



## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

[FWS-R7-ES-2018-N051; FXES111607MPB01-189-FF07CAMM00]

### Marine Mammal Protection Act; Stock Assessment Reports for Two Stocks of Polar Bears

**AGENCY:** Fish and Wildlife Service, Interior.

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

**SUMMARY:** In accordance with the Marine Mammal Protection Act of 1972, as amended, we, the U.S. Fish and Wildlife Service, after consideration of comments received from the public, have revised marine mammal stock assessment reports for each of the two polar bear stocks in Alaska. We now make the final revised stock assessment reports for the Southern Beaufort Sea polar bear stock and the Chukchi/Bering Seas polar bear stock available to the public.

**ADDRESSES:** *Document Availability:* You may obtain a copy of the Southern Beaufort Sea polar bear and Chukchi/Bering Seas polar bear stock assessment reports by any one of the following methods:

- Internet: <https://www.fws.gov/alaska/pages/marine-mammals/polar-bear> (for both polar bear stocks).
- Write to or call (during normal business hours from 8 a.m. to 4:30 p.m., Monday through Friday) Dr. Patrick Lemons, Chief, U.S. Fish and Wildlife Service, Marine Mammals Management Office, 1011 East Tudor Road, MS-341 Anchorage, Alaska 99503; telephone: (800) 362-5148.

**FOR FURTHER INFORMATION CONTACT:** Dr. Patrick Lemons, Marine Mammals Management Office by telephone (800) 362-5148 or by email

([fw7mmmcomment@fws.gov](mailto:fw7mmmcomment@fws.gov)). Persons who use a telecommunications device for the deaf

(TDD) may call the Federal Relay Service at (800) 877-8339.

**SUPPLEMENTARY INFORMATION:** We announce the availability of the final revised stock assessment reports (SARs) for two stocks of polar bears (*Ursus maritimus*).

### **Background**

Under the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1361 et seq.) and its implementing regulations in the Code of Federal Regulations (CFR) at 50 CFR part 18, the U.S. Fish and Wildlife Service (Service) regulates the taking; import; and, under certain conditions, possession; transportation; purchasing; selling; and offering for sale, purchase, or export, of marine mammals. One of the goals of the MMPA is to ensure that stocks of marine mammals occurring in waters under U.S. jurisdiction do not experience a level of human-caused mortality and serious injury that is likely to cause the stock to be reduced below its *optimum sustainable population level* (OSP). The OSP is defined under the MMPA as “the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element” (16 U.S.C. 1362(9)).

To help accomplish the goal of maintaining marine mammal stocks at their OSPs, section 117 of the MMPA requires the Service and the National Marine Fisheries Service (NMFS) to prepare a SAR for each marine mammal stock that occurs in waters under U.S. jurisdiction. A SAR must be based on the best scientific information available; therefore, we prepare it in consultation with an independent Scientific Review Group (SRG) established under section 117(d) of the MMPA. Each SAR must include:

1. A description of the stock and its geographic range;
2. A minimum population estimate, current and maximum net productivity rate, and current population trend;
3. An estimate of the annual human-caused mortality and serious injury by source

and, for a strategic stock, other factors that may be causing a decline or impeding recovery of the stock;

4. A description of commercial fishery interactions;
5. A categorization of the status of the stock; and
6. An estimate of the *potential biological removal* (PBR) level.

The MMPA defines the PBR as “the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its OSP” (16 U.S.C. 1362(20)). The PBR is the product of the minimum population estimate of the stock ( $N_{\min}$ ); one-half the maximum theoretical or estimated net productivity rate of the stock at a small population size ( $R_{\max}$ ); and a recovery factor ( $F_r$ ) of between 0.1 and 1.0, which is intended to compensate for uncertainty and unknown estimation errors. This can be written as:

$$\text{PBR} = (N_{\min})(\frac{1}{2} \text{ of the } R_{\max})(F_r).$$

Section 117 of the MMPA also requires the Service and the NMFS to review the SARs (a) at least annually for stocks that are specified as strategic stocks, (b) at least annually for stocks for which significant new information is available, and (c) at least once every 3 years for all other stocks. If our review of the status of a stock indicates that it has changed or may be more accurately determined, then the SAR must be revised accordingly.

A *strategic stock* is defined in the MMPA as a marine mammal stock “(A) for which the level of direct human-caused mortality exceeds the PBR level; (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 of 1973, [as amended] (16 U.S.C. 1531 et seq.) [ESA ], within the foreseeable future; or (C) which is listed as a threatened or endangered species under the ESA, or is designated as depleted under the MMPA” (16 U.S.C. 1362(19)).

## Stock Assessment Report History for the Two Polar Bear Stocks

Both polar bear SARs were last revised in January 2010. Because the polar bear is listed as a threatened species under the ESA, both the Southern Beaufort Sea and the Chukchi/Bering Seas polar bear stocks are considered strategic. The Service therefore considered all available new information on these stocks in 2011, 2012, and 2013, and determined that no new information was available that indicated the status of the stocks had changed or could be more accurately determined. However, as new information became available in 2014, the Service initiated revision of the SARs, and once completed, presented them for review to the SRG. Subsequent to that review, the Service published a notice in the *Federal Register* informing the public of the availability of these draft revised SARs and seeking public comment (82 FR 28526; June 22, 2017). These final revised SARs incorporate the comments and suggestions provided to the Service by the SRG and the public, as appropriate.

### Summary of Revised Stock Assessment Reports for the Two Polar Bear Stocks in Alaska

The following table summarizes some of the information contained in the revised SARs for the Southern Beaufort Sea polar bear and the Chukchi/Bering Seas polar bear stocks, which includes each stock's  $N_{\min}$ ,  $R_{\max}$ ,  $F_r$ , PBR, annual estimated human-caused mortality and serious injury, and status.

#### SUMMARY—FINAL REVISED STOCK ASSESSMENT REPORTS FOR THE SOUTHERN BEAUFORT SEA POLAR BEAR AND CHUKCHI/BERING SEAS POLAR BEAR STOCKS

| Polar Bear Stock      | $N_{\min}$ | $R_{\max}$ | $F_r$ | PBR | Annual estimated human-caused mortality and serious injury         | Stock status |
|-----------------------|------------|------------|-------|-----|--|--------------|
| Southern Beaufort Sea | 782        | 0.075      | 0.5   | 14  | Annual estimated removals for each stock are provided in the SARs. | Strategic    |
| Chukchi/Bering        | 2,000      | 0.0603     | 0.5   | 30  |  | Strategic    |

|      |  |  |  |  |  |  |
|------|--|--|--|--|--|--|
| Seas |  |  |  |  |  |  |
|------|--|--|--|--|--|--|

## **Response to Public Comments**

We received comments on the draft revised SARs from the Marine Mammal Commission (Commission), Department of Wildlife Management, North Slope Borough, Utqiagvik, Alaska, BP Exploration (Alaska), Inc., and the Center for Biological Diversity. We present substantive issues raised in those comments that are pertinent to the SARs, edited for brevity, along with our responses below.

### General Public Comments That Apply to Both SARs

1. The Service should undertake a more extensive, finer scale analysis of genetic differences between the Chukchi/Bearing Seas (CBS) and Southern Beaufort Sea (SBS) stocks to delineate further the extent of stock discreteness.

*Response:* Genetic differentiation between the two stocks is one metric to consider, but we believe sufficient data exist from other metrics (behavioral, movement, demographic) to support the current differentiation of the stocks. We will continue to review new information as it becomes available and reassess their discreteness. Additionally, the genetic work that has been done (and is cited in the current SARs) suggests that there is little genetic variation between the two stocks.

2. The section on the distribution of the CBS and SBS stocks of polar bears should 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.

*Response:* Although the MMPA does not require the Service to describe stock boundaries but rather stock ranges, we added text to both documents indicating there is uncertainty associated with the current boundary.

3. Figure 3 in both SARs should be revised to include alternative harvest estimates using Icy Cape as one possible stock boundary and Point Barrow as the other given the uncertainty over where to draw the boundary between the CBS and SBS stocks.

*Response:* For the purposes of these SARs, the Service continues to accept the boundaries identified by the Polar Bear Specialist Group (PBSG). Should new information become available to better define these boundaries in the future, we will revise the SARs to reflect that new information.

4. The Service should revise the genetics section of both SARs to include a stronger statement about the role genetics plays in the Service's decision to manage stocks separately.

*Response:* Although the statute does not require a discussion of genetics in the SARs, we included information on research that shows the stocks appear to be genetically similar. However, we explicitly state that other factors (e.g., behavior) warrant the stocks being managed separately. The Service has determined that a stronger statement is not necessary.

5. In the 'current population trend' sections of both SARs the Service should explain why it has determined removals for subsistence during the 20<sup>th</sup> century were low enough to allow the populations to remain near carrying capacity.

*Response:* The SARs do not state that subsistence during the 20<sup>th</sup> century was low enough to allow populations to remain near carrying capacity. Rather, it states that this is our belief for the period **prior** to the 20<sup>th</sup> century when subsistence harvest would have been the primary source of anthropogenic mortality.

6. The “climate change” section of each report discusses the listing of ringed and bearded seals by the NMFS under the ESA. The Service notes that a district court ruling vacating the bearded seal listing was overturned on appeal, so that the listing is again in force. The Service should also note that the appeal of the ruling vacating the ringed seal listing is still pending.

*Response:* The U.S. Supreme Court denied the petition for review of the decision and, therefore, the listings stand. We have removed these statements from the SARs.

7. The Service should improve its review of the status of the stocks on an annual basis.

*Response:* SARs are thoroughly vetted and accurately reflect the best scientific information available. The Service meets its statutory requirements of reviewing both polar bear stock assessments on an annual basis and, if appropriate, revises the current SARs. The Service then submits these draft revisions first to the SRG, noting to the SRG that they are preliminary documents pending complete Service review, and then for public comment. The Service also updates the SRG on any new information and ongoing studies during the SRG’s annual meeting. We appreciate the concern over the time it takes for both of these reviews but balance that concern with the need to ensure our SARs contain the best available scientific information and are subject to public notice and comment process.

8. The SARs must clearly state that anthropogenic climate change is the primary threat to the SBS and CBS stocks and must include key scientific findings documenting the negative effects that climate change is having on these populations.

*Response:* There are currently no studies that show negative population-level impacts of sea ice loss for polar bears in the CBS stock. However, there are behavioral and distributional changes occurring as a result of sea ice loss, and we currently cite those studies that show such effects to the CBS stock (e.g., Rode et al. 2015a, Wilson et al. 2016). We also document studies that show the negative population-level effects that the SBS stock are experiencing as a result of sea ice loss. We have added a citation to Atwood et al. (2016) to further clarify that climate change has been identified as the primary threat to polar bears.

9. The Service should emphasize that bears in both populations are spending less time in their preferred shallow water sea-ice habitats as these habitats diminish and more time in marginal habitats on shore and on sea ice off the continental shelf. The following studies should be cited: Gleason and Rode (2009), Cherry et al. (2013), and Ware et al. (2017).

*Response:* We added a reference to the Gleason and Rode (2009) study to make this point for the SBS SAR. The Ware et. al., study (2017) does not provide information that significantly changes our understanding of how bears' use of sea ice changes as it relates to sea ice loss, nor does it provide information that indicates the status of the species has changed or can be more accurately determined. The study by Cherry et al. (2013) is in reference to bears in Hudson Bay, so is not relevant for these SARs. We also cite Rode et al. (2015) in the CBS SAR to document increased land use by those bears, and Wilson et al. (2016) to highlight the reduction in 'optimal' summer sea ice habitat in the Chukchi Sea.

10. The Service should include new findings that provide further evidence for an increase in land-based denning in response to climate change: Olson et al. (2017).



*Response:* The study by Olson et al. (2017) does not include information that substantially alters our understanding of increased land-based use, which is confirmed in Fishbach et al. (2007). Nor does it provide information that indicates the status of the species has changed or can be more accurately determined.

11. In describing the different responses of the CBS and SBS stocks to sea ice loss, the SAR should report the findings of Ware et al. (2017).

*Response:* As stated previously, the study by Ware et al. (2017) does not provide information that substantially alters our understanding of either population's status nor does it provide information that indicates the status of the species has changed or can be more accurately determined. The study by Ware et al. (2017) confirms our understanding of the different responses of the two stocks, information that is already discussed in the SAR.

12. The Service should include the following citations for increasing energetic costs associated with sea ice changes: Durner et al. (2017), Ware et al. (2017).

*Response:* As stated previously, these studies do not provide information that substantially alters our understanding of either population's status and do not provide information that indicates the status of the species has changed or can be more accurately determined. Further, these studies indicating energetic costs associated with sea ice loss confirm information already considered in this SAR.

13. The Service should clearly and finally delineate the CBS/SBS boundary line.

*Response:* We do not believe the SARs are the appropriate document in which to discuss delineation of the boundary line between these two stocks. We

have described the geographic range of these stocks as required by the MMPA.

14. The SARs must include important new information on the threats from oil and gas development including the April 2017 Executive Order attempting to lift the permanent ban on offshore drilling in the U.S. Arctic, and the Bureau of Ocean Energy Management proposal to approve the offshore Liberty drilling project in SBS polar bear habitat.

*Response:* On January 20, 2021, the President issued Executive Order 13990, which, amongst other things, revoked Executive Order 13795. Considering this action, the Service believes the SARs adequately address any potential threats from oil and gas development.

15. The SARs should acknowledge there are currently no effective means of cleaning up an oil spill in Arctic waters.

*Response:* Section 117(a)(3) requires the agency provide information on other factors that may cause a decline or impede recovery of a strategic stock. An oil spill in the Arctic could have negative impacts on these stocks, particularly if there are no (or limited) means of cleaning the spill. Therefore, we have included a statement to this effect in the revised documents.

16. The Service needs to categorize each stock's status relative to OSP.

*Response:* Section 117(a) states the draft SAR shall categorize the status of the stock as one that either has a level of human-caused mortality and serious injury that is not likely to cause the stock to be reduced below its OSP or is a strategic stock. The Service has categorized the status of each stock as strategic.

17. The SARs must acknowledge that harvest of both populations exceeds PBR and may cause the stocks to be reduced below their optimal sustainable population, which is prohibited by the MMPA.

*Response:* In meeting our statutory requirements under the MMPA Section 117, this stock assessment report contains an estimate of the potential biological removal level, describing the information used to calculate the estimate. We have determined that the SARs adequately describe the scope and extent of polar bear harvest in both stocks as presented.

18. The SARs should include and discuss studies that forecast the likely extirpation of both polar bear stocks within this century: Amstrup et al. (2010), Atwood et al. (2016), Regehr et al. (2016).

*Response:* We have further reviewed these studies and note they conclude the stocks have a high probability of becoming greatly reduced. Section 117(a)(3) requires the agency provide information on other factors that may impede recovery of a strategic stock and, therefore, we added this point to the climate change section of each SAR.

19. Speculation on the long-term status of each polar bear stock should be organized within a discrete section that is appropriately described as such.

*Response:* We believe this information is appropriately contained within their current sections and that sufficient information is provided to allow readers to assess the level of confidence in the currently available science.

20. The Service has provided inconsistent messages about the boundaries of both the CBS and SBS polar bears, which makes it difficult for subsistence hunters, subsistence communities, the public, and decisionmakers to adequately

understand polar bear biology or management or the position of the Service.

Clarity is needed on both boundaries.

*Response:* Section 117 requires that the agency describe the geographic range of the subject stocks, including any seasonal or temporal variations but it does not require a delineation of boundaries. These SARs are based on the geographic ranges as described in each document. While work is currently being conducted to update the biology associated with the geographic range of the CBS and SBS stocks, the description provided in these documents reflects the best available science for each stock.

21. Each SAR should be clear about the factors associated with uncertainty in determining whether the polar bears in each region constitute a stock. Further, the Service should also describe in detail the implications (e.g., conservation, subsistence) of the current uncertainty and inconsistencies in stock boundary determination.

*Response:* We have explicitly provided the factors that identify these stocks as being considered and managed separately. These two stocks are spatially segregated and each stock is made up of a group occurring “in a common spatial arrangement,” per the statutory definition. This separation is further supported by the different patterns in body condition and responses to sea ice loss. Although we acknowledge there is some confusion concerning the established boundaries between these stocks, we do not believe the SARs are the appropriate document in which to discuss issues associated with these uncertainties.

22. The Service’s information on contaminants is incomplete for both stocks and does not include more recent papers. Relevant missing literature includes: Dietz et al.

(2015); Letcher et al. 2011 (conference abstract); McKinney et al. (2011a, b); Nuijten et al. (2016); and Routti et al. (2011). SARs should be updated to include the above references.

*Response:* We included additional information as appropriate in each SAR.

23. More detail should be provided about which Traditional Ecological Knowledge stakeholders were consulted and how that information was used to inform SARs.

*Response:* We added reference to the Voorhees et al. (2014) study in the CBS SAR and the Joint Secretariat study (2015) in the SBS SAR.

24. The Service should clarify what is meant by ‘relatively discrete subpopulations’ on page 1 of both SARs.

*Response:* We removed the term “relatively discrete” as it does not add to the statement that there are 19 subpopulations.

25. Contaminant samples were not collected in a random or systematic manner. The Service should explain how contaminant data are indicative of stock status versus a sampling artifact or a difference in prey species having different contaminant burdens and provide evidence on how samples were collected.

*Response:* The studies cited found that contaminants vary between bears in the two stocks, providing evidence of spatial segregation or differences in space use between them.

26. The Service should provide evidence of why CBS and SBS stocks should be separated given the weak genetic and movement data (i.e., overlap in distribution of tagged bears).

*Response:* We disagree that there are weak movement data. In the 10+ years that the Service has been conducting polar bear capture work in the Chukchi

Sea, only twice have bears been recaptured in the Chukchi Sea that were previously captured in the Beaufort Sea. Similarly, we are unaware of any bears captured in the Chukchi Sea being recaptured in the Beaufort Sea. Movement data from Global Positioning System (GPS) collars clearly shows bears captured in the Chukchi Sea move to the northwest and away from the Beaufort Sea as the ice retreats, with many summering on the Russian coast and none ever summering on the northern coast of Alaska. Conversely, polar bear movements of those captured in the Beaufort Sea show bears moving north and northeast as the ice retreats. Those bears that summer on shore do so primarily near Kaktovik, Alaska, and not the Russian coast. In addition to movement data, numerous studies have shown significant differences in how bears in the two stocks are responding to sea ice loss, with bears in the Beaufort Sea experiencing population declines, lower body conditions, and reduced reproductive performance than bears in the Chukchi Sea.

27. More details are needed about how the location of tagged bears in the Chukchi and Beaufort Seas might influence the representativeness of tagged bears to the entire population.

*Response:* We added additional information stating that it's unclear what role capture location plays in our estimate of the stock's distribution, but that bears captured south of Point Hope overlap the space use patterns of bears that were captured more widely in the early 1990s.

28. On page 5 (SBS SAR) and page 6 (CBS SAR) similar sentences are present that state "polar bears are generally expected to experience nutritional stress as loss of sea ice continues..." How is this relevant to defining the stocks? Even if relevant, both stocks respond similarly, thereby contradicting the supposition that

these are stocks. The paragraph with these statements is not relevant to stock definition or geographic range and should therefore be removed from this section.

*Response:* We disagree. The statutory definition of a “population stock” or “stock” includes a group of marine mammals of the same species occurring “in a common spatial arrangement,” such as these two polar bears stocks. The information is relevant to describing these two stocks because, even though bears may respond similarly to changing sea ice conditions, it shows that they are spatially segregated. If there was no spatial segregation, then we would expect to see similar patterns in body condition and response to sea ice loss between the stocks. However, the opposite is true. We therefore believe information in these paragraphs remains relevant and important to report.

#### Comments Specific to the Chukchi/Bering Seas Stock Assessment

29. The Service should revise the SAR for the CBS stock to conform to that guidance [Guidelines for Preparing Stock Assessment Reports published by the National Marine Fisheries Service (NMFS) in 2016] by indicating that the minimum population size is unknown. If the Service retains 2,000 bears as the estimate of minimum population size in the final report, the agency should include compelling evidence that the stock has not declined since the last survey. 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, the Service 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.”

*Response:* The Service appreciates and supports the efforts of the NMFS in developing their Office of Protected Species Technical Memorandum and the 2016 Guidelines for Preparing Stock Assessment Reports. However, these NMFS guidelines have not been adopted by the Service, and, while we consider the information contained within them to the extent applicable, they are not binding on the Service. Nonetheless, as discussed in the SAR, the Service considers a minimum population estimate of 2,000 individuals (Aars et al. 2006) to be the best available scientific information we have at this time. In addition, recent studies have indicated that bears inhabiting the Chukchi Sea seem to be in good physical condition and may be experiencing population growth (Voorhees et al. 2014; Rode et al. 2014). Therefore, we are reasonably assured that the CBS stock includes at least 2,000 bears.

30. Revise the section that discusses the U.S.–Russia Bilateral Agreement to state that harvest limits set under the Agreement have yet to be implemented by the United States pending the establishment of needed management and enforcement structures.

*Response:* We do not believe the comment accurately describes Service actions under the U.S. -Russia Bilateral Agreement. Although we do not believe the SAR is the appropriate document in which to discuss implementation of the harvest limits under the U.S.-Russia Bilateral Agreement, we have provided updates to the SAR to reflect recent actions by the Commission and the Service.



31. 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. 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, the Service should cite the related publication, Kochnev and Zdor (2014), which is included in the “citations” section as Kochnev and Zdor (2015).

*Response:* We included the citation of Kochnev and Zdor (2015) instead of the personal communications statement. However, we kept this information in the “other mortality” section because it is still unreported harvest and unclear how much is for subsistence or possibly other purposes.

32. The Service should report total harvest mortality for the CBS stock, including both the United States and Russia. Thus report 32 bears as the best estimate of direct harvest in Russia.

*Response:* We agree and added text to the final SAR to reflect this information.

33. The SAR should cite the following studies suggesting low cub production and reduced maternity denning: Ovsyanikov (2012), Ovsyanikov and Menyushina (2014).

*Response:* We do cite Ovsyanikov (2012), which sufficiently makes the identified points.

34. The CBS population estimate should be listed as ‘unknown’ given that it is more than 8 years old, and PBR should be listed as ‘undetermined’ as PBR cannot be calculated with an unknown minimum population size.

*Response:* The population estimate of 2,000 is based on extrapolated den data, which we acknowledge is more than 10 years old. It was the best scientific information available for these calculations. The Service has been analyzing data on this stock, and we will revise our SARs, subsequent to that analysis, if appropriate.

35. On page 9, in the last paragraph, the Service should insert ‘in Russia’ after ‘illegal harvests’

*Response:* We have made this change.

36. On page 10, in the top paragraph: Why is the information in Kochnev and Zdor (2015) not presented given that it represents the best available information?

*Response:* This section discusses the historic views on overharvest in the early 2000s; therefore, the study by Kochnev and Zdor is not relevant. We do, however, discuss the results of Kochnev and Zdor in the subsequent discussion.

37. On page 10, the last two paragraphs in the penultimate paragraph on the page, the Service cautions that the results of Ovsyanikov (2012) were based on an “inconsistent study design among years and lack of quantitative analyses to understand the demographic ramifications of the observed recruitment indices.” The Service then goes on to use those results to suggest there is an “apparently lower reproduction on Wrangel Island.” If Ovsyanikov’s results are suspect, then they should not be used in the SAR. The following should be deleted from the final sentence on this page: “apparently lower reproduction on Wrangel Island.”

*Response:* We believe it is relevant to cite the study by Ovsvyanikov but highlight for readers the reasons why the results might not be reliable. We also did not delete “apparently lower reproduction on Wrangel Island” because it is in reference to the decision making process of the PBSG, and that is one of the factors they cited in their decision to consider the population ‘data deficient.’

38. The second complete sentence on page 13 is information from Kochnev and Zdor (2015), which provides subsistence removal estimates based on interview data. Reference to this paper and its information should be included in the SAR.

*Response:* We agree and revised the SAR to reflect this information.

39. On page 16, the last sentence of the paragraph before “Status of Stock” is information from Kochnev and Zdor (2015), which is criticized for reasons similar to those given for Ovsvyanikov (2012).

*Response:* As noted above, we revised the SAR to reflect both studies and discussed their limitations.

40. On page 19, the last sentence of paragraph before “Oil and Gas Extraction”, the interpretation of Wilson et al. (2016) is that population declines will occur as a result of lost “preferred” habitat. This statement is overreaching.

*Response:* We changed “continued loss is likely to lead to population declines...” to “continued loss could lead to population declines....”

#### Comments Specific to the Southern Beaufort Sea Stock Assessment

41. Commenter appreciates the transparency and acknowledgement that the SBS minimum population estimate is biased low because the western extent of the SBS stock range (west of Point Barrow) was not included in previous capture/recapture studies. It is likely that the minimum population estimate is higher than 782 bears

listed on page 8 of the draft stock report, given that a portion of the SBS stock range is not reflected in prior studies.

*Response:* We agree and recognize that the minimum population estimate may be higher. Thus, consistent with the statutory definition of “minimum population estimate,” the estimate provides reasonable assurance that the stock is equal to or greater than the estimate.

42. In the *Other Mortality* subsection, the Service should strike the words, “near industry facilities” from the line on page 13: “In 2012, one adult female and her two-year old male cub were found dead on an island near industry facilities.”
- Industry operators worked closely with Service Law Enforcement and the Marine Mammals Management Office after the discovery of these bears. There was no discovered source of rhodamine B or hazardous substance unsecured or available to wildlife at industry facilities. The bears were also discovered close to Cross Island (the base for local whaling activities), a U.S. Air Force short-range radar site, and local communities. There are also shipping and boating activities that occur throughout the Beaufort Sea that could have been a source. Please include all or none of these potential sources given that the cause of the polar bears’ death remains unknown.

*Response:* We made the suggested change.

43. The U.S. Geological Survey (USGS) has collected population data on SBS bears through at least 2015; new data should be analyzed and presented as soon as possible.

*Response:* The USGS was working to analyze those data at the time the SAR was being developed; the Service considers all information, including information from the USGS, when it is available to us.

44. The Service should provide information on the map in Figure 2 indicating whether overlap exists between the two stocks (Northern Beaufort Sea (NBS) and SBS) and showing its likely extent. In addition, the Service should provide available information on the range of the stocks. The Service should 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.

*Response:* We modified the figure to include information on the Northern Beaufort Sea stock.

45. Harvest data from Canada should be included in Figure 3 of the Service's SAR.

*Response:* Canada records and reports harvest data based on a hunting season that overlaps 2 calendar years. The U.S. portion of the harvest, which is provided in Figure 3, is reported based on annual harvest data. Therefore, rather than revise Figure 3, we have included their harvest information in the body of the SAR.

46. A proposed  $R_{\max}$  of 7.5 percent for the SBS population is much too high and the rate should be revised to a more science-based and precautionary value.

*Response:* As we describe in the SAR, under favorable conditions, the population was capable of increasing up to 7.5 percent. Although we also acknowledge that potential current and future effects could lead to lower realized growth rates, 7.5 percent provides the best estimate to date of  $R_{\max}$ .

47. The Service should confirm the current quota of 70 bears under the agreement between the Inuvialuit of Canada and the Inupiat of Alaska (I-I Agreement).

*Response:* We have corrected the text to reflect a quota of 56 bears: 35 for the United States and 21 for Canada.

48. The Service should include total harvest mortality for the SBS stock, including U.S. and Canada harvest.

*Response:* We included data on recent harvest as reported by Canada, which reports harvest by season rather than on annual bases.

49. The Service should explain the changes to the SBS boundary by Canada and explain how those changes affect the annual average mortalities of the SBS.

*Response:* We determined that information in the distribution section adequately reflects the changes of the boundary and included text to clarify the number of bears currently being harvested in Canada.

50. The Service should cite the following studies to show declines in the stock being related to sea ice loss: Bromaghin et al (2015); Rode et al. (2014); and Regehr et al. (2010).

*Response:* Those studies are already cited making those points.

51. The SAR states that bears in the SBS are expected to experience nutritional stress, but evidence indicates that it is already happening: Cherry et al. (2009) and Whiteman et al. (2015).

*Response:* The SAR states that, in general, polar bears are expected to experience nutritional stress. The section then goes on to provide evidence that bears in the SBS stock are experiencing negative effects of ice loss (e.g., Rode et al. (2014)).

52. The Service should include the Herreman and Peacock (2013) and Rogers et al. (2015) studies as evidence of increased vulnerability to conflicts with humans.

*Response:* We did not add the citations suggested because they do not provide evidence of increased vulnerability of conflicts with humans. However, we

have added an additional statement to this effect after citations that do support this contention (e.g. Schliebe et al. (2008), Atwood et al. (2015a)).

53. The Service should cite Durner et al. (2011), Pagano et al. (2012), and Pilfold et al. (2017) as evidence of increased long-distance swimming and mortality/physiological stress.

*Response:* We agree and added the references and citations to the discussion on responses to changing sea ice conditions.

54. The population estimate for the SBS stock is nearly 8 years old. If no new estimates are available in 2018, the Service should revise the SAR and indicate that the population estimate is unknown.

*Response:* We acknowledge the concern raised by the comment; however, we believe the population estimate of 900 animals reflects the best scientific information available for this SAR. In addition, because of possible negative biases, this population estimate is based on a cautious interpretation of trends and estimates and, therefore, we are reasonably assured that the SBS stock includes at least 900 bears. We will continue to review, on an annual basis, the status of this SAR to determine whether a revision is warranted.

55. Details on the distribution of terrestrial den sites (e.g., which barrier islands, how many sites, etc.) should be provided in tables and/or figures rather than abstracted statements like “Currently, the primary terrestrial denning areas for the SBS stock in Alaska occur on the barrier islands from Barrow to Kaktovik, and along coastal areas up to 25 miles inland, including the Arctic National Wildlife Refuge to Peard Bay, west of Barrow.”

*Response:* It is not possible to give a specific description of where all dens of the stock are distributed given that not every single adult female in the

population has a GPS collar. As written, the existing descriptions cover the known distribution of polar bear dens. Sufficient denning habitat exists across the North Slope, so depending on snow cover in any given year, which is itself variable, anywhere within the described area could be used for denning.

56. There should be discussion in the first paragraph about the relevant management authority for the SBS stock, specifically add 1–2 sentences about the I–I Polar Bear Commission that manages the quota for the taking of polar bears in the Beaufort Sea.

*Response:* We determined that the SAR adequately informs the reader of this voluntary quota as written.

57. On page 6, it should be emphasized that population estimates have been difficult to obtain because the fieldwork does not correspond to the stock boundaries.

*Response:* We determined that the SAR adequately describes challenges associated with population estimates.

58. Although information is presented from Bromaghin et al. (2015), more data on the SBS population have been collected that are not presented in the SAR. Those data represent the best available science/information and, therefore, that information should be presented.

*Response:* Those data represent raw data that had not yet been analyzed at the time this SAR was developed and, in their state, they provided no additional information on the population's size.

59. The sentences on page 9 about harvest seem to conflict given their overlap in time.

*Response:* We are unaware of a conflict in the material as presented.



60. On page 9, in the first paragraph, it is unclear how reports from Russian scientists pertain to SBS polar bears. Explanation needed.

*Response:* We agree and removed reference to Russian scientists and residents of coastal Russia from the document.

61. On page 10, top paragraph, the phrase “Based on all available data...” is not accurate. Data were collected through 2015, and thus data should have been available from 2010 to 2014 to the PBSG. This sentence should be revised.

*Response:* The statement is accurate as written. The PBSG made their determination based on the available analyses on the population. While additional data have been collected on the SBS stock by the USGS, they had not yet been analyzed at the time the SAR was developed and were therefore unavailable for the PBSG to consider.

62. On page 15, the statement “Polar bears are adapted to life in a sea ice environment” is somewhat misleading. The southern populations of polar bears, such as those in Hudson Bay, Labrador, and the Bering Sea, use sea ice only when available, and turn to alternate terrestrial habitat in summer. A more factually correct statement might read, “Polar bears are adapted to life on sea ice but show significant temporal use of terrestrial habitats as well.”

*Response:* We disagree. A primary factor that separates grizzly bears and polar bears is the adaptation of polar bears to life on sea ice. While it is true that polar bears come on land when sea ice is unavailable, if they were to stay on land indefinitely, they would not survive because they require seals hunted on sea ice to survive.

63. On page 18 there is an assertion, “Oiled polar bears are unable to effectively thermoregulate, and may be poisoned by ingestion of oil during grooming or

eating contaminated prey (St. Aubin (1990)).” Polar bears are highly vulnerable to oil ingestion with subsequent fatality (Øritsland et al. (1981)). This section needs revision with appropriate literature sources.

*Response:* We disagree as the appropriate and important impacts to polar bears are discussed in the SARs. We have, however, updated the document to cite Øritsland et al. (1981).

## **References**

In accordance with section 117(b)(1) of the MMPA, we include in this notice a list of the sources of information or published reports upon which we based the revised SARs. The Service consulted technical reports, conference proceedings, refereed journal publications, and scientific studies prepared or issued by Federal agencies, non-governmental organizations, and individuals with expertise in the fields of marine mammal biology and ecology, population dynamics, Alaska Native subsistence use of marine mammals, modeling, and commercial fishing technology and practices. These agencies and organizations include: the Service, the USGS, the National Oceanic and Atmospheric Administration, the National Park Service, the Arctic Institute, the North American Wildlife and Natural Resource Conference, the Marine Mammals of the Holarctic V Conference, and the Outer Continental Shelf Environmental Assessment Program. In addition, the Service consulted publications such as the Journal of Wildlife Management, Conservation Biology, Marine Mammal Science, Ecological Applications, Biological Conservation, Aquatic Mammals, Journal of Zoology, Marine Mammal Science, and other refereed journal literature, technical reports, and data sources in the development of these SARs. A complete list of citations to the scientific literature relied on for each of the two revised SARs is available by visiting the Service’s Marine Mammals Management species information page at:

<http://alaska.fws.gov/fisheries/mmm/reports.htm>. These citations are likewise part of each SAR and may be viewed with the documents (see **ADDRESSES**).

**Authority**

The authority for this action is the Marine Mammal Protection Act of 1972, as amended (16 U.S.C. 1361 et al.).

**Signing Authority**

The Director, U.S. Fish and Wildlife Service, approved this document and authorized the undersigned to sign and submit the document to the Office of the Federal Register for publication electronically as an official document of the U.S. Fish and Wildlife Service. Martha Williams, Principal Deputy Director Exercising the Delegated Authority of the Director, U.S. Fish and Wildlife Service, approved this document on June 15, 2021, for publication.

**Krista Bibb,**

*Acting Regulations and Policy Chief,*

*Division of Policy, Economics, Risk Management, and Analytics,*

*Joint Administrative Operations,*

*U.S. Fish and Wildlife Service.*

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