



# MARINE MAMMAL COMMISSION

24 October 2011

Jeffrey S. Walters, Ph.D.  
Marine Mammals Branch Chief  
Pacific Islands Regional Office  
National Marine Fisheries Service  
1601 Kapiolani Boulevard, Suite 1110  
Honolulu, HI 96814

Dear Dr. Walters:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the Draft Programmatic Environmental Impact Statement on Hawaiian Monk Seal Recovery Actions and offers the following recommendations and rationale. Service staff has done an excellent job of preparing the draft statement and should be commended for their clear and comprehensive evaluation of potentially important recovery actions.

## RECOMMENDATIONS

The Marine Mammal Commission recommends that the National Marine Fisheries Service adopt Alternative 4 (preferred) of the programmatic environmental impact statement. The Commission also recommends that the Service—

- move forward with its planned translocation program as quickly as possible;
- consult regularly with outside experts regarding the development of this program and, after a suitable period of time, carry out a review of progress on the translocation program;
- consider including in the final programmatic environmental impact statement a discussion of the issues surrounding ecosystem-based management measures to improve conditions for juvenile seals and enhance their survival; and
- (1) give high priority to further testing of a morbillivirus vaccine on captive monk seals to identify possible effects of the vaccine, and (2) modify the first criterion for triggering morbillivirus vaccination efforts on wild seals to include the detection of canine distemper in any species outside of quarantine in the Main Hawaiian Islands (MHI).

## RATIONALE

### Adopting the preferred alternative

The ongoing decline of the Hawaiian monk seal population in the Northwestern Hawaiian Islands (NWHI) remains a major conservation concern. The draft statement considers four alternatives to reverse the species' decline and promote its recovery. Alternative 4 (preferred) proposes a set of actions based on the 2007 Revised Hawaiian Monk Seal Recovery Plan, including—

- testing and expanding new translocation approaches, including a two-stage program to move weaned pups from areas of low survival in the NWHI to the MHI and then return them to the NWHI when they have reached an age with high survival;
- supplementing the diet of seals released back into the wild from captivity at feeding stations;
- monitoring for signs of infectious disease outbreaks and developing vaccines and vaccine administration protocols;
- testing and, as warranted, expanding treatments to control intestinal parasites for the purpose of improving juvenile survival in the NWHI;
- developing, testing, and, as appropriate, implementing methods to modify the behavior of seals that are at risk because they show a propensity for interacting with people and fishing gear; and
- developing, testing, and, as appropriate, administering drugs to reduce aggressive behavior of male seals toward pups and juveniles.

The draft statement provides a thorough and thoughtful description of the above actions, together with a description of related permit requirements. Each of the above actions could contribute to recovery and the Service will require the flexibility to conduct them as needed. Therefore, the Marine Mammal Commission recommends that the National Marine Fisheries Service adopt Alternative 4 (preferred) of the programmatic environmental impact statement.

### **Translocating juvenile seals**

The most controversial and urgent enhancement activity proposed in the draft statement is the temporary two-stage translocation of juvenile Hawaiian monk seals to enhance the probability that they will survive to reproductive age. The proposed five-year program would move between 5 and 10 newly weaned female pups per year from one or more colonies in the NWHI to the MHI where they would be released for two or three years and then returned to the NWHI. Appendix E of the draft statement provides a well-considered adaptive management approach for deciding where and when to capture and move seals, as well as when to suspend translocations.

The seal population at French Frigate Shoals appears to be most in need of this type of recovery effort. In the 1980s this population comprised half of the entire species, but it has declined persistently since then because of low juvenile survival due to starvation, shark predation, aggression by adult males, and entanglement in debris. Juvenile survival at this site is about 36 percent from weaning to age one and 57 percent from age one to two (Table 3 in Appendix E). In contrast, juvenile survival in the MHI is 84 percent from weaning to age one, and 86 percent from age one to two. Survival rates from age two to three and from age three to four are near or above 90 percent both at French Frigate Shoals and in the MHI. The poor survival from weaning to age two at French Frigate Shoals has been the primary factor driving the decline of the entire species and the Commission considers it essential that the recovery program develop the capacity to implement this translocation program because, at present, it is the most promising way of stopping the decline.

The need to develop this program is urgent. Since the early 1990s the number of pups born annually at French Frigate Shoals has declined from more than 100 to about 30 at present. If survival does not improve soon, the number of reproductive females in the population and the

number of pups born annually may be too few to sustain this population. With that possibility in mind, the Marine Mammal Commission recommends that the National Marine Fisheries Service move forward with its planned translocation program as quickly as possible.

According to Appendix E of the draft statement, the principal uncertainty surrounding the proposed translocation is the survival rate of juveniles after being returned to the NWHI from the MHI. The main questions are whether they will tolerate short-term captivity and how well they will adapt when placed in an unfamiliar environment. The Service has some experience with moving seals older than pups (i.e., 10 adult males to Johnston Atoll in 1984, 21 adult males to the MHI in 1994) that suggests, in general, they should be able to tolerate captivity and transport. Whether they will adapt to their release sites is another question, and it will be important to tag animals before release and track them, preferably with satellite-linked transmitters. The Service also may find that released seals are more likely to remain at the release site if they are held there for a period of acclimation—a process referred to as a soft release. The Service should be prepared to implement that process if seals released immediately upon arrival at the release site (i.e., a hard release) leave and are not seen again at the site.

The Service also should consider moving a group of seals born in the MHI to the NWHI in year one of the translocation program. Such a move would have at least two advantages. First, it would avoid an immediate net change in the number of seals in the MHI, which should help reduce concerns by some members of the public over increasing seal numbers. Second, moving these seals in the first year will expedite assessment of this phase of the translocation program, providing insights into possible adjustments, such as a soft release rather than a hard one, to enhance the effectiveness (and cost-effectiveness) of the program. Whether the Service is able to move seals from the MHI in the first year will depend, in part, on other factors (e.g., ship availability). Recognizing the need to weigh a number of considerations, the Marine Mammal Commission encourages the National Marine Fisheries Service to begin translocations from the MHI to the NWHI as soon as possible.

### **Suspending or stopping translocation efforts**

The Service will need to be flexible in how it implements this proposed translocation program. According to the draft programmatic environmental impact statement, the program includes many novel aspects and may produce unexpected results. Appendix K describes a well-structured decision framework for choosing when and where to capture and move seals between the NWHI and the MHI.

At this time, the Commission does not consider it advisable to set strict criteria for terminating the program. Such criteria should be developed over time, but the emphasis now should be on developing the capacity to use translocation. This will involve some learning by trial and error, so the making of errors should not be an inflexible criterion for suspending or stopping the program. To ensure that the Service is making the best decisions in the face of many challenges, it should consult with outside experts as needed (e.g., from various captive facilities, the Hawaiian Monk Seal Recovery Team, the Marine Mammal Commission). Once the capacity to carry out this translocation program has been fully developed, the Service should have a sound basis for judging

when to implement, suspend, or terminate the program. With that in mind, the Marine Mammal Commission recommends that the National Marine Fisheries Service consult regularly with outside experts regarding the development of this program and, after a suitable period of time, carry out a review of progress on the translocation program. Such a review will provide an opportunity to evaluate problems, consider options, and devise measures of success.

### **Improving feeding opportunities**

Starvation appears to be the primary cause of poor juvenile survival. Why juveniles have been unable to obtain sufficient prey is a matter of debate and ongoing research. The extent to which past fishing practices, natural oceanic regimes, and climate disruption are affecting productivity in and around the NWHI atoll and island ecosystems is not clear. It also is not clear whether or how these ecosystems might be modified to provide better foraging opportunities for young seals. Two hypothetical approaches have been considered—reducing competition from other predators (e.g., ulua) and increasing production of prey species (e.g., octopus, lobster).

The idea of modifying a marine ecosystem generates all sorts of reactions, for and against, on cultural, aesthetic, and scientific grounds. Nonetheless, the potential for such modifications should not be excluded from consideration at this point. If the current declining trend of the monk seal population continues, ecosystem-based management measures, if found to be feasible, may become necessary to conserve the seals and maintain the diversity of the atoll and island ecosystems of which they are a part.

Such measures would require a well-considered and well-presented rationale. The individuals and groups that might be involved in developing or reviewing an ecosystem-based effort would require a number of years to examine the options, identify potential courses of action, and gain approval and support for them. Moving forward too quickly could generate resistance that inadvertently limits the number and types of options considered. At the same time, failing to begin the necessary background work could result in managers being ill-prepared to implement the measures when they are most needed.

The Service and its recovery partners are not ready to implement measures aimed at modifying NWHI ecosystems. Nonetheless, we should begin a discussion along those lines because, again, ecosystem-based measures may be the best chance we have of preventing the extirpation of the Hawaiian monk seal in the NWHI or its complete extinction. With that in mind, the Marine Mammal Commission recommends that the National Marine Fisheries Service consider including in the final programmatic environmental impact statement a discussion of the issues surrounding ecosystem-based management measures to improve conditions for juvenile seals and enhance their survival. Such a discussion would inform readers of the potential value of ecosystem modification as a conservation tool, make clear that it would require considerable preparation prior to implementation, and emphasize that it may be necessary in the not-too-distant future.

### **Developing new vaccines**

The introduction of infectious diseases poses high risk to monk seals in both the MHI and the NWHI. The draft statement identifies two viruses of particular concern: morbillivirus and West Nile Virus. Appendix D of the draft statement provides a detailed review of information on infectious diseases with particular reference to those viruses. It also describes the availability of vaccines, the need for monitoring for and preventing the occurrence of infectious diseases, further work needed to develop and test vaccines, and protocols for determining when and how related vaccines should be administered.

The draft statement indicates that a vaccine to inoculate monk seals against West Nile Virus has already been used safely with captive seals and is thus available for broad-scale use should it become necessary. However, a vaccine for morbillivirus has been tested on only one monk seal to date. In addition, the first criterion listed for triggering vaccination of wild seals against morbillivirus is a case of confirmed canine distemper in a domestic dog outside of quarantine in the MHI. Mongooses also are susceptible to canine distemper and it would be appropriate to expand this criterion to include the detection of any incidence of canine distemper in any species outside of quarantine in the MHI.

Accordingly, the Marine Mammal Commission recommends that, in the final programmatic environmental impact statement, the National Marine Fisheries Service (1) give high priority to further testing of a morbillivirus vaccine on captive monk seals to identify possible effects of the vaccine, and (2) modify the first criterion for triggering morbillivirus vaccination efforts on wild seals to include the detection of canine distemper in any species outside of quarantine in the MHI.

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

Sincerely,

A handwritten signature in blue ink that reads "Timothy J. Ragen". The signature is written in a cursive style with a large, looped 'T' and 'R'.

Timothy J. Ragen, Ph.D.  
Executive Director