



MARINE MAMMAL COMMISSION

17 July 2013

Deborah Pierce Williams, Chief
Marine Mammals Management Office
1011 East Tudor Road
Anchorage, AK 99503

ATTN: Docket No. FWS-R7-ES-2012-0019

Dear Ms. Pierce Williams:

The Marine Mammal Commission (MMC), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the Fish and Wildlife Service's (FWS) draft stock assessment reports for Pacific walrus and three stocks of northern sea otters in Alaska. These reports provide valuable information needed to understand and effectively address important marine mammal conservation issues. The MMC appreciates FWS's work on the reports, as well as the opportunity to review them, provide comments, and recommend improvements.

Unfortunately, available stock assessment information often is not sufficient to meet the requirements of the Marine Mammal Protection Act (MMPA). Some stock assessments lack even the most basic information such as recent survey information used in minimum abundance estimates, which are necessary to calculate the stocks' potential biological removal (PBR) levels. Estimates of serious injury and mortality rates also are lacking for some stocks. In the absence of such critical information, managers cannot confidently determine the status of these stocks, the significance of human effects on them, and the effectiveness of management measures intended to conserve them. In the end, the lack of information means that managers should apply a precautionary approach, which may result in over-protection. In reality, a precautionary approach, although warranted, often is not applied and may result in under-protection. Either approach can be unnecessarily costly, but, the MMC maintains that in the face of uncertainty, a precautionary approach helps ensure that we meet our mandate to maintain viable marine mammal populations in a healthy marine ecosystem. Moreover, a precautionary approach is reflected in the provisions of the MMPA, which generally gives the benefit of any doubt to marine mammals.

RECOMMENDATIONS

To improve all four stock assessments, the Marine Mammal Commission recommends that the Fish and Wildlife Service—

- estimate total annual human-caused mortality and serious injury and provide a clear statement describing that estimate in every stock assessment report;
- collaborate with the National Marine Fisheries Service (NMFS) to assess human effects more completely by (1) developing a framework for describing the full effects, both direct

- and indirect, of all human activities that may cause serious injury or mortality of marine mammals and (2) then incorporating that framework into stock assessment reports; and
- include a statement about the status of each stock relative to its optimum sustainable population (OSP) in each of its stock assessment reports.

With regard to the draft stock assessment report for the Pacific walrus, the Marine Mammal Commission recommends that the Fish and Wildlife Service—

- meet with the Commission to discuss the ongoing and impending changes in the Arctic and consider the development of long-term assessment strategies to characterize population abundance, stock status, and ecological and human interactions as climate disruption continues, as well as long-term management strategies that anticipate the risks to walruses and include proactive measures to avoid or minimize those risks;
- continue its efforts with the United States Geological Survey to collaborate with Alaska Native communities to monitor the abundance and distribution of walruses, and to make full use of animals taken for subsistence and handicraft purposes to obtain data on demography, ecology, life history, behavior, health status, and other pertinent topics; and
- work with the National Marine Fisheries Service to generate a range-wide abundance estimate for Pacific walruses using data from the National Marine Fisheries Service's recent and ongoing ice seal aerial surveys.

With regard to the draft stock assessment report for the Southwest, Southcentral and Southeast Alaska northern sea otter stocks, the Marine Mammal Commission recommends that the Fish and Wildlife Service—

- revise its estimates of the minimum population estimate and potential biological removal (PBR) levels for sea otters using data only from surveys less than eight years old;
- beginning with the Southwest Alaska stock, (1) develop strategic plans and conduct the surveys necessary to provide precise and accurate abundance estimates for all three Alaska sea otter stocks, and (2) use that information in its management of those stocks and assessments of risk factors affecting them; and
- revise the distribution and stock boundary maps of each sea otter stock to provide more detailed, stock-specific information, including the track lines of surveys conducted in the last eight years.

RATIONALE

GENERAL COMMENTS

Addressing all sources of human-caused mortality and injury

Section 117(a)(3) of the MMPA requires that NMFS and FWS describe in each stock assessment “the annual human-caused mortality and serious injury of the stock by source and, for a strategic stock, other factors that may be causing a decline or impeding recovery of the stock,

including effects on marine mammal habitat and prey.” Management actions may be triggered by the comparison of this number to a stock’s PBR, a process which is greatly aided by the provision of a clear and concise statement specifying the estimated total annual human-caused mortality and serious injury. Errors and confusion can arise in the absence of such a statement and therefore, the MMC recommends that the FWS estimate total annual human-caused mortality and serious injury, and provide a clear statement describing that estimate in every stock assessment report.

Generally speaking, assessing all human-caused mortality and serious injury is challenging, but especially so with current resource and technology limitations. It is likely that the majority of natural and human-caused deaths are not detected, reported, and attributed correctly to the cause (Perrin et al 2011, Williams et al 2011). The last of these possibilities is particularly true when the cause of death is indirect, such as through fisheries competition or habitat degradation. Reliably assessing the number of marine mammal deaths and serious injuries is extremely difficult even when the cause involves direct or operational interactions between marine mammals and fisheries (bycatch). Although some fisheries are fully monitored (100 percent observer coverage), most have low levels or no coverage. Karp et al. (2011) reported that 58 percent of 274 commercial fisheries managed by NMFS do not have any observer coverage. The presence of an observer does not guarantee detection, as dead animals may fall out of the net before or during gear retrieval or seriously injured animals may break free but later die. Van der Hoop et al. (2012) summarized 1,762 detected large whale deaths in the United States and Canada and attributed 28 percent to entanglement, ship strike, or other human causes; 14 percent to non-human causes; and 57 percent to undetermined causes. The various means of detecting marine mammals killed or seriously injured by human activities may be complementary to a degree (e.g., dead animals not detected by a fishery observer may be observed by a member of a stranding network). Nonetheless, the study by van der Hoop et al. (2012) indicates that the existing information is not sufficient to conclude that NMFS and the FWS are detecting all, or even most, marine mammals killed or seriously injured by human activities.

Improving estimates of human-caused marine mammal mortality and serious injury is a difficult challenge, particularly in remote areas like Alaska. Comprehensive observer coverage and complete necropsies of all stranded carcasses would make a significant improvement, but such an effort likely would be too expensive and logistically or technologically difficult to be practical. However, those limitations are or have been true for many marine mammal conservation challenges, and should not preclude efforts to seek at least incremental improvements in these assessment efforts. The initial challenge for stock assessment scientists is to lay out reasonable hypotheses about which human activities are likely to seriously injure or kill marine mammals, identify the species that are likely to be affected, describe the information or the types of studies needed to assess the extent of serious injury or death accurately, estimate the nature and types of resources (e.g., funding, infrastructure) that would be needed to conduct such studies, and compare the costs and consequences of conducting the studies with the costs and consequences of not doing so. All of that information would provide a better basis for decision-makers within the FWS to determine where or how they can use their existing resources most effectively and to estimate their future resource needs.

Despite the tremendous challenges associated with estimating total human-caused mortality and serious injury, scientific research provides some insights into possible correction factors to apply

to observed mortalities and serious injuries. Furthermore, the evidence supports, and the MMPA calls for, a precautionary approach in the absence of perfect information. Therefore, the MMC recommends that the FWS collaborate with NMFS to assess human effects more completely by (1) developing a framework for describing the full effects, both direct and indirect, of all human activities that may cause serious injury or mortality of marine mammals and (2) then incorporating that framework into stock assessment reports. These steps are necessary to ensure that decision-makers are informed not only about the established information on a stock, but also about the degree of uncertainty regarding the other risk factors that may be affecting the stock's status and what would be required to reduce that uncertainty.

Optimum Sustainable Population

Section 117(a)(5) of the MMPA requires that within a stock assessment report the FWS, “categorize the status of the stock as one that— (A) has a level of human-caused mortality and serious injury that is not likely to cause the stock to be reduced below its optimum sustainable population; or (B) is a strategic stock, with a description of the reasons therefor.” Accordingly, the Guidelines for Assessing Marine Mammal Stocks (GAMMS) (NMFS 2005) recommend that the status-of-stock section of each stock assessment report present a summary of the stock status relative to its optimum sustainable population (OSP). Given that the MMPA clearly mandates that marine mammal species and stocks should not be permitted to diminish below their OSP, the MMC concurs with the recommendation in the GAMMS to include a summary of stock status relative to its OSP. Therefore, the MMC recommends that the FWS include a statement about the status of each stock relative to its OSP in each of its stock assessment reports.

PACIFIC WALRUSES

Climate change

The loss of Arctic sea ice arising from climate disruption poses considerable risks to walrus. Subsequent to a recent status review, the FWS published a 12-month finding on a petition to list the Pacific walrus as endangered or threatened under the Endangered Species Act (76 Fed. Reg. 7634). It found that listing was warranted but precluded at that time by higher priority actions. The FWS did, however, add the Pacific walrus to the list of candidate species and has agreed to a schedule for proceeding with a listing decision. The loss of sea ice is diminishing the availability of suitable haul-out substrate and, therefore, is affecting walrus foraging and resting patterns. This problem is likely to increase as the predicted decline in sea-ice coverage and thickness continues. Increased shipping, oil and gas development, military activities, commercial fishing, and coastal development—all facilitated by the warming temperatures and the loss of sea ice— pose additional new risks to this species.

The MMC recognizes that the FWS is well aware of the risks to walrus posed by climate change. However, the challenge associated with conserving these animals should not be dismissed or discounted because of a lack of resources. The FWS can approach this problem at two levels. First, it should be making a strong case for the needed resources. The effects of climate change on the walrus and other species likely will be profound—the Pacific walrus could be extirpated from large parts of its range and the subspecies may eventually be at considerable risk of extinction. Second, at the regional level, the FWS should be identifying the tools and approaches needed to prevent such

outcomes. Research to assess abundance, trends, distributional shifts, movements, and various measures or indices of individual animal health would help guide the conservation effort. In addition, the FWS, in consultation with the MMC, should consider what other measures, in addition to research, should be initiated in the near future. For example, the FWS should consider establishing additional marine protected areas with optimal siting and design to enhance the resilience of the walrus population. The FWS also should be considering what steps should be taken now to eliminate or minimize the risks to walruses from secondary factors, such as shipping, fishing, energy development, military activities, tourism, and coastal development.

Accordingly, the MMC invites the FWS to meet with the MMC to discuss the ongoing and impending changes in the Arctic and consider the development of long-term assessment strategies to characterize population abundance, stock status, and ecological and human interactions as climate disruption continues, as well as long-term management strategies that anticipate the risks to walruses and include proactive measures to avoid or minimize those risks.

As the MMC has long advocated, and the FWS is demonstrating by example, working with Alaska Natives greatly benefits both research and conservation, and strengthening that cooperation is essential as Arctic climate continues to change. Subsistence harvests provide opportunities to collect valuable data on walruses in many parts of their range while minimizing the logistical requirements and costs. To maximize research and management capacity in the Arctic, the MMC recommends that the FWS continue its efforts with the United States Geological Survey to collaborate with Alaska Native communities to monitor the abundance and distribution of walruses, and to make full use of animals taken for subsistence and handicraft purposes to obtain data on demography, ecology, life history, behavior, health status, and other pertinent topics. For example, in monitoring the abundance and distribution of walruses, the FWS should encourage participation of Alaska Natives, support supplemental monitoring by Alaska Natives, and incorporate traditional ecological knowledge. Furthermore, this collaborative work with the Alaska Native communities would provide an opportunity to revisit struck-and-lost estimates and revise the correction factor in light of changes in harvesting practices since the last analysis (Fay et al 1994).

Abundance estimates

Reliable abundance estimates and evaluation of trends in abundance through time will be key metrics in gauging responses of walruses to climate change and trying to mitigate adverse impacts. As noted in the draft stock assessment report, there is "... [a] suite of challenges associated with walrus aerial surveys, many of which cannot be overcome (e.g., poor weather, extensive area, estimate imprecision)," which have resulted in consistently imprecise abundance estimates of limited utility. The MMC concurs with the FWS's statement that new approaches for evaluating population status and trend need to be explored. The MMC has expressed its reservations to the FWS about the genetic mark-recapture approach it is currently pursuing. While the MMC acknowledges the FWS's effort to seek creative solutions to the challenge of reliably estimating walrus abundance, it encourages FWS to obtain and follow advice from an independent review of the mark-recapture approach and to explore every opportunity to obtain reliable abundance estimates. Accordingly, the MMC recommends that the FWS work with NMFS to generate a range-wide abundance estimate for Pacific walruses using data from NMFS's recent and ongoing ice seal aerial surveys. The spatial and

temporal coverage of these surveys, the data-collection methods, and NMFS's analytic approaches should allow the generation of an improved abundance estimate for walrus.

NORTHERN SEA OTTERS

Use of recent survey data

An abundance estimate derived from survey data typically consists of a point estimate (e.g., the mean) and a measure of the certainty of the point estimate (e.g., a 95 percent confidence interval). As the "age" of the survey data increases, confidence that the point estimate reflects the true abundance decreases. Therefore, it is appropriate to assign a time period after which such estimates should no longer be used to calculate the minimum population estimate or PBR. Following discussions at the GAMMS II workshop, a time period of eight years was recommended as the cut-off for survey data to be used (Wade and Angliss, 1997). The MMC, in the absence of more frequent surveys, supports the use of this eight-year threshold. All three of the sea otter stock assessment reports include information derived from at least one survey that is greater than eight years old in calculating minimum population estimates and PBR levels. Accordingly, the MMC recommends that the FWS revise its estimates of the minimum population estimate and PBR levels for sea otters using data only from surveys less than eight years old. Older data will still be useful and needed for trend analyses.

Such a revision will have a large effect on the minimum population estimate for the Southwest Alaska stock in particular. In this case, the last two range-wide surveys took place in 1992 and 2000 so the majority of estimates are based on data more than eight years old. Application of the eight-year threshold will result in a drastically reduced minimum population estimate and a correspondingly lower PBR. This illustrates a clear need for another range-wide survey to provide a higher degree of confidence in the abundance estimates used for making management decisions and for determining with an acceptable level of certainty whether the population has stabilized.

Data from only one of the five survey areas for the Southeast Alaska stock are more than eight years old and the omission of those data will not have a large effect on the minimum population estimate. However, as this stock is increasing and expanding its range, continued and frequent survey effort to monitor these changes is important, especially given the relatively large, and increasing, levels of subsistence harvest from this stock. The MMC recommends that the FWS, beginning with the Southwest Alaska stock, (1) develop strategic plans and conduct the surveys necessary to provide precise and accurate abundance estimates for all three Alaska sea otter stocks, and (2) use that information in its management of those stocks and assessments of risk factors affecting them.

Distribution and stock boundary map

Each of the stock assessment reports would be improved if the FWS provided a more detailed distribution and stock boundary map for each stock, in addition to the single figure currently provided for all three stocks. This would be particularly useful for a reader trying to visualize the discussion of range expansion in the Southeast Alaska stock assessment report. Further, by adding the track lines of surveys conducted in the last eight years, the FWS would provide a clear illustration of recent survey coverage, the spatial extent of data contributing to abundance and PBR

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estimates, and where there are gaps that need to be addressed with more survey effort. The MMC recommends that the FWS revise the distribution and stock boundary maps of each sea otter stock to provide more detailed, stock-specific information, including the track lines of surveys conducted in the last eight years.

Again, we appreciate the opportunity to comment on these stock assessment reports. Please contact me if the MMC can support in any way the FWS's efforts to improve these important stock assessments.

Sincerely,



Rebecca J. Lent, Ph.D.
Executive Director

cc:

Diane Bowen, FWS National Marine Mammal Coordinator

Charles Hamilton, FWS Administrative Officer Region 7

Lloyd Lowry, Chair Alaska Scientific Review Group

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