20 September 2017

Mr. Patrick Lemons
Chief, Marine Mammals Management Office
U.S. Fish and Wildlife Service
1011 East Tudor Road
Anchorage, AK 99503

Dear Mr. Lemons:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals and in response to the request for comments published on 22 June 2017 (82 Fed. Reg. 28526), has reviewed the 2017 draft stock assessment reports (SARs) for the Southern Beaufort Sea (SBS) and the Chukchi/Bering Sea (CBS) stocks of polar bears. We offer the following comments and recommendations.

For the most part, these reports are well written, satisfy the requirements of the Marine Mammal Protection Act (MMPA), and provide the best available information on the status and trends of the two polar bear stocks that occur in the United States. The Commission therefore recommends that, subject to revisions that address the comments and recommendations provided below, FWS adopt the draft SARS as final reports.

Stock Assessment Updates

Because the polar bear is listed as threatened under the Endangered Species Act (ESA), all stocks are considered strategic under section 3(19) of the MMPA. Section 117(c)(1)(A) of the MMPA requires that "[t]he Secretary [of the Interior, whose responsibility has been delegated to the Fish and Wildlife Service (FWS)] shall review stock assessments…at least annually for…strategic stocks." As indicated in the *Federal Register* notice, the polar bear SARs were last updated by FWS in 2010. FWS reviewed the SARs in 2011, 2012, and 2013 and determined that available information did not warrant any revisions. FWS notes that in 2014 it began revising the SARs and obtained advice from the Alaska Scientific Review Group (SRG). It should not take three years to update SARs and FWS needs to adhere more closely to the required statutory time frames for reviewing and updating reports. Among other things, by delaying publication of new information for so long, FWS runs the risk that the advice provided by the SRG will become outdated before it is reflected in the SARs or made available for public review.

As discussed in the draft SAR for the CBS stock, the National Oceanic and Atmospheric Administration, FWS, and Russian researchers conducted an aerial survey to estimate abundance of polar bears and ice seals in the Chukchi Sea in 2016. Results are expected to be available in 2018. In addition, FWS has been conducting studies of habitat use, ecology, and population status of polar bears in the Chukchi Sea that are directed at reducing uncertainty in our knowledge about the status and trends of the CBS population. Those studies also could provide new insights into delineating the

boundary between the CBS and SBS stocks. Preliminary results from those studies are expected within the next year. Because new and relevant information is expected to become available within the next annual review cycle of the polar bear SARs, the Commission recommends that FWS make a concerted effort to revise and make available for public review, updated draft reports for both stocks of polar bears in 2018.

Minimum Abundance Estimate

The discussion of population size in the draft SAR for the CBS stock provides the relevant information concerning abundance estimates for this stock. Among other things, FWS notes that the IUCN Polar Bear Specialist Group (PBSG) concluded in 2009 that, because of the lack of recent population data, the size of the CBS stock should be considered as "unknown." However, FWS relies on the findings of the PBSG from 2006 (Aars et al. 2006) as the best available information and as the basis for the minimum population estimate of 2,000 animals. If the PBSG no longer thinks that that information is reliable enough to form the basis of a population estimate, FWS should not rely on that source when estimating minimum population size.

In addition, using such outdated information runs counter to the guidance provided in the updated Guidelines for Preparing Stock Assessment Reports published by the National Marine Fisheries Service (NMFS) in 2016. Those guidelines specify that "unless compelling evidence indicates that a stock has not declined since the last census, the N_{min} estimate of the stock should be considered unknown if 8 years have transpired since the last abundance survey." The Commission recommends that FWS revise the SAR for the CBS stock to conform to that guidance by indicating that the minimum population size is unknown. If FWS retains 2,000 bears as the estimate of minimum population size in the final report, the Commission recommends that the agency include compelling evidence that the stock has not declined since the last survey.[1] In addition, as explained in the guidelines, a minimum population estimate should be calculated to provide assurance that "a stock of unknown status would achieve and be maintained within OSP with 95% probability." Consistent with that guidance, FWS should include an analysis of how its point estimate of 2,000 bears (which, in any event, appears to be an estimate of N_{best} rather than N_{min}) satisfies this directive and meets the requirement under section 3(27) of the MMPA that the minimum population estimate provide reasonable assurance that "the stock size is equal to or greater than the estimate."

The Commission also notes that the most recent abundance estimate for SBS polar bears is based on data collected through 2010 (Bromaghin et al. 2015). Therefore, a new abundance estimate is needed within the next year for this stock as well. Otherwise, the SBS abundance estimate will also be outdated and, unless updated, should be given as "unknown" in the next SAR. The Commission notes that the U.S. Geological Survey has collected population data on SBS bears through at least 2015 and recommends that those data be analyzed and presented as soon as possible.

[1] We note that the estimate from Aars et al. (2006) was not based on a recent survey and that 2006 would not be the appropriate starting point for a trend analysis used as part of the compelling evidence.

Potential Biological Removal (PBR)

The PBR calculated for the CBS stock of polar bears is based on an outdated and thus "unknown" minimum population abundance estimate. The Commission therefore recommends that FWS indicate in the SAR for the CBS stock that PBR is "undetermined" and that it will continue to be specified as undetermined until a reliable minimum population estimate is available.

Stock Delineation and Distribution

The draft SARs explains that there is an "extensive area of overlap" between the SBS and the CBS stocks. This is reflected graphically in figure 2 of each report. Despite minimal genetic differences, the draft SARs provides other reasons for considering these to be separate stocks. The Commission concurs with FWS that, pending additional research, there is sufficient justification to treat the SBS and CBS polar bears as separate stocks.

As noted in the draft SARs, most of the cited genetics studies have looked broadly at polar bears throughout their range. The one study that looked more closely at the differentiation between CBS and SBS polar bears (Paetkau et al. 1999) found low, but significant differences between the two stocks. Because of low sample sizes and equivocal results, a more thorough study of the genetic structure of CBS and SBS polar bears would be useful. The Commission therefore recommends that FWS and its research partners undertake a more extensive, finer scale analysis of genetic differences between the CBS and SBS stocks to delineate further the extent of stock discreteness.

The draft SAR for the SBS stock does not show overlap with the northern Beaufort Sea (NBS) stock of polar bears. Assuming that the boundaries between SBS and NBS bears are similar to those between SBS and CBS bears, it seems likely that there is some overlap. FWS should provide some information on the map (figure 2) indicating whether overlap exists between the two stocks and showing its likely extent. The SAR explains that information is available that may warrant shifting the eastern SBS stock boundary further west, but notes that changes to the SAR will not be made until that information has been reviewed and accepted by the PBSG. It is unclear, however, when the PBSG, which since 2012 has met every other year, will take up this issue. Section 117(a) of the MMPA requires that SARs, including the description of the stock's geographic range, be based on the best scientific information available. The Commission recommends that FWS use the best available information when describing the range of the SBS stock regardless of whether or not it has been accepted by the PBSG.

Questions also exist about where the boundaries between the CBS and SBS stocks should be drawn. In particular, the stock boundaries established under the U.S.-Russia bilateral Agreement differ from those used by the PBSG. However, this issue is omitted completely in the draft SARs for the CBS and SBS polar bears, except to note that the harvest numbers reported in figure 3 correspond to the eastern boundary at Icy Cape used by the PBSG. Because selecting one boundary or the other has major implications for the SARs, the Commission recommends that the sections on the distribution of the CBS and SBS stocks of polar bears be expanded to discuss the uncertainty over where to draw the stock boundaries between them and the efforts that are being taken to resolve these questions.

Reporting of Harvest Data

Figure 3 in each draft SAR presents data on subsistence harvests in the United States from the relevant stock. Given the sources and questionable reliability of harvest data from Russia, it is understandable why those data are not included in the figure in the CBS SAR. However, harvest reports from Canada are considered quite accurate and the Commission recommends that they be included in the figure in the SAR for the SBS stock. Each SAR is supposed to estimate, by source, the annual human-caused mortality and serious injury for the stock. As long as removals are from the same stock, it should not matter whether they occurred in the United States or Canada.

Given the uncertainty over where to draw the boundaries of the CBS stock, harvest data should not be reported in a way that excludes removals that are more likely than not to be from this stock. That is what FWS has done by using Icy Cape as the eastern boundary. Amstrup et al. (2005) found that bears west of Point Barrow are more likely to be from the CBS than the SBS stock. The Commission therefore recommends that figures 3 in the two SARs be revised to include alternative harvest estimates using Icy Cape as one possible stock boundary and Point Barrow as the other.

Specific Comments

- In the "genetics" sections of the two SARs, FWS includes the following statement — "While genetically similar, demographic movement data indicate a degree of site fidelity, suggesting that the stocks may be managed separately." Given the separate management programs for these two stocks that currently exist, a stronger statement is appropriate. We suggest that the sentence be revised to read — "… supporting our decision to manage these stocks separately."
- In the "current population trend" sections of the two SARs, FWS states that the stocks are believed to have existed prior to the 20th century at or near their environmental carrying capacity, because harvesting during that period was largely limited to takes by Alaska Natives for subsistence. It is the level of removals, not the purpose behind them, which is important. Thus, FWS should revise the text to indicate why it believes that the removals for subsistence during that period were at a low enough level to allow the populations to remain at or near carrying capacity. This section of the draft SBS SAR notes that the bear population increased due to the elimination of sport hunting in Alaska following the enactment of the MMPA. FWS cites five sources as evidence of a population increase. These include observations by residents of coastal Alaska and Russia and reports from Russian scientists. Inasmuch as the SBS stock does not range as far west as Russia, reports from Russian coastal residents and Russian scientists are not relevant sources for this population.
- The discussion of the U.S.-Russia bilateral Agreement in the "Native subsistence harvest" section of the draft CBS SAR addresses the harvest limits adopted by the parties to the Agreement and notes that those limits constitute "federally enforceable polar bear harvest limits when such harvest levels had been previously unregulated under U.S. law." The presentation creates the impression that these limits have been in force since being originally

adopted in 2010. FWS should revise this section to clarify that these limits have yet to be implemented by the United States pending the establishment of needed management (e.g., a new polar bear co-management organization) and enforcement structures, which are now expected to be in place by 2020.

- The discussion of harvest in Russia is included in the section on "other mortality" in the draft CBS SAR, because it is considered illegal. However, according to Kochnev and Zdor (2014) most, if not all, of that harvest is for subsistence purposes.[2] If this is the case, it would make more sense to move that discussion into the section on Native subsistence harvest. Also, rather than relying on a personal communication from Eduard Zdor as one of the sources for the information, FWS should cite the related publication, Kochnev and Zdor (2014), which is included in the "citations" section as Kochnev and Zdor (2015).
- The "climate change" section of each report discusses the listing of ringed and bearded seals by NMFS under the ESA. FWS notes that a district court ruling vacating the bearded seal listing was overturned on appeal, so that the listing is again in force. FWS should also note that the appeal of the ruling vacating the ringed seal listing is still pending.

I hope these comments and recommendations are helpful. Please contact me if you have questions.

Sincerely,

Rebecca J. Lent, Ph.D.,
Executive Director

References

Aars, J., N.J. Lund, and A.E. Derocher (eds.) 2006. Polar bears: Proceedings of the 14th working meeting of the IUCN/SSC Polar Bear Specialist Group, 20-24 June, Seattle, Washington, USA, IUCN, Gland, Switzerland. 189 pp.

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[2] Although Kochnev and Zdor note that some skins of polar bears taken for subsistence may subsequently be sold. In contrast, some news reports suggest that at least some poaching is directed at obtaining skins for sale in international markets (see e.g., https://www.upi.com/Poaching-threatens-Russian-polar-bears/32241363990554/).

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