MARINE MAMMAL COMMISSION
4340 East-West Highway, Room 700
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2 December 2008

Ms. Lisa Van Atta
Acting Chief, Protected Resources
Pacific Regional Office
National Marine Fisheries Service
1600 Kapiolani Boulevard, Suite 1110
Honolulu, HI 96814

Dear Ms. Van Atta:

On 3 October 2008 the National Marine Fisheries Service published a *Federal Register* notice (73 Fed. Reg. 57583) requesting comments on a petition to expand critical habitat boundaries for Hawaiian monk seals in the Northwestern Hawaiian Islands (NWHI) and the main Hawaiian Islands (MHI). The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the notice and petition and offers the following recommendations and comments.

RECOMMENDATIONS

The Marine Mammal Commission recommends that the National Marine Fisheries Service—

- propose regulations to expand critical habitat in the NWHI by adding (1) all beach areas on Sand Island at Midway Atoll and (2) all NWHI aquatic areas within the 500-m isobath,
- plan and conduct the studies needed to clarify current habitat-use patterns of monk seals in the MHI and conduct additional studies, both over time and as the population increases or expands its range, to ensure that critical habitat is identified and protected while minimizing the areas that are protected unnecessarily, and
- designate as critical habitat all MHI beach areas that are used regularly by more than one seal, all areas where births have occurred, and all waters out to the 200-m isobath in home range areas identified (with 95 percent confidence) in the Littnan et al. (2007) study.

RATIONALE

The Endangered Species Act defines critical habitat as (1) areas occupied by the species at the time of listing that include physical or biological features essential for its conservation and that may require special management considerations, and (2) areas outside the species' geographic range at the time of listing that are essential for its conservation. Implementing regulations further define essential physical or biological features as (1) space for individual and population growth, (2) food, water, and other nutritional or physiological requirements, (3) cover or shelter, (4) areas for breeding, reproduction, and rearing offspring, and (5) habitats protected from disturbance or representative of historical and ecological distribution.

The National Marine Fisheries Service designated critical habitat for Hawaiian monk seals in 1987 using this guidance, historical data on monk seal distribution and movement patterns, and information on diving patterns that had been gathered since the mid-1970s. At present, recognized critical habitat includes all NWHI beaches except those on Sand Island at Midway Atoll and all NWHI aquatic areas shallower than 20 fathoms (36.6 m) except around Sand Island. The petition seeks to expand the areas recognized as critical habitat, and the Service has found that the expansion may be warranted.

Critical Habitat in the NWHI

Haul-out areas*:* Monk seals require beaches for resting, molting, pupping, and nursing their young. Their use of NWHI beaches for these purposes has been thoroughly documented. Beach habitat in the NWHI is limited and requires special management action to protect monk seals. Emergent land along the entire 1,200-nmi NWHI chain includes only 3,400 acres (13.76 km^2), one-third of which constitutes Sand Island at Midway Atoll (1,128 acres or 4.56 km^2) (U.S. Fish and Wildlife Service et al. 2008). Furthermore, the total land area of the NWHI is decreasing due to rising sea level (Baker et al. 2006).

Sand Island has long been recognized as important habitat for the monk seal breeding colony at Midway Atoll. The colony declined rapidly during the 1950s and 1960s coincident with the expansion of the naval air station at that site. The colony began to recover after the station was closed and transferred to the Fish and Wildlife Service, which has managed Midway Atoll as a national wildlife refuge. Given the dependence of monk seals on beach habitat for resting, molting, and reproduction, the limited and declining beach area in the NWHI, and the history of monk seal use of Sand Island, the Marine Mammal Commission believes that the beaches at Sand Island are essential for Hawaiian monk seals and that they satisfy the definition of critical habitat for this species.

Aquatic areas: Monk seals also rely on aquatic areas in the NWHI, including atoll lagoons, reefs, outer reef slopes, seamounts, and surrounding pelagic waters, to forage, mate, and travel. Telemetry studies conducted over the past two decades have documented at-sea movement and dive patterns for nearly 150 seals representing all age and sex groups and all six main breeding colonies in the NWHI (e.g., Abernathy 1999, Abernathy and Siniff 1998, Stewart 2004, Stewart and Yochem 2004 a, b, c, and Stewart et al. 2006). The vast majority of reported at-sea locations and depth-of-dive records are in waters shallower than 500 m. Although the seals most frequently use reef caps and slopes shallower than about 200 m, they also use multiple areas in the NWHI within the 500-m depth contour. Managers have taken numerous special management actions in these areas to remove marine debris and prevent entanglement-related deaths and injuries, restrict commercial fishing to protect prey resources and prevent monk seal/fishery interactions, reduce shark predation to increase pup and juvenile survival rates, and restrict ship traffic to prevent vessel groundings and associated spills of oil and hazardous materials.

To protect all these essential habitat features, the Marine Mammal Commission recommends that the National Marine Fisheries Service propose regulations to expand critical habitat in the

NWHI by adding (1) all beach areas on Sand Island at Midway Atoll and (2) all NWHI aquatic areas within the 500-m isobath.

Critical Habitat in the MHI

Haul-out areas: Hawaiian monk seal distribution, abundance, and reproduction in the MHI have increased significantly in recent years (Baker and Johanos 2004). Prior to the 1990s, monk seal sightings in the MHI were relatively rare and were limited primarily to beaches and waters around Niihau and Kauai Islands. Twenty-one adult males were introduced to the MHI in 1994. Their impact on the current population is not clear. Sightings and births have now occurred at all MHI, and this region is the only portion of the species' range where its numbers have increased steadily over the past decade. The current minimum abundance estimate in the MHI is 88 seals (G. Antonelis, pers. comm.), which constitutes nearly 10 percent of the total population.

As in the NWHI, monk seals in the MHI require beaches to rest, molt, pup, and nurse their young and aquatic areas to feed, mate, and travel. Potential beach and shallow aquatic habitat in the MHI exceeds the total area available in the NWHI. In view of the persistent decline of monk seals in the NWHI, the increasing trend in monk seal numbers in the MHI may be crucial to the species' recovery and long-term persistence. However, prospects for recovery in this area are more difficult to judge as information on monk seal ecology and habitat-use patterns in the MHI is limited.

Ideally, the identification and designation of critical habitat in the MHI would be based on a strong scientific understanding of monk seal habitat-use patterns. Unfortunately, historical and current information about the species' habitat-use patterns in the MHI is limited. The situation is further complicated because socioeconomic considerations are an important factor in this region and may lead to conflicts regarding access to popular beaches or nearshore areas. The designation of critical habitat often generates anxiety among persons who conduct activities in the areas involved, although the anxiety may be based on a misunderstanding of the consequences of such a designation. Importantly, critical habitat is defined under the Endangered Species Act only in the context of actions that are authorized, funded, or carried out by a federal agency.

Given the considerable uncertainty regarding monk seal habitat-use patterns in the MHI, the Service may make two kinds of errors in its designations. The first would be to identify and designate areas that, in fact, are not important (a type I error that poses a risk of unnecessary regulation of human activities). The second would be to fail to identify and designate areas that are critical to their conservation (a type II error that poses a risk of inadequate protection of the seals). In either case, more information is needed for informed decision-making. For that reason the Marine Mammal Commission recommends that, irrespective of the outcome of this designation, the National Marine Fisheries Service plan and conduct the studies needed to clarify current habitat-use patterns of monk seals in the MHI and conduct additional studies, both over time and as the population increases or expands its range, to ensure that critical habitat is identified and protected while minimizing the areas that are protected unnecessarily.

Both types of errors in designation are to be avoided whenever possible. That being said, the species' status is critical and its numbers are declining steadily. All of the existing evidence from the NWHI (age structure, reproductive rates, survival rates, and condition of the animals) indicates that the population in that region will continue to decline for some time. Thus, the population in the MHI may be crucial for recovery. The beaches and aquatic areas around the MHI increase substantially the amount of habitat available to this metapopulation and provide the resources for additional colonies that present a buffer against extinction. Inadequate protection of habitat in this area could seriously inhibit the species' recovery, making subsequent conservation efforts more difficult and expensive. Therefore, the Commission believes this is an appropriate time to invoke the precautionary principle to guide the Service in its deliberations regarding haul-out and aquatic areas.

Haul-out areas: As in the NWHI, monk seals in the MHI require beaches to rest, molt, pup, and nurse their young. The petitioned action would designate all MHI beaches as critical habitat. The best available scientific information on monk seal use of beach habitat in the MHI is from Baker and Johanos (2004) and Littnan et al. (2007). Baker and Johanos (2004) conducted aerial surveys in 2000 and 2001 and combined their survey results with opportunistic sightings reported by the public and various federal, state, and local officials. Littnan et al. (2007) tagged 11 seals in the MHI and monitored their movements for 32 to 167 days. Their Figure 2 and Figure 2 in Baker and Johanos (2004) graphically depict beach-use patterns by monk seals in the MHI.

These studies indicate that monk seals regularly use the northwestern shore of Niihau Island. Property owners have resisted monk seal studies on Niihau Island, but aerial surveys and opportunistic sightings over the past several decades indicate that seals may use this island for hauling out more than any other island in the MHI. Similarly, virtually all beaches around Kauai Island appear to be used regularly. In 2003 the Commission provided support for a monk seal response coordinator on Kauai who kept a 79-day record of monk seal sightings during summer months. The record included a total of 211 sightings of at least 30 individual seals. The sightings indicated that the seals were using virtually all beaches. The habitat-use patterns of the seals tagged in the Littnan et al. (2007) study are consistent with these findings. The Littnan et al. (2007) results also suggest that seals haul out regularly on Oahu beaches. Their results suggest that seals are more inclined to use the area around Kaena Point and the southern half of the eastern shoreline although the suggestion is based on a small sample size. Seals in this study also were sighted at locations along the southwestern and southern shores of this island. Seals are known to haul out regularly on Molokai, and a number of pups have been born on the shores of that island (i.e., in the Kalaupapa area). Seals also are known to frequent other sites in the so-called four-island region (Molokai, Lanai, Maui, and Kahoolawe). Those sites may be important for seals foraging over or near Penguin Bank, which is known to be a biologically rich area. Finally, seals are now regularly hauling out along the northwestern and southern shores of the Big Island (Hawaii) and, presumably, foraging in nearby coastal waters.

Aquatic areas: Monk seal use of aquatic areas in the MHI is poorly known. The petitioned action would add all water areas around the MHI out to a depth of 200 m, based largely on the results of the study by Littnan et al. (2007). Although results of that study found most location and depth-of-dive records were within the 200-m isobath, they did not indicate that all areas within that

depth contour around the MHI were used or that all used areas were visited equally. Continued growth of the seal population in the MHI likely will lead to the establishment of relatively distinct pupping areas at different locations and islands, each with associated foraging areas. At present, however, the best that can be done is to identify potentially important aquatic areas based on the existing data from Littnan et al. (2007) and by extrapolation using the physical and biological characteristics of foraging habitat in the NWHI.

Based on the existing data, the Hawaiian monk seal's critically endangered status and declining trend, the importance of population growth and recovery in the MHI, and the need for a precautionary approach under these circumstances, the Marine Mammal Commission recommends that the National Marine Fisheries Service designate as critical habitat all MHI beach areas that are used regularly by more than one seal, all areas where births have occurred, and all waters out to the 200-m isobath in home range areas identified (with 95 percent confidence) in the Littnan et al. (2007) study. These areas can be refined over time as more information becomes available on habitat-use patterns.

Please contact me if you have questions about the Commission's recommendations or comments.

Sincerely,

Timothy J. Ragen, Ph.D.
Executive Director

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