EM technologies available for wider applications, including select fisheries for monitoring bycatch of protected species.

False Killer whale, Hawaiian Island Stock complex

*Comment 50:* HLA appreciates that NMFS has updated the False Killer whale SAR to incorporate the results of the line transect survey that occurred in 2017, as well as NMFS' associated modeling work. For future surveys, HLA requests that the results be

processed and reported in the SAR more promptly. HLA comments that it is not consistent with the MMPA, or otherwise acceptable, to update a SAR with key information four years after the data has been gathered. HLA believes the results presented in the draft SAR, which reflect the best available scientific information, demonstrate that the deep-set fishery's M/SI rate for the Hawaii Pelagic False Killer whale Stock (Pelagic Stock) is far below the stock's PBR. Specifically, the deep-set fishery's M/SI rate in the U.S. EEZ (6.5) is less than half of the PBR for the Pelagic Stock in the EEZ (16), and the fishery's overall Pelagic Stock M/SI rate (35.3 [combining inside and outside the EEZ]) is less than 15 percent of NMFS estimated PBR for the central Pacific (259). These results confirm the positions HLA has taken since the False Killer whale Take Reduction Team formed in 2009—i.e., that NMFS has consistently underestimated the abundance of the Pelagic Stock and that the deep-set fishery's M/SI rate does not exceed, and has never exceeded, the PBR for that stock. HLA comments that it presented a detailed statistical analysis performed by Dr. Ray Hilborn showing that NMFS had substantially underestimated the population size of the Pelagic Stock in the Hawaii EEZ. At that time, NMFS estimated the EEZ stock size to be 484 whales. Dr. Hilborn's analysis concluded that a more accurate abundance estimate was 2,066 whales in the EEZ. After HLA presented those results, HLA believes NMFS wrongly criticized and discarded Dr. Hilborn's analysis.

HLA comments that NMFS current estimate for the Pelagic Stock in the EEZ is 2,086 whales (only 20 more than Dr. Hilborn estimated in 2009). HLA comments that the best available science, as reported in the draft SAR, shows that the population size of the Pelagic Stock in the EEZ has consistently been approximately 2,100 animals going back to 2002. Specifically, the draft SAR, based on Bradford *et al.* (2020), estimates that the stock numbered 2,144 animals in 2010 and 2,122 animals in 2002. This demonstrates that the Pelagic Stock has never been "strategic" because the deep-set fishery's M/SI rate has

never exceeded a PBR based on those abundances. This also shows that there was no basis, as HLA argued in 2009, to include the Pelagic Stock within the scope of the False Killer whale Take Reduction Team. Finally, HLA believes the best available science also shows that the Pelagic Stock is either increasing or, at worst, remaining stable. If NMFS' pre-2010 estimate of 484 whales for the Pelagic Stock in the EEZ is to be believed, then the stock has increased in size dramatically over the ensuing years. Alternatively, based on the current best available science (Bradford *et al.* 2020), the stock has remained stable at a high abundance (of approximately 2,100 whales) within the Hawaii EEZ since at least 2002. Either way, HLA believes there is no evidence that the Hawaii-based longline fisheries are having any noticeable impact on the stock.

*Response:* NMFS agrees that the timely publication of results that inform SARs is important. Surveys were completed at the end of 2017, and the collected data were quality-checked and verified into 2018. New data protocols designed to improve abundance estimates for this species had to be integrated with existing line-transect methodology and updated analysis approaches to obtain the most robust estimates of abundance. After undergoing peer review, the final results were published in 2020, with the time between data collection and publication consistent with other studies using new approaches to generate estimates of abundance.

False killer whale assessments are complex. We have learned a lot about false killer whale social structure and behavior over the past 10-15 years that has significantly changed the way we collect and analyze survey data for this species. While we have much greater confidence in our 2002, 2010, and 2017 estimates now than we did when the 2002 or 2010 estimates were originally formulated, the older estimates were the best available estimates at the time they were published and used in the SARs. We no longer refer to those estimates in the SAR because they are no longer the best available. To refer to them now as rationale for arguing the stock has increased is inappropriate. The MMPA

calls for using the best available scientific data available at the time that the assessments are to be completed. PBR is designed to deal with great uncertainty and is inherently precautionary. Although it is coincidental that the Hilborn 2009 analysis produced an abundance estimate that is close to our current estimate, our assessment of that analysis has not changed. There were documented problems with the Hilborn analysis, and it used what are now severely outdated data and parameter estimates, such that it is inappropriate to compare the outdated Hilborn 2009 estimate with our current estimate representing years of targeted improvements in data collection, analytical approach,  $g(0)$  estimation, etc.

With regard to comparing the current PBR to fishery mortality, we are clear within the SAR and in all other communications about our pelagic stock abundance estimates that the full central Pacific estimate provided in Bradford *et al.* (2020) and in the SAR represents more than one stock of false killer whales. The Palmyra stock, Hawaii pelagic stock, and any Eastern Pacific stocks are all also partially included here. Since we do not presently have high-seas boundaries for any of these stocks, we are not able to partition the full central Pacific estimate to the Hawaii pelagic stock, and, therefore, cannot meaningfully compare the full Hawaii pelagic stock abundance and PBR with fishing mortality.

*Comment 51:* HLA comments that the draft 2020 SAR assigns a recovery factor of 0.5 to the Hawaii pelagic stock, which is the value typically assigned to depleted or threatened stocks or stocks of unknown status with a mortality estimate CV of 0.3 or less. However, the Hawaii pelagic stock is not depleted or threatened, nor is its status unknown. This status should be accurately reflected with a recovery factor that is greater than 0.5 (i.e., closer to 1.0 than to 0.5).

*Response:* A recovery factor of 0.5 is appropriate for the Hawaii pelagic stock. There are no estimates of population trend for this stock, and the model used to produce



the new 2002, 2010, and 2017 could not accommodate a trend term given the sparse dataset. Stable or increasing levels of bycatch and depredation may be driven by a number of factors, including increasing overlap in the occurrence of false killer whales and fishing activity, learning by whales to approach fishing boats, increasing false killer whale population, or changes in the fishery that allow for higher rates of depredation or observed bycatch.

*Comment 52:* HLA comments there have been no Hawaii-based deep-set longline fishery interactions with the Main Hawaiian Islands (MHI) insular false killer whale stock and comments that the draft SAR incorrectly attributes M/SI to the deep-set fishery in 2017 and in 2018. HLA requests that, if NMFS nevertheless proceeds to attribute M/SI to the deep-set fishery (which HLA strongly disagrees with), then HLA requests the draft SAR should at a minimum state that there are no confirmed deep-set fishery interactions with the MHI insular stock, and that no deep-set fishery interactions with the MHI insular stock have occurred in the very limited area where longline effort might overlap with the assumed range for the stock.

*Response:* NMFS has addressed this concern in previous responses to comments on the SARs. NMFS' Observer Program does not observe every deep-set trip. With ~20 percent coverage, some statistical extrapolation/approximation of what is observed is required. False killer whale takes are relatively rare. The rarity of observed takes, together with the sampling design mean that the lack of observation does not equate to the lack of actual interactions. We agree that we can more explicitly state that no confirmed MHI insular false killer whales have been observed as taken in this fishery, though this needs to be balanced by the fact that very few of the observed takes are identified to stock due to the lack of tissue samples or adequate photographs. NMFS is not attributing interactions that occur outside of the MHI insular stock area to the MHI insular stock. We are prorating the estimated portion of the take to account for fishing

effort that occurs within the MHI insular stock range and based on the relative density of the false killer whale stocks in this area. In reality, if an MHI insular false killer whale were taken by the fishery, we would very likely be underestimating the impact on this stock given our current proration method.

*Comment 53:* HLA notes that the draft SAR estimates the MHI insular stock abundance to be 167 animals, based upon Bradford *et al.* (2018), which found that the population size of the MHI insular stock in certain study areas has consistently ranged between 144 and 187 animals over a 16-year period. HLA comments that the draft SAR's reported abundance estimate of 167 animals underestimates the MHI insular stock's abundance, perhaps to a very significant degree. HLA comments that it is unscientific and contrary to the MMPA for NMFS to report the estimated abundance for only a portion of the MHI insular stock. HLA notes that the MMPA requires the SAR to "describe the geographic range of the affected stock" and to provide minimum population estimates for "such stock" (not a "portion of such stock"). HLA states in its comments that NMFS has made no attempt to estimate the abundance of the MHI insular stock across its range or to apply "appropriate correction factors" to do so. HLA notes that the draft SAR is therefore legally deficient and must be corrected.

If NMFS nonetheless retains the MHI insular stock abundance estimate of 167 animals, then HLA believes that number should be considered the "minimum population estimate." HLA notes that as Bradford *et al.* (2018) acknowledges, the estimate of 167 animals is an underestimate, so there is no need to apply an additional reduction factor to this number for purposes of reporting the "minimum population estimate" because NMFS already has a scientifically published "reasonable assurance that the stock size is equal to or greater than" 167 animals. HLA comments that to report an even lower "minimum population estimate" is arbitrary and contrary to the MMPA.

Finally, HLA believes should NMFS retain the MHI insular stock population estimate of 167 animals with no additional information about the actual population size, it must, consistent with its obligation to report the best available scientific information, disclose what specific portion of the MHI insular stock's range was surveyed in the Bradford *et al.* (2018) study. HLA believes if NMFS is going to report an abundance estimate for only a portion of an MMPA stock's range, then at the very minimum it must disclose to the public what portion of the range is at issue.

*Response:* The second excerpt from Bradford *et al.* (2018) was incomplete. The remainder of the quoted paragraph is: "However, movement analyses of 2 of the 3 social clusters have shown that individuals satellite-tagged by CRC [Cascadia Research Collective] on the leeward sides of the MHI regularly use both leeward and windward waters throughout the chain (Baird *et al.* 2010, 2012), which suggests there are unlikely to be individuals in the population that never use the predominantly leeward sampling areas [that were clearly identified relative to the stock range in Figure 1 of the paper]. Therefore, it is likely that all individuals in the population have been exposed to sampling efforts at some point during the study period, although not necessarily in each year." In general, this paper appropriately acknowledges that unavoidable sampling biases led to some degree of underestimation in the annual abundance estimates, but that all supporting evidence indicates the population is small. Thus, there is no basis to suggest that this underestimation is substantial. NMFS has, and will continue to work towards understanding and addressing the availability issues discussed at length in Bradford *et al.* (2018), though we do not believe the underestimation is equal in all years or that it is substantial in any year. We will continue to use the point estimates and CV provided there to compute an  $N_{min}$ .

*Comment 54:* WPRFMC comments that in the draft 2020 SAR, NMFS uses only the most recent abundance estimate to calculate the PBR. WPRFMC recommends that

using a tiered approach for calculating PBR based on data availability would allow for the use of all available abundance estimates to estimate the minimum population estimate (N<sub>min</sub>) and recovery factor, and reduce the uncertainty in the PBR estimates. WPRFMC therefore requests that NMFS include all available abundance estimates for the pelagic false killer whale stock using the approach developed by Brandon *et al.* (2017).

*Response:* NMFS appreciates the request for more expediency in generating false killer whale abundance estimates and reporting them in the SARs. We understand the importance of these estimates and their bearing on management, which underscores our commitment to ensure our results are as robust and reliable as possible. Please see our response to comment 50.

Regarding the tiered PBR approach, the MMPA calls for using the best available scientific data available at the time that the assessments are to be completed. The NMFS Guidelines for Assessing Marine Mammal Stock (GAMMS 2016), provide guidance on the calculation of N<sub>min</sub> to the 20th percentile of a log-normal distribution. This approach is designed to deal with great uncertainty and is inherently precautionary.

#### North Pacific Gray Whales

*Comment 55:* The Makah Tribe notes that the draft SAR compounds contextual ambiguity by using the name Western Breeding Stock (WBS) to identify the “third unnamed stock” in the description of the International Whaling Commission (IWC) Scientific Committee’s stock structure hypothesis 4a. They recommend that NMFS either name the third implied stock based on its feeding and wintering grounds, e.g., Sakhalin Eastern Breeding Stock which will distinguish it from the WBS and Eastern Breeding Stock (EBS), or use the same phrase as the IWC Scientific Committee: “WFG (Western Feeding Group) whales that interbreed largely with each other while migrating to the Mexican wintering ground” (IWC 2020b).

*Response:* NMFS has aligned the stock hypothesis language used in the IWC stock structure document (IWC 2020b) with that appearing in both the Eastern North

Pacific (ENP) and Western North Pacific (WNP) gray whale SARs. This should eliminate the previously confounding reference to the WBS for the implied third breeding stock. The unnamed third breeding stock referenced by the IWC is now referred to as “WFG (Western Feeding Group) whales that interbreed largely with each other while migrating to the Mexico wintering ground.”

*Comment 56:* The Makah Tribe comments that the new abundance estimate for the Pacific Coast Feeding Group (PCFG) was completed in late 2019 and should be included in the 2020 SAR in the section on Population Size, Potential Biological Removal, and other appropriate sections to reflect current information (Calambokidis *et al.* 2019). The SAR should also include the recently published abundance estimate for the ENP stock based on the 2019-20 survey (Stewart and Weller 2021). Also, the Makah Tribe recommends removing the description of the stranded whales as emaciated in the description of the Unusual Mortality Event (UME) in the Population Size section.

*Response:* NMFS appreciates reference to new documents that became available during the public comment period for the draft 2020 SARs. New abundance estimates for ENP and PCFG whales will be included the next time the ENP SAR is revised. This will allow for thorough peer review by the SRG and adequate public comment. Language has been changed in the final 2020 SAR to better reflect the variable body conditions of stranded whales during the UME. Figures that pertain to the UME have been removed from the SAR and the reader is now pointed to the UME website, which includes periodic updates to the UME status.

*Comment 57:* The Makah Tribe recommends the first sentence of the Subsistence/Native Harvest Information section be modified to remove the geographic limitation to the Bering Sea. Furthermore, the Makah Tribe requests that the sentence should recognize that gray whales were once hunted in Canada (Monks *et al.* 2001).

Additionally, in the new text describing NMFS' proposed waiver, the Makah Tribe recommends two changes. First, in the reference to three annual strikes, the SAR should explain that this is the maximum number of strikes allowed under the proposed regulations, e.g., "based on the maximum allowed 3 strikes annually." Second, the description of the post-hearing comment period should reflect that it ended in March 2020, e.g., "NMFS requested public comment." Also, the description of the IWC's approval of a gray whale catch limit should be revised to reflect current terminology, e.g, replacing "quota" with "catch limit," and should reflect changes to the catch limit made in 2018.

*Response:* NMFS has included new language in the final 2020 SAR to incorporate these suggestions.

*Comment 58:* The draft SAR refers to unpublished reports that have since been published in peer-reviewed journals. The Makah Tribe recommends that the following replacement citations for unpublished reports be used where applicable:

Lang *et al.* (2011b) should be updated to Lang *et al.* (2014) and Mate *et al.* (2010) should be updated to Lagerquist *et al.* (2019).

*Response:* These references have been updated in the final 2020 SAR.

*Comment 59:* Please see the Makah Tribe's recommended changes to IWC stock structure hypotheses in the draft SAR for the ENP stock, as the draft WNP SAR incorporates identical text.

*Response:* See response to comment 57.

*Comment 60:* The tribe comments that the draft SAR updates text regarding the estimated probabilities of a Makah hunt taking a WNP gray whale to reflect the conclusions of Moore and Weller (2018). However, in making the update, the draft SAR fails to carry forward an explanation of the probabilities that is helpful to laypeople reading the SAR and makes clear that the estimated probability of such a take is very

low. The Makah Tribe recommends that an updated version of that explanatory sentence (“This corresponds to an expectation of greater than 1 WNP whale strike in one of every 83 to 167 years”), which is stricken in the raft SAR, be included in the revision. NMFS also needs to correct the 95 percent Bayesian Credible Interval (CRI) for the probability for a 10-year hunt to “(95 percent CRI 0.030 – 0.093).” Because the same text is used in the draft ENP SAR, the changes above should be made in revising that SAR as well.

*Response:* NMFS has added language to reflect statements from the proposed rule (84 FR 13604; April 5, 2019) that provides details on the WNP risk assessment by Moore and Weller (2018).

*Comment 61:* The Status of Stock section of the draft SAR begins with the assertion that “[t]he WNP stock is listed as ‘Endangered’ under the U.S. Endangered Species Act of 1973 (ESA) and is therefore also considered ‘strategic’ and ‘depleted’ under the MMPA.” As with previous SARs for the WNP stock, no explanation of the listing status is provided, but the draft SAR does note an ongoing 5-year Status Review initiated by NMFS in 2018. The Tribe believes NMFS never addresses the crux of the issue, *i.e.*, the agency’s description of the WNP stock in the 1994 ESA delisting decision as geographically and reproductively isolated from the ENP stock is fundamentally inconsistent with the draft SAR’s classification of whales migrating from Sakhalin to Mexico as part of the same WNP stock and, therefore, “Endangered.”

In the draft SAR, intermittent observations of gray whales in Asian waters are cited as evidence of continued migration to an Asian breeding ground. Further, Cooke *et al.* (2019) found that up to 20 percent of WNP whales migrate to breeding grounds in Asian waters, providing support for their conclusion that “it is likely that a western breeding population that migrates through Asian waters still exists.” At the same time, the IWC Scientific Committee has developed stock structure hypotheses where in the most plausible hypotheses the WBS, which in Makah’s view corresponds to the WNP

stock described in the ENP stock's delisting documents, has either been extirpated (3a and 4a) or is extant but exists solely in Asian waters (5a). The same hypotheses postulate that whales that feed at Sakhalin and migrate to North America are either the WFG, which interbreeds with other whales of the EBS (3a and 5a) or breeds largely with other WFG whales while migrating to Mexico (4a). NMFS has never provided a rational explanation for its treatment of WFG whales, *i.e.*, those Sakhalin whales that migrate to North America, as equivalent to the WBS, which as described by the IWC matches the agency's 1994 description of the geographically isolated, "Endangered" WNP stock. Indeed, the agency's incorrect use of "WBS" for the unnamed, implied third breeding stock, as discussed above, appears related to this lack of clarity in the draft SAR. Absent an explanation in the SAR, NMFS' assertion that the WNP stock described in the draft SAR is "Endangered" is untenable and the Status of Stock should be changed to "unknown" until NMFS makes a formal determination of the status of WFG whales.

The Tribe has commented at length on this issue in previous draft SARs (2014 and 2018) and believes NMFS' response does not explain how, if at all, the agency's view of stock structure corresponds to the stock structure hypotheses of the Scientific Committee.

*Response:* We acknowledge that the stock structure of North Pacific gray whales is an area of active investigation, internationally and domestically, as evidenced by the IWC's Scientific Committee currently recognizing three 'high plausibility' stock structure hypotheses for WNP gray whales (IWC 2020). Consistent with our responses to related comments from the Makah on the 2018 SAR, we have relied on the best available information to update the "Stock Definition and Geographic Range" information in the final SAR. Also, NMFS has convened a Status Review Team to evaluate this information and the ESA status of WNP gray whales (83 FR 4032; January 29, 2018), including the



delineation of any distinct population segment (DPS). Results from this evaluation will be incorporated as appropriate in future updates of the North Pacific gray whale SARs.

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Evan Howell,

Director, Office of Science and Technology,

National Marine Fisheries Service.

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