MARINE MAMMAL COMMISSION

3 April 2014

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Office of Protected Resources
National Marine Fisheries Service
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Dear Ms. LeBoeuf:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the draft National Marine Fisheries Service (NMFS) 2013 stock assessment reports (SARs) for marine mammals occurring in U.S. waters. These reports provide valuable information needed to understand and address important marine mammal conservation issues. The Commission appreciates NMFS's efforts to improve these reports, as well as the opportunity to review them, provide comments, and recommend improvements.

Unfortunately, the available stock assessment information often is not sufficient to meet the requirements of the Marine Mammal Protection Act (MMPA). Limits in overall NMFS funding, as well as lack of prioritization on marine mammal stock assessments, have impeded the agency's ability to carry out its mandate under MMPA. Many stock assessments lack even the most basic information such as up-to-date minimum abundance estimates, which are necessary to calculate the stocks' potential biological removal (PBR) levels. Estimates of serious injury and mortality rates are lacking for even more stocks. In the absence of such information, managers cannot confidently determine the status of these stocks, the significance of human effects on them, and the effectiveness of management measures. In the end, the lack of information means that management measures will either fall short of providing needed protection for the animals or exceed what is needed to achieve the conservation objectives, thereby imposing unnecessarily harsh and burdensome constraints on human activities.

RECOMMENDATIONS

To improve stock assessment efforts generally, the Marine Mammal Commission recommends that the National Marine Fisheries Service—

- complete its review of the Guidelines for Assessing Marine Mammal Stock III Workshop (GAMMS III) recommendations and public comments received on those recommendations, and issue new stock assessment guidelines before conducting the 2015 stock assessments;

- make every effort to ensure that data collected on at-sea distribution and movements of pinnipeds are made available in a timely manner and to a broad audience; and

- make full use of information on abundance, density and/or stock ranges, and new analytic methods such as spatially explicit mark-recapture and line-transect models or Bayesian inference from similar cases, to provide bounds on possible abundance and PBR estimates for newly split stocks, whenever possible, as was done for pantropical spotted dolphins in Palmyra in 2010 and for false killer whales in American Samoa in 2010.

To improve stock assessment efforts in the Atlantic and Gulf of Mexico, the Marine Mammal Commission recommends that the National Marine Fisheries Service—

- include in the North Atlantic right whale stock assessment report 1) an evaluation of the current population size relative to the carrying capacity of the environment, 2) a discussion of the possible reasons for the low population growth rate relative to that estimated for southern right whale populations, and 3) the reasons why the recent estimate of net population growth rate was rejected in favor of the default rate; and

- make every effort to identify pilot whale serious injury and mortality data that can be apportioned to one or the other species, and, in the stock-assessment reports, attribute serious injury and mortality data to one of the two species, but only to an "unidentified pilot whale" category if the former cannot be achieved.

To improve stock assessment efforts in Alaska, the Marine Mammal Commission recommends that the National Marine Fisheries Service—

- provide an explanation as to why the 2014 priority activities recommended in the recovery plan for the critically endangered eastern population of the North Pacific right whale were not considered an agency priority for funding, and indicate when the agency expects to allocate the roughly $2.5M in funding required to implement the first two years of the recovery plan activities;

To improve stock assessment efforts in the Pacific, the Marine Mammal Commission recommends that the National Marine Fisheries Service—

- set PBR to zero in those cases that are not consistent with the theory behind the PBR model and that involve stocks with no tolerance for additional unmitigated human-caused removals, including the Hawaiian monk seal; and

- adjust the recovery factor (Fr) downward for the California/Oregon/Washington stocks of Meslopodon and Cuvier's beaked whales, as recommended in Wade and Angliss (1997), to account for the substantial and prolonged declines experienced by these stocks, and develop clear guidelines for the specification of PBR under other circumstances in the which the underlying, surplus-production premise of the model is violated, such as for a stock that is below OSP (optimum sustainable population) or depleted and declining significantly, but is not at immediate risk of extirpation.

RATIONALE

GENERAL COMMENTS

Finalization of the GAMMS III recommendations

In last year's SARs comment letter the Commission recommended that NMFS develop and incorporate into its stock assessment reports a framework for describing the full effects of all human activities that may cause serious injury or mortality of marine mammals. In addition, the Commission recommended that the SARs include information about the degree of uncertainty in other factors that may be affecting the stock's status and what would be required to reduce that uncertainty. NMFS noted in its response to the Commission's comments that it could do a better job in these areas and that similar recommendations were made by the GAMMS III workshop (Moore and Merrick 2011).

In last year's SARs comment letter the Commission also recommended that NMFS "consider the feasibility and advisability of providing explicit technical guidance on trend analysis and, for each stock assessment with no trend analysis, require an explicit explanation for why such an analysis could not be completed." In its response to the Commission's recommendations, NMFS acknowledged the lack of trend analyses and the lack of explanation for that shortcoming in many of the SARs. NMFS, in its response to the Commission, also made reference to a new trend-estimation method developed by J. Moore and J. Barlow at the Southwest Fisheries Science Center (SWFSC) and stated its intention to apply that analysis to other stocks where possible.

The Commission considers the Moore and Barlow method to be an important addition to the marine mammal stock assessment toolbox and supports the expansion of its use. This is just one example of a GAMMS III recommendation, which if fully implemented would substantially improve NMFS's marine mammal stock assessments. The GAMMS III recommendations were published in December 2011, and public comments were solicited in March 2012 (Moore and Merrick 2011). NMFS has not issued new stock-assessment guidelines based on the GAMMS III recommendations and public comments for over two years. The Marine Mammal Commission recommends that NMFS complete its review of the GAMMS III recommendations and public comments received on those recommendations, and issue new stock assessment guidelines before conducting the 2015 stock assessments.

Data on pinniped distribution and movements

The Commission is aware of several NMFS field projects that have collected and are collecting valuable data on the distribution and movements of pinnipeds. In many cases, those projects are using innovative telemetry instrumentation that provides a wealth of information on animal behavior, as well as on the habitats used by the animals. While the Commission commends the collection of such data, without timely publication in peer-reviewed journals or reports that are broadly available, or provision of the raw data to publicly accessible databases, the broader value and potential benefit of those efforts are greatly reduced. Information from those efforts is useful not only to NMFS to describe at-sea distribution and geographic range of pinnipeds more completely in the stocks assessment reports, and to conserve declining populations and manage increasing human interactions with expanding pinniped populations, but also to other federal agencies, action

proponents, and researchers that use the data (e.g., the Navy's draft environmental impact statement and letter of authorization application regarding training and testing activities in the Northwest Training and Testing study area). Therefore, the Marine Mammal Commission recommends that NMFS make every effort to ensure that data collected on at-sea distribution and movements of pinnipeds are made available in a timely manner and to a broad audience.

PBR estimates for new stocks created by splitting existing stocks

In recent years NMFS has split a number of marine mammals stocks into two or more stocks based on new genetic or other information that justified the need for stock differentiation (e.g., coastal bottlenose dolphins in the Atlantic, harbor seals in Alaska, and odontocetes in Hawaii). In several cases NMFS has decided that sufficient information has not been available to calculate abundance and PBR for each of the new stocks (e.g., pantropical spotted dolphins in Hawaii). However, in some cases geographically specific abundance data were available on the original, single stock, but that information was not used to estimate PBR for the new stocks.

The Marine Mammal Commission recommends that NMFS make full use of information on abundance, density and/or stock ranges, and new analytic methods such as spatially explicit mark-recapture and line-transect models or Bayesian inference from similar cases, to provide bounds on possible abundance and PBR estimates for newly split stocks, whenever possible, as was done for pantropical spotted dolphins in Palmyra in 2010 and for false killer whales in American Samoa in 2010.

ATLANTIC AND GULF OF MEXICO

North Atlantic right whale

The stock assessment report for this species states that the maximum productivity rate (R_{max}) for the population is unknown, and that for purposes of this stock assessment report it is assumed to be 4.0 percent, the default value used for cetaceans. The estimated net productivity rate, based on photo-identified whales, is 2.9 percent per year[1] for the period 1990 to 2010. This rate is substantially less than the default rate and also less than empirical estimates of 6-7 percent for some southern right whale (*E. australis*) populations (Best et al. 2001). NMFS's stock assessment guidelines allow for the use of the theoretical default value (4 percent), or the estimated rate at low population size. Although the guidelines do not include advice as to what constitutes "low population size," the Commission assumes based on the theory behind R_{max} that it would be a level at which density-dependent effects would be unimportant. Although the North Atlantic right whale population has been increasing, it could still be considered small relative to its carrying capacity level. Estimates of the pre-whaling population size in the western North Atlantic range from 1-2,000 whales (Reeves et al. 1992, 1999) to a less certain 12-15,000 (Gaskin 1991), suggesting that the current population of roughly 500 whales could be as low as 3 percent or as high as 50 percent of carrying capacity. Although the upper limit of this range could not be considered a "low population size," the lower limit could be considered such. Therefore, the Marine Mammal Commission recommends that NMFS include in the North Atlantic right whale stock assessment report 1) an evaluation of the

[1] This rate is based on unpublished data and analyses presented in the draft stock assessment report.

current population size relative to the carrying capacity of the environment, 2) a discussion of the possible reasons for the low population growth rate relative to that estimated for southern right whale populations, and 3) the reasons why the recent estimate of net population growth rate was rejected in favor of the default rate.

Pilot whales

Because pilot whales seriously injured or killed in various fisheries are not always identified to species, the same serious injury and mortality statistics are reported for both pilot whale species. As a result, the information provided in the stock assessment reports for short-finned and long-finned pilot whales is partially redundant. In some cases, however, identifications were made or could be assumed based on the species ranges. Further, it should be possible to apportion serious injury and mortality data based on the site-specific, relative abundance of the two species, as is done for the Hawaiian stocks of false killer whales. The Marine Mammal Commission recommends that NMFS make every effort to identify pilot whale serious injury and mortality data that can be apportioned to one or the other species, and, in the stock-assessment reports, attribute serious injury and mortality data to one of the two species, but only to an "unidentified pilot whale" category if the former cannot be achieved.

ALASKA

North Pacific right whale

The population of North Pacific right whales in the eastern North Pacific is one of the most endangered populations of large whales in the world. In 2012 the Commission recommended that NMFS assess the risks of entanglement and ship strike to that population. NMFS responded to the Commission's recommendation, stating that a report on entanglement risk would be published in the coming year, but the report has not been published. In addition, in its response, NMFS stated that it could not estimate the risk of ship strike due to the lack of information on the movements of the whales, particularly through Unimak Pass, which is a major trans-Pacific shipping corridor. However, NMFS did not suggest how it would assess and minimize the risk of shipping to the population. Reference was made to the agency's recovery plan for this species, but NMFS did not provide any information on its implementation plan. The Commission is aware that NMFS has been unable to allocate a significant amount of funding to the costs of the recovery plan activities called for in fiscal year 2014 (around $1.3M). Therefore, the Marine Mammal Commission recommends that NMFS provide an explanation as to why the 2014 priority activities recommended in the recovery plan for the critically endangered eastern population of the North Pacific right whale were not considered an agency priority for funding, and indicate when the agency expects to allocate the roughly $2.5M in funding required to implement the first two years of the recovery plan activities.

PACIFIC

Hawaiian monk seal

The "Potential Biological Removal" section of the Hawaiian monk seal stock assessment report quite correctly points out that because the population is decreasing its "dynamics do not conform to the underlying model for calculating PBR." However, the Commission does not agree that this should lead to the conclusion reached in the report – that PBR is "undetermined." With PBR undetermined there is no reference point against which the magnitude of human-caused mortality and serious injury can be evaluated, which makes it difficult to focus management and public attention on eliminating human-caused mortality and serious injury. The PBR model is based on the assumption that there should be some surplus production that could be lost to human-caused mortality without significantly compromising the chances of population recovery. For a population such as this one, which has been declining for years due to reasons that cannot be attributed to direct human-caused mortality, the chance of recovery is zero as long as the factors affecting its population dynamics do not change. Therefore, any increase in unmitigated human-caused mortality would only further accelerate the decline, which means that there is no level of human-caused mortality that would not compromise the chances of recovery. Perhaps more importantly, it means that any increase in unmitigated human-caused mortality would only increase the risk of extinction. For an endangered species with a small population size that is an unacceptable risk. An important exception to this view would be permitted takes that have been determined to have a compensatory conservation value. Thus, the most appropriate action would be to set PBR at zero, which would deliver the clearest message that the population has no tolerance for any human-related removals.

The Commission is aware that this issue was the topic of considerable discussion in the GAMMS III workshop (Moore and Merrick 2011), and that participants could not reach a consensus except to recommend in such circumstances that "if feasible, PBR should still be calculated and included in the Reports to comply with the MMPA, but … Report authors may depart from these guidelines if sound reasons are given in the Report." The GAMMS III workshop did consider the possibility of setting PBR at zero in such cases, but ultimately did not make that recommendation. The Commission feels that if an endangered or threatened species or stock with small population size is declining significantly, then that species or stock cannot tolerate any additional mortality, which means that all sources of human-caused mortality need to be eliminated whether or not they are the primary cause of the decline. Therefore, the Marine Mammal Commission recommends that NMFS set PBR to zero in those cases that are not consistent with the theory behind the PBR model and that involve stocks with no tolerance for additional unmitigated human-caused removals, including the Hawaiian monk seal. However, because there have been no federally-managed, fishery-related serious injuries or mortalities recently, it would not be appropriate or productive to form a take reduction team unless in the future the fisheries do become a factor that is significantly contributing to the rate of decline in the population.

Mesoplodon and Cuvier's beaked whales – California/Oregon/Washington stocks

Moore and Barlow (2013) found the probability that the west coast Cuvier's beaked whale stock declined from 1991-2008 was 84 percent, and the estimated trend over that period was -2.9 percent per year. A similar analysis for the aggregate of west coast *Mesoplodon* stocks found a 96 percent probability of decline and an estimated trend of -7.0 percent per year. However, these results do not

appear to have been taken into account in the selection of the recovery factor (F_r) used to calculate the PBRs for these stocks. In both stock assessments a value of 0.5 was chosen, corresponding to a stock of unknown status with no known recent fishing mortality. However, the Wade and Angliss (1997) guidelines state that for stocks that are declining, especially if threatened or depleted, F_r should be decreased from 0.5 in proportion to the magnitude and duration of the decline. The Moore and Barlow (2013) analysis estimated the Cuvier's beaked whale stock size to be 10,771 (CV = 0.51) in 1991 and <7,550 (CV=0.55) in 2008, an overall decline of at least 30 percent. The corresponding stock size estimates for the aggregate of *Mesoplodon* beaked whale stocks were 2,206 (CV=0.46) and 811 (CV=0.65), a decline of 63 percent. Such large declines brought about by trends of -2.9 and -7.0 percent per year over 17 years are large in both magnitude and duration. These declines have almost certainly pushed one or more of the beaked whale stocks below OSP, which should be sufficient to designate such stocks as depleted under the MMPA, conclusions that were also reached in the stock assessment reports by NMFS.

Because these stocks are declining without a clear demonstration of an anthropogenic cause they do not conform to the assumptions of the PBR model. However, unlike the situation just discussed with the Hawaiian monk seal, these beaked whale stocks are not listed as endangered or threatened under the ESA, or designated depleted or strategic under the MMPA. Nonetheless, the estimated declines are large enough in magnitude and duration that, as just discussed, these likely should be designated as depleted. In this situation, it is not clear whether they can sustain additional human-caused mortality, or if small numbers of deaths due to human activities would not significantly increase the rate of decline. Moore and Barlow (2013) noted that the cause of the declines could be human-related (most likely Navy sonar) or ecosystem-related (several factors), but that the data necessary to assess these possibilities have yet to be collected. Either way it is clear that more attention needs to be given to the specification of PBR under a variety of circumstances that do not conform to the assumptions of the PBR model.

The Marine Mammal Commission recommends that NMFS adjust the recovery factor (F_r) downward for the California/Oregon/Washington stocks of *Meslopodon* and Cuvier's beaked whales, as recommended in Wade and Angliss (1997), to account for the substantial and prolonged declines experienced by these stocks. In addition, the Marine Mammal Commission recommends that NMFS develop clear guidelines for the specification of PBR under other circumstances in which the underlying, surplus-production premise of the model is violated, such as for a stock that is below OSP or depleted and declining significantly, but is not at immediate risk of extirpation.

Finally, the Commission would like to offer a number of specific suggestions and edits for improving the 2013 SARs. The suggestions and edits are detailed in the appendix to this letter. The Commission appreciates the opportunity to provide comments on the draft 2013 marine mammal stock assessment reports. Please contact me if you have any questions regarding the Commission's rationale and/or recommendations.

Sincerely,

Rebecca J. Lent

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Executive Director

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APPENDIX – 'STAFF COMMENTS'

ATLANTIC STOCKS

North Atlantic right whales

Stock Definition and Geographic Range: The first paragraph of this section notes that right whales occasionally occur in the Gulf of Mexico and cites references to Moore and Clark 1963; Schmidly *et al.* 1972. Right whales have been sighted in the Gulf of Mexico more recently than the referenced sightings, including a mother and calf pair seen in the Corpus Christi, Texas, ship channel in March of 2006.[2] This section should be updated to include all sightings, including those in the right whale photo-identification catalogue. Similarly this paragraph cites results of offshore surveys (more than 30 miles from shore) off northeastern Florida between 1996 and 2001 and notes that the offshore occurrence of right whales remains unclear. There have been more recent surveys in waters off northeastern Florida funded by the Navy which observed a birth some 40 nm off Florida. If possible, this section should be expanded to add results from those more recent surveys. The last sentence of the paragraph cites a paper by Patrician *et al.* 2009 that notes evidence of a right whale calf being borne in the Gulf of Maine. It should be noted that a newly born right whale calf was also seen in Cape Cod Bay in January 2012.

The second paragraph of this section notes that there are six major habitats or congregation areas for right whales in the western North Atlantic. That list should be amended to include the recently identified overwintering habitat in the Jordon Basin in the central Gulf of Maine, which also may be an important mating area (see Brown (2012) attached.)

Population Size: This paragraph states that, based on photo-identification data as of 29 October 2012, the number of individually identified whales known to have been alive in 2012 was 455, which is considered the minimum population size. The section should note that this number does not include calves born during the winter of 2011-12 which could not yet be identified individually because of unformed callosity patterns.

Historical Abundance: Citing reports by Reeves *et al.* 2001 and Reeves *et al.* 2007, this section states that a "modest but persistent whaling effort along the coast of the eastern U.S. lasted three centuries, and the records include one report of 29 whales killed in Cape Cod Bay in a single day during January 1700." While this is true, this sentence would be more useful if it notes that Reeves et al 2007 estimated that at least 5,500 whales were killed along the eastern coast of the U.S. since the mid-1600, about 80 to 90 percent of which were taken in a 50 year period between the 1680s and 1730s.

The paragraph goes on to state that:

> "Reeves *et al.* (1992) plotted a series of population trajectories using historical data, assuming a present-day population size of 350 animals. The results suggested that there may have been at least 1,000 right whales in the population

[2] Unpublished information, New England Aquarium, Right Whale Photo Catalogue.

> during the early to mid-1600s, with the greatest population decline occurring in the early 1700s"

Given that catch estimates cited in Reeves 2007 indicate that more than 4,000 animals were killed between 1680 and 1730, this quoted text is no longer relevant and should be replaced by a description of the findings in Reeves 2007.

Annual Human-Caused Serious Injury and Mortality: The first paragraph states that all four documented mortalities during the five-year period considered in this stock assessment occurred after the ship strike rule went into effect in December 2009, but the rule went into effect in December 2008. The paragraph also states that 18 serious injuries and mortalities involving entanglement occurred between 2007 and 2011, but only 17 cases are listed in Table 2. Further, the paragraph states that the average annual number of mortalities and serious injuries from entanglements and ship strikes was 3.25 per year. To avoid confusion about how this rate was calculated, it should be pointed out that the estimate reflects prorating three serious injury cases from 1.0 to 0.75 animals, as recommended by the new serious injury guidelines adopted in 2012, in order to take account of cases in which there was uncertainty regarding the severity or cause of the injury. As is done in some other stock assessment reports, we suggest adding the parenthetical phrase "prorated value" after this estimate. This comment also applies to discussion of this estimate in the section on "Fishery-Related Mortality and Serious Injury." We also suggest checking to ensure that this clarification is included as appropriate in corresponding discussions of all large whale stock assessment reports.

Table 2: The title of this table indicates that it lists confirmed human caused "mortalities" of North Atlantic right whales from 2007 to 2011. It should state that it lists "mortalities and serious injuries". This comment applies to all similar tables in stock assessment reports for all other Atlantic stocks.

In addition, two whales listed as "serious injuries" (#3710 and #3911) were found dead as a result of entanglement injuries, and, therefore, should be listed as "mortalities." Further, the unidentified whale listed as a serious injury due to a ship strike on 3/23/11 should be identified as the 2011 calf of whale #1308 it should be made clear that this whale was not itself struck but rather that its "injury" consisting of losing its mother as a result of a ship strike.

Status of Stock: The discussion and reference to the 1996 and 2006 NMFS status reviews and the 2001 IWC review could be deleted given the new 2012 ESA status review which continues to find that North Atlantic right whales are endangered. Where possible, old outdated references and material should be deleted as new information becomes available. The deleted information will not be lost, however, as the historical record of changes in the status of the stock can be found in the current and collection of past stock assessment reports.

Humpback whales

Table 1 Caption: Insert the word "of" between "analysis" and "resights".

Annual Human-Caused Serious Injury and Mortality: This section includes a paragraph describing how serious injuries were determined before the new guidelines were adopted in 2012. We suggest deleting this paragraph, replacing it with the paragraph under the heading "New Serious Injury Guidelines," and noting that all serious injury determinations in this report reflect the new guidelines. As noted above, this section should also be clarified to indicate that annual estimates of mortality and serious injury reflect the proration of some cases due to uncertainty as to whether the injury was serious or the injury or mortality was due to human causes.

Annual Human-Caused Serious Injury and Mortality – Background: The last paragraph of this section notes that there were 50 mortalities and serious injuries attributed to entanglement between 2007 and 2011. Table 2 indicates there were 52 such cases. The text should be revised to match the table.

Fisheries-Related Mortalities and Injuries: The second paragraph of this section states that there have been 8 fisheries-related mortalities and 36.5 serious injuries (prorated values) between 2007 and 2011. The prorated values should be checked against those listed in the table. We count 20 entanglements that were not prorated and 24 that were prorated to 0.75, which would equal a prorated value of 38 rather than 36.5 entanglement-related serious injuries over the five-year period.

Minke whales

Recent Surveys and Abundance Estimates: The last paragraph of this section notes that a new survey was conducted in 2011 between Virginia and Florida in which no minke whales were sighted. The last two sentences which detail the methods used to conduct the surveys and analyze the results appear to be boilerplate language added to all stock assessment reports and could be deleted given that no minke whales were sighted. However, it would seem appropriate to add that survey to Table 1 with an indication that no whales were sighted.

Cuvier's beaked whale

Recent Surveys and Abundance Estimates: The June-August survey between Florida and central Virginia should be included in Table 1.

Long-finned pilot whale

Annual Human-Caused Mortality and Serious Injury: The first sentence states that between 2007 and 2010 the annual mortality and serious injury rate was 44 whales, and refers to Table 2. Footnote "b" in this table states that take estimates for trawl fisheries observed in 2011 have not

yet been extrapolated into fleet-wide bycatch estimates. These analyses should now be available and included in the report. Also, in Table 2 the observed and estimated numbers of serious injuries and mortalities do not correspond for the mid-Atlantic bottom trawl fishery.

In addition, the introductory paragraph under this section should be reviewed and modified for clarity. For example, to help the reader follow discussion in the subsequent subsection, it would be helpful to note after the first sentence that long-fined pilot whales may be taken in pelagic longline, gillnet, and bottom trawl fisheries. Also, because the second sentence referring to the seasonality of bycatch cites a 2007 reference using data that predate the 2007 to 2011 bycatch estimate in the first sentence, the tense of the sentence should be changed from "were observed" to "have been observed" (assuming the highest bycatch rates have continued to be between September and October after 2007).

Earlier Interactions: The discussion in this section uses terms that make it difficult to link the fisheries/gear types discussed to those identified in preceding sections. For example, the first sentence refers to the "Distant Water Fleet." Assuming this is the U.S. distant water fleet that uses pelagic longlines, this term should be changed to "U.S. Distant Water Pelagic Longline Fleet" so it can be linked to the fisheries discussed in the preceding sections. Similarly, the second paragraph should identify which gear types were used by the "foreign fisheries," the "loligo and illex fishery," and the "joint venture fishing operations."

Northeast Sink Gillnet: This section states that one observed take of a pilot whale that could not be identified to species occurred in 2010 resulting in an annual average mortality for 2010 of "3 (0.82)," which in turn produced an annual average estimate of mortality over the five-year period between 2007 and 2011 of "1 (0.82)." It is not clear what the numbers in parentheses mean. Also, Table 2 indicates that this take occurred in 2011, not 2010. Finally, to clarify why this take could not be identified to species based on when and where it was taken, it would also be helpful to identify the location and month in which the take was observed.

Table 2: This table summarizes observed and estimated pilot whale bycatch for "*Globocephala sp*" between 2007 and 2011. The numbers of observed pilot whales that could be identified to species or assigned to species should be included in the table.

Other Mortality: The second paragraph of this section describes strandings of long-finned pilot whales south of Cape Hatteras. Given that elsewhere in this stock assessment it is noted that all takes of pilot whales south of Cape Hatteras are assumed to be short-finned pilot whales, it is not clear why this section and data in Table 3 include information on pilot whale strandings south of that point. Also, Laist (1996) noted that ingestion of plastics has been reported for both long-finned and short-finned pilot whales and this should be noted as a potential source of serious injury or mortality.

Status of Stocks: Because it is now possible to assign some pilot whale bycatch to species, the word "always" should be inserted between "not" and "possible" in the second sentence of this section.

Short-finned pilot whale

Many of the comments regarding the stock assessment for long-finned pilot whales also apply to the corresponding sections of the short-finned pilot whale stock assessment report. Comments specific to the short-finned pilot whale SAR are provided below.

Annual Human-Caused Serious Injury and Mortality:

Table 2: The title of this table summarizing observed and estimated pilot whale bycatch should identify the years covered. The table should also note that it includes data on bycatch for which some whales were either identified or assumed to be long-finned pilot whales. As noted for long-finned pilot whale, take estimates for trawl fisheries observed in 2011 should now be available and the estimates of trawl-fishery pilot whale bycatch in 2011 should be extrapolated from observer data before finalizing the long-finned and short-finned stock assessment reports.

Northeast Bottom Trawl and Northeast Mid-water Trawls: Given that these fisheries operate part of the time north of Georges Bank, it is not clear why at least some of the bycatch could not be assumed to be long-finned pilot whales.

Canada: Because Canadian waters are north of the likely northern limit of short-finned pilot whales, we suggest deleting this section from the short-finned pilot whale stock assessment report or including an explanation that in all likelihood, pilot whales in eastern Canada are long-finned rather than short-finned pilot whales.

Table 3: This table lists pilot whale strandings along the entire eastern seaboard of North America. Because this stock assessment is focused on short-finned pilot whales, we suggest deleting data for known or assumed long-finned pilot whales (i.e., the columns for long-finned pilot whales and the rows for Newfoundland/ Labrador, Nova Scotia, and Maine, which are all well north of the assumed northern limit of short-finned pilot whales).

Harbor porpoise

Annual Human-Caused Mortality and Serious Injury: The introduction to this section states that part of the estimated bycatch is composed of an average of 44 porpoises per year from Canadian fisheries based on observer data. It should be noted that this estimate was generated by an observer program that ended in 2002.

Harbor seal

Current Population Trend: This section states that a trend analysis for this stock was not conducted, as is the case for many stocks. However, in the "Population Size" section the report states that the "population is no longer growing and has, in fact, declined." These statements should be reconciled.

Annual Human-Caused Serious Injury and Mortality: The first paragraph states that the average annual mortality and serious injury for harbor seals is 407 and has two components: fisheries bycatch (389 seals) and other human-related causes (12 seals). The two components do not add up to the estimated total. The numbers should be checked and changed as appropriate, or an explanation as to why they do not add up should be provided.

Other Mortality – U.S.: The third paragraph of this section notes that 579 seals died during an Unusual Mortality Event in 2011 that has since been closed. The paragraph should be expanded to note whether or not the cause has been identified, and if so, what it was.

Gray seal

Population Size: The third sentence of this section states that "For the gulf in 2012, pup production was … ." The name of the gulf (Gulf of St. Lawrence?) should be identified.

Potential Biological Removal Level: This section states that a PBR value cannot be calculated because the minimum population size is unknown. The words in "in U.S. waters" should be added after the word "size" in the second sentence of the section, given that there is an estimate of minimum number of seals in Canada.

Annual Human Caused Mortality and Serious Injury: The first paragraph of this section notes that a component of the average annual estimate of mortality and serious injury from 2007 to 2011 was 82 seals collected for scientific purposes in Canada. However, the section entitled "Other Mortality" states that "[f]or scientific collections, DFO took 87, 320, and 90 animals, respectively in 2007, 2011, and 2012 (DFO 2012, in review)." These numbers should be checked to be sure they are consistent.

Common bottlenose dolphin – Western North Atlantic Northern Migratory Coastal, Western North Atlantic Southern Migratory Coastal, and Southern North Carolina Estuarine Stocks

Earlier Abundance Estimates: It is not clear why the discussion of earlier abundance estimates in this section, for each stock, was not moved to an appendix similar to most other stock assessment reports.

Table 2: It is not clear why the abundance estimates for the 2010 and 2011 surveys are not reported separately in the table, for each stock, with a separate entry for the combined, weighted estimate for 2010/11, as was done in other reports.

Common bottlenose dolphin – South Carolina/Georgia Coastal, Northern Florida Coastal, and Central Florida Coastal Stocks

Stock Definition and Range: In each case, the first two subsections of this section ("Geographic Range and Coastal Morphotype Habitat," and "Distinction between Coastal and Estuarine

Bottlenose Dolphins") could be shortened as they contain excessive detail, information about other stocks, and the repetition of information provided elsewhere.

Table 2: Same comment as for previous stocks.

ALASKA STOCKS

Preface: In the third paragraph a sentence reads: "… this review, and a review of other stocks, led to the revision of the following stock assessments for the 2009 document:" – 2009 should be updated to 2013.

Summary Table: Assuming that the survey interval in the "Survey interval / year of last survey" column is the number of years between the previous survey and 2013, then many of those values are incorrect and should be updated.

Appendices 3-7: These tables present much of the information needed to meet the requirements of section 117(a)(4) of the MMPA, but that information is not up to date. These tables should be updated with the most recent information available.

Steller sea lion – Western US Stock

Other mortality: The number reported for research-related mortality should be updated for 2007-2011 to match the time-span reported for fisheries mortality estimates. At a minimum, this number should be updated to include 2011 data, as has been done for northern fur seals.

Steller sea lion – Eastern US Stocks

Minimum population estimate: Consider renumbering the tables – Tables 3a and 3b are in the western stock SAR but Table 3c is in the Eastern SAR.

Current population trend:. To improve the clarity, edit the legend for figure 4 so that the descriptions of data in "A and B" come before the general statement about "data from Oregon and British Columbia … .".

Fisheries information: Table 5 should be Table 5a because there is a new Table 5b in this year's draft SAR.

Other mortality: Same comment as for the previous stock.

Bearded seal – Alaska Stock

Stock definition and geographic range: Revise Figure 12 to include summer and winter distributions depicted distinctly as is done for other stocks. Seasonal distribution patterns are described in the text so it would be good to illustrate them in the figure as well.

Subsistence/native harvest information: Does the total subsistence harvest number reported include the "struck and lost" number? A statement should be made to that effect, and if "struck and lost" is not included, then NMFS should work with the communities to begin data collection so that an estimate can be generated and incorporated into future SARs.

Ringed seal – Alaska Stock

Minimum population estimate and PBR: Please verify that the N_{min} is not based on data greater than eight years old. The text suggests that surveys conducted in the late 1990's were included in the estimate. Although the provision of N_{min} based on surveys > 8 years old is accepted practice, a PBR should not be calculated from such data. The sentence describing the PBR: "[t]hus, for the Eastern Pacific stock of northern fur seals, PBR = 9,000 animals (300,000 x 0.06 x 0.5)," should be corrected to refer to ringed seals and should be updated to indicate PBR should be undetermined if in fact survey data >8 years old are included in the N_{min} estimate. Also, the summary table should be modified accordingly.

Ribbon seal – Alaska Stock

Subsistence/native harvest information: in the sentence at the end of the second paragraph "ringed" should be replaced with "ribbon".

Killer whales – Eastern North Pacific Alaska Resident Stock

Population size and minimum population estimate: The minimum number of animals is updated in the population size section but NOT in the minimum population estimate section. The text and numbers in the minimum population estimate section should be updated accordingly. The N_{min} number is also cited in the current population trend section so this should be updated too.

Killer whale – Eastern North Pacific Northern Resident Stock

Population size: Add a reference to Table 28 in the text.

Current and maximum net productivity rates: Check the font for consistency in this section.

Killer whale – Gulf of Alaska, Aleutian Island and Bering Sea Transient Stock

Minimum population estimate: In the last sentence of the first paragraph there is a typo - "in" should be "it".

PBR: This section states: "The recovery factor (FR) for this stock is 0.5, the value for cetacean stocks with unknown population status with a mortality rate CV ≥ 0.80 (Wade and Angliss 1997)." Actually, the guidelines in Wade and Angliss 1997 state that for stocks of unknown status, Fr should be 0.5 when the CV of the mortality rate is ≤ 0.3, or 0.4 if the CV is > 0.8. Because the CV listed in the table is 0.02 we assume that Fr = 0.5 is the correct value. The statement and justification in the report needs to be updated.

Killer whale – West Coast Transient Stock

PBR: This section states: "The recovery factor (FR) for this stock is 0.5, the value for cetacean stocks with unknown population status with a mortality rate CV = 0.80 (Wade and Angliss 1997)." Actually, Wade and Angliss recommend setting Fr to 0.4 if the mortality rate CV is > 0.8 and to 0.45 if the CV is 0.6 to 0.8. Regardless, since there is no estimate of mortality, this section needs to be revised.

Harbor porpoise – all stocks

Minimum population estimate: Check the dates in statements such as the following: "… however because the survey data are now <n> years old …." In some SARs the survey data have become at least a year older but "age" of the survey, <n>, has not been updated and is not accurate.

Sperm whale – North Pacific Stock

Stock definition and geographic range: Update the "Ivashchenko et al. in press" citation and reference; it has been published. The legend for figure 31 refers to latitude 62°N, but that line is not shown on the map.

Potential Biological Removal: The language in this section should be updated to be consistent with other stocks: PBR "unknown" should be changed to PBR "undetermined."

Other mortality: If possible, update the strandings information to match the years used in the fisheries HCMSI information – 2007-2011 rather than 2006-2010 as cited in the second paragraph in this section. If possible include information from matching years on the level of "take" by Japanese whalers, as reported to the IWC.

Baird's beaked whale – Alaska Stock

Stock definition and geographic range: The legend for Figure 32 states that sightings are marked on the map with circles and squares, but the only symbols on the map are dashes.

Potential Biological Removal: Language in this section should be updated to be consistent with other stocks: PBR "unknown" should be changed to PBR "undetermined."

Cuvier's beaked whale – Alaska Stock

Stock definition and geographic range: Same comment as for previous stock.

Other mortality: In this section a description of quick ascents from deep dives in response to sound exposure includes a reference to Tyack et al 2011. However, the paper in question described slow ascents from depth in response to the simulated sonar sounds. In addition, the reference "Hooker et al 2011" is missing from the list of citations.

Stejneger's beaked whale – Alaska Stock

Stock definition and geographic range: Same comment as for previous stock.

Humpback whale – Western North Pacific Stock

Fisheries information: The language at the start of this section should be revised and simplified to be consistent with other SARs. For example, the beaked whale SARs contain a simple statement about number of fisheries that were monitored for incidental take. Table 35 should be Table 35a.

Humpback whale – Central North Pacific Stock

Potential Biological Removal: The first paragraph in this section cites guidelines in Taylor et al. 2003 for setting F_r at 0.3, but does not provide a description and justification for the guideline that was applied. Some detail is provided in the second paragraph, but it requires further explanation.

Fisheries information: Same comment as for previous stock.

Other Mortality: Reference should be made explicitly to Tables 37a and b in the first sentence of this section. Delete reference to Table 37b in the next sentence; the numbers in the text do not match those in the table.

Status of stock: Delete the reference to Table 38 at the end of the second sentence in this section, as Table 38 seems to have been deleted from the SAR this year.

Fin whale – Northeast Pacific Stock

Stock definition and geographic range: Define the EBS acronym used in this section. Delete the word "New" at the start of the second to last sentence in this section. The publication cited is now 5 years old.

North Pacific right whale: Eastern North Pacific Stock

Stock definition and geographic range: Delete the word "eastern" in the caption for Figure 42, the shaded area shows the historic distribution over the entire North Pacific. However, replace "northern right whale critical habitat" with "eastern North Pacific right whale critical habitat". Delete "eastern" in the second sentence of the second paragraph as calving grounds have not been identified in the eastern or western North Pacific.

Other mortality: the new information on illegal Soviet catches in the 1960s and the numbers that follow in the text are a little confusing as it is not clear where the total of 1031 comes from. NMFS should revise this section to clarify.

PACIFIC STOCKS

Harbor seal – Oregon/Washington Coast Stock

Fisheries Information: Because all marine mammals that are caught by or in fishing gear, and are seriously injured or killed, are not detected even when fisheries observers are present, estimates of total mortality presented in this section should be qualified to indicate that they are underestimates of the true total serious injury and mortality due to direct fisheries interactions. Further, the stock assessment should include an indication of the magnitude of the bias in these estimates, or an explanation for why the bias cannot be estimated. NOTE: statements to these effects should be included in the stock assessment reports for every stock known or suspected to be directly interacting with fisheries.

Status of Stock: This section states that the estimate of human-caused mortality and serious injury attributed to unknown hook and line fisheries was 0.4 seal per year, but the value reported in the "Fisheries Information" section was 0.6. In addition, this section states that "[t]he stock is within its Optimum Sustainable Population (OSP) level" and provides two supporting references. Given that recovering and maintaining populations at OSP is a primary goal of the MMPA, a summary of the findings of those references should be provided. NOTE: this last comment applies also to the other stock assessment reports of the harbor seal stocks.

Harbor seal – Washington Inland Waters Stocks

Population Size: In the text, it is reported that the mean count of harbor seals surveyed in 1999 was 8,949, however what appears to be the corresponding data point in Figure 2 looks to be much higher than that.

Northern fur seal – California Stock

Population Size: This section reports that total pup count decreased 13.5% from 2010 to 2011, but provides no explanation of the possible causes. Additionally, this section states that the coefficient of variation for the expansion factor used to correct pup counts for all the other individuals in the population is unavailable. Given the importance of the expansion factor in determining the population estimate, determining its accuracy and precision should be a priority and the report should include some explanation of the impact on the stock assessment of not having any information on the reliability of the expansion factor.

Current Population Trend: This section states that "[i]t appears that the [San Miguel Island] population has recovered." Recovered from the extirpation in the 1800s or from the impacts of the 1997-98 El Niño? The statement should be clarified and some explanation should be provided to enable the reader to understand its implications. For example, does it mean the population has reached carrying capacity? That it is at OSP?

Current and Maximum Net Productivity Rates: This section reports that the estimated growth rate of 20% from 1972 to 1982 was certainly contributed to by immigration and, therefore, could not be used as an estimate of R_{max}. This is quite reasonable, but what about that rapid periods of increase from the early 1980s to 1997, and from 1998 to 2010? Was immigration occurring also during those periods? Could the growth rates during those periods inform the value used for R_{max}? Regardless of the answers, some discussion of these points should be included in the report.

Hawaiian monk seal

Current Population Trend: This section describes the decline in population size in the Northwestern Hawaiian Islands as if it was monotonic at 3.4% per year. However, examination of the data points in Figure 1 suggests that the rate of decline was much faster from 2004 to 2008, and much slower, perhaps even near zero, from 2008 to 2011. We suggest that the report contain some discussion and evaluation of the possibility that the rate of decline has changed over time.

Human-caused Mortality and Serious Injury: In this section, the statement that "[t]his second decline … appear[s] to have been driven by … and by human disturbance from military or U.S. Coast Guard activities (Baker et al. 2012 …) was revised by deleting "military or U.S. Coast Guard activities." While Baker et al. (2012) do dismiss the potential impact of military activities, they cite Gilmartin et al. 2011 as supporting the potential impact of Coast Guard activities.

Entanglement in Marine Debris: Some discussion of the risk to monk seals posed by Fukushima debris might be included in this section.

Harbor porpoise – Morro Bay Stock

Current Population Trend: Why has Figure 2 been removed? It should be updated to include the 2102 survey estimate and retained in the report. Why was the finding that the population was increasing deleted? An explanation, beyond simply noting the wide confidence limits on individual estimates, should be provided for why further analyses are required to establish if the population is increasing.

Current and Maximum Net Productivity Rates: This section makes the statement that "[t]his maximum theoretical rate [9.4% per year from Barlow and Boveng 1991] may not be achievable for any real population." As it is not apparent how this conclusion was reached, the report should contain an explanation and justification for the statement. NOTE: this comment applies also to the other harbor porpoise stocks.

Harbor porpoise – Monterey Bay Stock

Population Size: The new survey estimate of 3,715 is more than twice the size of the estimate from the previous survey in 2007 (1,492). This is a remarkable change, but no explanation is provided or discussion given to factors, whether ecological or methodological, that might have contributed to the large jump.

Current Population Trend: Although the confidence limits on the survey estimates are large, it is important to include the trend information and Figure 2 (without the trend line) in the stock assessment report. NOTE: this comment applies also to the other harbor porpoise stocks.

Killer whale – Eastern North Pacific Southern Resident Stock

Current and Maximum Net Productivity Rates: This section sites a recent study (Ward 2012) that found a 1% probability that Rmax exceeds 3.2% as justification for setting Rmax at this value. However, because the cited reference is not published or available on line to check, it is not obvious that this logic is consistent with the guidelines in Wade and Angliss 1997, which included the recommendation that default values for Rmax be "near the lower range of measured or theoretical values."

Potential Biological Removal: When PBR is less than or equal to 0.5, it would be helpful, from a communications perspective, to also express the value in "years per single removal", as is done in the North Pacific Right Whale stock assessment report. In this case, a PBR of 0.14 whale per year is equivalent to a removal rate of one whale every 7.1 years. NOTE: this suggestion applies to all relevant stocks.

Fisheries Information: NOTE: the second paragraph – "An additional source … been reported." – is text that should be included in every stock assessment report. Further, we suggest amending the text (new text in bold) to read "by the MMPA**, whether or not a NOAA fisheries observer is on board**."

Blue whale – Eastern North Pacific Stock

Ship Strikes: This section reports that four serious injuries of large whales were attributed to unidentified large whales. We suggest that the report discuss why these serious injuries were not geographically allotted or prorated to each of the large whale stocks in proportion to their regional abundances, as is done in the Hawaii pilot whale stock assessment reports. Also, in this section two references, "Perrin et al. 2011" and "Prado et al. 2010", are cited but they do not appear in the list of citations. NOTE: the comment regarding prorating applies to the stock assessment reports of the other large whale stocks.

Fin whale – Eastern North Pacific Stock

Current Population Trend: We suggest that this section include Figure 4 from Moore and Barlow 2011.

Current and Maximum Net Productivity Rates: This section should include a statement that the default Rmax will be used.

Rough-toothed dolphin – Hawaii Stock

Stock Definition and Geographic Range: This section states that rough-toothed dolphins were seen "frequently" offshore during the last two surveys. However, Figure 1 suggests that there were fewer than 15 sightings, which might be more accurately described as 'occasional', and that inshore sightings were more common than offshore sightings. In addition, the first paragraph of this section contains a sentence addressing strandings. It is not clear why stranding information is included in the section on stock definition and range. Perhaps the intent is that stranding locations provide some information about distribution, but they may say more about the distribution of threats than the distribution of the stock. Moreover, most stocks have far more informative survey data that can be used to describe their distributions. However, there are exceptions such as Longman's beaked whale. We suggest that stranding information be moved to the "Human-caused Mortality and Serious Injury" section of the report, which is where the other regions put such information, unless it is significantly informative with respect to distribution. NOTE: this comment applies to many of the other Hawaiian stock assessment reports.

Cuvier's beaked whale – Hawaii Stock

Current Population Trend: The "Population Size" section reports a population estimate of 15,242 from a 2002 survey and an estimate of just 1,941 from the 2010 survey. In the "Trend" section, the large difference between the two estimates is ascribed to methodological differences. While this may be the full explanation, we suggest that the report include a discussion of whether the decrease could be at least partially due to an actual population decline, especially in light of a contemporaneous decline in population size observed in the California/Oregon/Washington stock of this species.

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