8 February 2011

Mr. Douglas M. Burn
Wildlife Biologist
Marine Mammals Management Office
U.S. Fish and Wildlife Service
1011 East Tudor Road
Anchorage, AK 99503

Dear Mr. Burn:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the draft recovery plan for the distinct population segment of northern sea otters in southwest Alaska. The Commission gratefully acknowledges the Southwest Alaska Sea Otter Recovery Team and the Fish and Wildlife Service for their work on the draft. The following recommendations and comments are intended to improve it.

RECOMMENDATIONS

The Marine Mammal Commission recommends that the Fish and Wildlife Service adopt the draft recovery plan for the southwest Alaska distinct population segment of northern sea otters subject to the following changes:

- revise the draft plan by including estimates of the total time and cost required to recover the population to the point that it can be delisted;
- (1) delete the statement concluding that the potential impact on sea otters from oil development in southern portions of the Bering Sea will be negligible, (2) replace it with a statement that potential impacts on sea otters could range from negligible to high depending on the nature and extent of any spills that occur, and (3) update the tables in the Threats Analysis section accordingly;
- reconsider and revise its proposed approach for determining when the listing status of the southwest Alaska sea otter should be changed to endangered;
- revise the plan to include the initial frequency for population monitoring surveys of each management unit;
- expand the list of actions under Task 2.3 to include the development of an oil spill response plan that describes (1) priority areas requiring protection, (2) personnel and equipment needed to protect those areas from contact by oil and to respond to oiled otters, (3) logistical requirements for deploying those resources and response efforts, and (4) the costs of purchasing and establishing equipment caches to meet specific sea otter response needs;
- restructure the planned actions to investigate the role and significance of disease on pages 8-6 and 8-7 as described in the following rationale; and
- work with the National Marine Fisheries Service to modify Task 5.1 on predation impacts by (1) dividing the task into two subtasks, one for studies focused on sea otters and the other for studies focused on killer whales and other predators, (2) expanding the discussion under each to identify the studies that the Services believe to be of highest priority, and (3) providing cost estimates for those studies.

RATIONALE and COMMENTS

Pages iii-1v, Executive Summary: Section 4(f)(1)(B)(iii) of the Endangered Species Act directs that, to the maximum extent practicable, recovery plans include estimates of the time and cost required to recover listed populations. The draft recovery plan estimates costs for the next five years but does not include estimates of the total time or cost for recovery. The Marine Mammal Commission recommends that the Fish and Wildlife Service revise the draft plan by including estimates of the total time and cost required to recover the population to the point that it can be delisted. The Service could estimate the minimum total time to recovery using the current abundance, maximum possible growth rate, and estimated population size at delisting. It could estimate the minimum cost based on known monitoring, research, and management needs. Providing at least minimum estimates of cost and time is useful for guiding long-term research and management plans, as well as in developing realistic expectations regarding the recovery process.

Pages 2-1 to 2-23, Biological Background: This section provides a useful and complete summary of available biological information.

Page 2-12, Column 2, paragraph 3: This paragraph and the first paragraph on page 2-13 reference sea otter counts in the "western and central" Aleutian Islands. The plan, however, divides the Aleutians into eastern and western Aleutian Islands only. The inconsistency should be resolved.

Pages 3-1 to 3-24, Threats and Impediments to Recovery: This section provides a thorough review of information on known and possible factors that may have contributed to the population's decline or may impede recovery. Among other things, it notes that the most likely cause of decline is an increase in predation by killer whales. The Commission believes that this conclusion is reasonable given available information. The Commission generally agrees that there is relatively little evidence suggesting that other factors (i.e., disease, biotoxins, contaminants, habitat loss, a declining prey base, subsistence harvests, illegal take, disturbance, and fishery bycatch) contributed significantly to the decline.

However, that does not mean that other factors will not influence the population's recovery. Specifically, the Commission does not agree with the draft plan regarding the risks from an oil spill. On page 3-21 (first complete paragraph in column 2), the draft plan states that outer continental shelf lease sales are planned for Bristol Bay and, based on a review in the draft environmental impact statement for those sales, the Service has concluded that—

> the potential impacts of this development (i.e., oil and gas development in Bristol Bay) on the southwest Alaska DPS will be negligible as sea otters occur primarily in the near shore zone and the lease sale area is at least three miles from shore. Therefore sea otters do not significantly overlap with the lease sale area.

First, the referenced analysis is no longer current. The North Aleutian Shelf leasing area, which includes Bristol Bay, has been removed from the current 2007–2012 outer continental shelf leasing

schedule. However, a sale is still planned in Cook Inlet that could affect the Kodiak–Kamishak Bay–Alaska Peninsula sea otter management unit. It also is possible that the Department of the Interior will include lease sales in the North Aleutian Shelf area in future lease sale plans.

The Commission believes that such development could have a significant impact on the southwest Alaska sea otter population. First, the draft plan (page 2-18) itself states that in the 1970s and 1980s it was not uncommon to observe large rafts of sea otters more than 25 km from shore in Bristol Bay. Second, and more important, large oil spills can travel hundreds of miles from their source in directions that depend on winds, currents, and tides. Typical currents and winds may move spilled oil away from the Aleutian Islands, but it is possible that variable conditions might also move oil toward eastern Bristol Bay or even southward toward the eastern Aleutians where it could reach waters within 3 miles of shore. Third, given the remoteness and harsh conditions of the North Aleutians area, a spill could continue for months before being brought under control. Fourth, evidence of reduced otter reproduction 20 years after the *Exxon Valdez* spill suggests that spill effects may persist for decades. And fifth, the probability and risk of a spill from oil and gas activities are substantial when considered over the period of time needed for population recovery or over the lifetime of a platform (30 to 40 years) or oil field (perhaps a century). The Marine Mammal Commission therefore recommends that the Fish and Wildlife Service (1) delete the statement concluding that the potential impact on sea otters from oil development in southern portions of the Bering Sea will be negligible, (2) replace it with a statement that potential impacts on sea otters could range from negligible to high depending on the nature and extent of any spills that occur, and (3) update the tables in the Threats Analysis section accordingly.

Page 5-1, Recovery Strategy: The fourth paragraph of this section notes that the only identified threat factor judged to be of high importance to recovery is predation. It also notes that killer whale predation is thought to be the most likely cause of the decline in the western Aleutian Islands and that the role of predation is either less clear or less important in other areas. However, the draft also ranks predation risks as high for the eastern Aleutian Islands region and southern Alaska Peninsula. This inconsistency should be explained or the draft should be modified to remove it. In addition, the statement on the risks of oil spills should be revised according to the preceding comments.

Pages 6-1 to 6-6, Recovery Goals, Objectives and Criteria: This section provides estimates of the carrying capacity of each management unit and numerical thresholds for delisting and changing the listing status to endangered. The draft indicates that the population should be evaluated for delisting according to the five listing factors in the Endangered Species Act when the management units meet the following criteria: (1) at least three management units satisfy the delisting criteria, and (2) neither of the other two units is below its respective threshold for listing as endangered. For all five management units combined, the carrying capacity estimate is 211,054 otters and the delisting and uplisting thresholds are 103,417 and 8,422 otters, respectively. The current abundance estimate is 53,674 otters.

The Commission does not agree with the use of a single uplisting threshold of 8,422 otters. That level means that the population would have to be at 4 percent or less of its estimated carrying

capacity before being uplisted to endangered. To arrive at this figure, the plan notes that the team recommended that this listing threshold be based on a 5 percent probability of the population segment becoming extinct within 25 years. There is no broadly agreed threshold for this criterion, and different thresholds may be more appropriate for different species based on their life history characteristics. Nevertheless, the Commission is concerned that the time frame used in this plan is too short to allow implementation of responsive management actions, should it be determined that the population has declined to an endangered level. In this regard, DeMaster et al.[1] cite possible examples of endangered criteria based on probabilities of extinction with time horizons of 20 to 100 years and probabilities of extinction of between 1 and 5 percent. They note that, while some experts preferred a probability of 5 percent over 20 years, others favored a lower probability over a longer period. A short period (e.g., 25 years) seems inconsistent with much of our experience with other species for which scientists have required decades to determine abundance, track trends, and identify causes. Similarly, managers have required decades to develop and implement appropriate protective measures and to see those measures resolve conservation problems. Indeed, in many other cases (e.g., Steller sea lions, Hawaiian monk seals, North Atlantic right whales, North Pacific right whales, and California sea lions), decades of research and management have not been sufficient to reverse a decline and bring about recovery. The Commission therefore believes that a longer time frame (e.g., 100 years) or a lower extinction probability (e.g., 1 percent) should be used to establish the criteria for listing the population as endangered. Based on that view, the Marine Mammal Commission recommends that the Fish and Wildlife Service reconsider and revise its proposed approach for determining when the listing status of the southwest Alaska sea otter should be changed to endangered.

Page 7-3 to 7-4, Task 1.1.2, Population Surveys: This section gives priority to surveys of each management unit to estimate its abundance and trends. It recommends that these surveys be conducted at "regular intervals" but does not describe the frequency with which the surveys should be conducted. The frequency is important for both scientific reasons (e.g., determining the power to detect trends) and management purposes (e.g., determining budget requirements). To address this shortcoming, the Marine Mammal Commission recommends that the Fish and Wildlife Service revise the plan to include the initial frequency for population monitoring surveys of each management unit. Although Task 1.1.6 notes that the frequency of surveys may change as new information is collected, an initial schedule should be identified based on existing information needs.

Page 7-9 to 7-10, Task 2.3: Oil Spills: This task, rated as priority 1, describes the need for adequate oil spill response. It calls for working with the U.S. Coast Guard and the state of Alaska to ensure adequate resources are in position to prevent spilled oil from reaching sea otter habitat. The Implementation Schedule (section 8) estimates that it will cost $20,000 per year over the next five years.

[1] DeMaster, D., R. R. Angliss, J. Cochran, P. Mace, R. Merrick, M. Miller, S. Rumsey, B. Taylor, G. Thompson, and R. Waples. 2004. Recommendations to NOAA Fisheries: ESA Listing Criteria, by the Quantitative Working Group, 10 June 2004. NOAA Technical Memorandum NMFS-F/SPO-67. 85 pp.

The Commission agrees with the priority ranking but considers the task description inadequate and the proposed funding insufficient. The Service should work with the U.S. Coast Guard and state of Alaska to improve planning and response to an oil spill. More specifically, the Marine Mammal Commission recommends that the Fish and Wildlife Service expand the list of actions under Task 2.3 to include the development of an oil spill response plan that describes (1) priority areas requiring protection, (2) personnel and equipment needed to protect those areas from contact by oil and to respond to oiled otters, (3) logistical requirements for deploying those resources and response efforts, and (4) the cost of purchasing and establishing equipment caches to meet specific sea otter response needs. The Service also should revise the cost estimate for this task (in the Implementation Schedule) to better reflect the requirements of such a detailed plan. Finally, the Commission suggests either combining this task with the similar one under Task 6.1 (page 7-15) or rewriting the tasks to clarify how they differ.

Pages 7-10 to 7-11, Section 3.1: Harvest Management: This section includes several tasks related to the management of Alaska Native subsistence harvests. The draft assigns a priority 3 rank to collection of information to estimate the number and characteristics of otters harvested and to address related harvest management needs because harvest levels are low and harvesting occurs only in limited areas. It assigns priority 2 to evaluation of harvest impacts using a model that depends on the number, age, and sex of the otters reported from the harvest (Task 3.1.2). These rankings seem inconsistent—if the model depends on accurate data, why would collection of that data be given lower priority? The Commission suggests the Service reconsider the rankings in this section to ensure data collection and evaluation tasks are ranked consistently.

Pages 7-12 to 7-18, Tasks 4.1.1 and 4.1.2: Disease: These tasks emphasize the importance of collecting sea otter carcasses for analyzing the prevalence and impact of disease, contaminants, and other factors affecting sea otter health. The difference between these two tasks is not clear but should be clarified or be combined. Furthermore, because Task 4.1.3 discusses the collection and analysis of tissues for contaminants, which is essentially the same as Task 6.3, the Commission suggests combining those tasks. Similarly, Task 6.4 on biotoxins might be combined with tasks in section 4 because all these tasks involve collection and analyses of tissues from carcasses. If those tasks are combined, the title of section 4 could be changed to something like "Disease, Contaminants, and Biotoxins."

Page 7-13, Task 4.1.4: The draft plan suggests that health issues were apparently not a major factor in the decline and, although they may impede recovery, "very little can be done to alter a naturally occurring disease." Although this may generally be true at present, recent observations of valvular endocarditis in a relatively large portion of southwest Alaska sea otters sampled in the eastern portion of their range indicate that may be an important factor in some areas and that it is premature to rule out disease as a possible impediment to recovery. Therefore, this task involves live capture studies to assess the status of sea otter health. The task is ranked as priority 2 with a cost estimate of $400,000 per year over five years. Only the population monitoring task has a higher cost estimate.

With regard to disease, the draft recovery plan provides an excellent review of what is known about diseases in sea otters and their potential to affect populations. The description of an unusual mortality event in Kachemak Bay and the detection of three different infectious diseases—one of which, phocine distemper virus, has caused epidemics in European marine mammals—illustrates that disease can and does cause mortality in sea otters in Alaska. The detection of phocine distemper virus in Kodiak and canine distemper virus in Washington is particularly intriguing as no epidemics occurred in association with these cases, unlike events in Europe where thousands of animals have died in morbillivirus outbreaks. The plan essentially dismisses the significance of these infections because the otter management unit in which they were discovered is not declining. However, the consequences if these diseases were to spread are unknown. The questions that need to be answered are not "are diseases present" and "do dead stranded otters have diseases" but "what impact do diseases have on survival and reproduction" and "what are the population level consequences?" The current listed actions will support detection of diseases in individual animals. They will not enhance understanding of the epidemiology and impact of the diseases found. Getting at these topics requires a strategic sampling and surveillance program. Thus, the Marine Mammal Commission recommends that the Fish and Wildlife Service restructure the planned actions to investigate the role and significance of disease on pages 8-6 and 8-7 as follows:

- Design an integrated disease surveillance plan to determine the distribution and impact of infectious diseases throughout southwest Alaska (Priority 1)
- Analyze stranded carcasses, harvested animals, and live-captured animals for presence of infectious diseases and health changes (Priority 2)
- Expand disease surveillance efforts along the Aleutian chain (Priority 2)
- Perform an annual review of health and disease data from all sources (Priority 1)
- Develop and implement a specimen archive plan for disease surveillance (Priority 2)
- Develop disease management plans and outbreak response plans (Priority 3)

Pages 7-14 to 7-15, Tasks 5.1 and 5.2: Predation: These sections discuss the only two tasks related to analyses and mitigation of predation by killer whales and other species. Both are assigned priority 1 rankings with combined cost projections of $20,000 in the first year, $150,000 in the second and third years, and nothing thereafter. The first task discusses predation studies focused on sea otters or killer whales and the second task calls for developing a predation management plan if possible. Given that killer whale predation is believed to be the most likely cause of declines and may have the most influence on recovery, the Commission agrees with the assigned priorities. However, it is concerned that projected funding for these tasks is insufficient.

Evaluating predation risks is a daunting task. The draft plan notes that studies of regional killer whale diet, population structure, and habitat-use patterns may be most helpful. However, the draft provides little discussion of how those studies could or should be approached. To give sufficient guidance, the Commission suggests that the Service expand the description of studies directed at sea otters and those directed at killer whales. The description also should include realistic estimates of the cost of each of these studies.

The National Marine Fisheries Service has lead responsibility for carrying out research on killer whales. Therefore, the two Services should be working together to identify the information needed to assess killer whale foraging and investigate how killer whale predation is affecting the sea otter population. For example, tagging of killer whales in and near sea otter habitat could be very useful in describing movement and habitat-use patterns that may overlap sea otter habitat and influence predation risks. Other studies are needed to determine the number and trends of transient killer whales. Given the importance of information on killer whale predation on sea otters, the Marine Mammal Commission recommends that the Fish and Wildlife Service work with the National Marine Fisheries Service to modify Task 5.1 on predation impacts by (1) dividing the task into two subtasks, one for studies focused on sea otters and the other for studies focused on killer whales and other predators, (2) expanding the discussion under each to identify the studies that the Services believe to be of highest priority, and (3) providing cost estimates for those studies.

Page 7-16, Task 7.2: This task (i.e., coordinating management actions with other agencies) should be expanded to note the need for coordination with the U.S. Coast Guard on oil spill response planning and vessel traffic management.

Page 7-16, Task 7.3: This task (i.e., coordinating research with other agencies) should be expanded to note the need for coordination with the National Marine Fisheries Service on killer whale research.

I hope these comments are helpful. If you have questions on the Commission's recommendations and comments, please call.

Sincerely,

Timothy J. Ragen, Ph.D.
Executive Director