

**MARINE MAMMAL COMMISSION**  
4340 EAST-WEST HIGHWAY, ROOM 905  
BETHESDA, MD 20814

29 January 2007

Mr. Chris E. Yates  
Assistant Regional Administrator for Protected Resources  
Pacific Islands Regional Office  
National Marine Fisheries Service  
1601 Kapiolani Boulevard, Suite 1110  
Honolulu, HI 96814

Dear Mr. Yates:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the National Marine Fisheries Service's Draft Recovery Plan for the Hawaiian Monk Seal and offers a number of recommendations and comments. Before providing those, the Commission would like to offer some observations that may help put our comments on the recovery plan into better context.

Background and Context

The National Marine Fisheries Service has been the lead agency to promote research and conservation of monk seals in Hawaii for more than two decades. In that time, a high-quality scientific research program has been developed and nurtured. Although there remain some important gaps in scientific knowledge about Hawaiian monk seal biology and ecology, the species now ranks among the better-studied marine mammals, a tribute to the Service and a number of collaborators. Nonetheless, the status of monk seals has continued to worsen.

The Commission believes that the monitoring and other research programs initiated and sustained by the Service have considerable value. The Commission certainly believes that management decisions should be informed by excellent and up-to-date science. However, we believe that it is at least as important at this time to aggressively develop, implement, and evaluate conservation measures that, cumulatively, have the potential to help reverse the monk seals' declining population trend. Without such action, the Commission fears that the Service may end up monitoring the demise of the species. The Marine Mammal Commission therefore recommends that the Service and other partners in the recovery program maintain research efforts to the extent possible but place highest priority on active conservation measures that may improve survival and productivity of monk seals and thereby lead to the eventual recovery of the population.

The Commission recognizes that, in the face of finite funding, it is impossible to do everything that would be useful. Aggressive and adaptive management, necessary to conserve monk seals, must be accompanied by a continual increase in or updating of the knowledge base to inform decisions. Nonetheless, the Service should consider the extent to which ongoing research or proposed new activities will substantially improve the prospects for the species' survival and recovery. Achieving the optimal balance of research and conservation actions will take serious consideration, and the Commission would be pleased to assist as needed.

Recovery Plan: General and Specific Comments:

To return to the draft recovery plan, based on our review, we believe that it has many strong points but that organizational and editorial changes are needed if the document is to provide a useful basis for directing future Hawaiian monk seal recovery work. Further attention is needed in several important areas. These include providing clear, concise descriptions of needed recovery tasks, reexamining task priorities and funding estimates, and placing additional emphasis on research and management actions aimed at fostering growth of a monk seal subpopulation in the main Hawaiian Islands. Finalizing and implementing a well-conceived recovery plan at this time could hardly be more important. Given the species' precarious and declining status, it is critical that the recovery plan provide clear guidance for accomplishing both effective and cost-effective actions. Toward this end, we offer a number of recommendations. The major ones are summarized briefly here, and they are explained in greater detail in the attachment to this letter.

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

- place highest priority on funding actions that (a) are likely to contribute directly to the species recovery by increasing survival rates, particularly of adult and juvenile females, and (b) promote the protection and recovery of monk seals in the main Hawaiian Islands;
- expand the Executive Summary to identify reduction of prey resources as a threat to Hawaiian monk seal recovery;
- adopt the proposed biological criteria for downlisting;
- use a three rather than four-category classification for “threats assessment” and link the definition of those categories to the definitions used to assign priorities to identified recovery actions;
- expand the threats assessment to identify explicitly the need for measures to—
  - assess and minimize human disturbance of monk seals and protect monk seal haul-out areas in the main Hawaiian Islands; and
  - assess and minimize impacts from scientific research conducted on monk seals;
- revise and expand section IV of the draft plan by deleting the background discussions under selected tasks and adding brief descriptions of the work that will be required to carry out each listed recovery task;
- add the following tasks to section IV:
  - conducting monk seal foraging studies in the main Hawaiian Islands;

Mr. Chris E. Yates  
29 January 2007  
Page 3

- preparing a report analyzing the results of all efforts undertaken to date to document and mitigate shark predation;
  - removing sharks known to be preying on monk seals;
  - developing a plan for guiding decisions as to when, where, and how monk seals in main Hawaiian Islands should be moved to reduce the risk of adverse interactions with people and to foster the development of seal colonies in relatively remote, protected areas; and
  - documenting and assessing procedures to protect seals that haul out on recreational beaches (e.g., establishing seal protection zones);
- consult with the Hawaiian monk seal recovery team to consider suggested revisions, including those attached here, on assigned priorities and projected funding estimates in the implementation schedule; and
  - examine the projected funding estimates in the implementation schedule and distinguish between those costs that the Service considers to be part of the core monk seal recovery program—and thus appropriate for authorization under the Endangered Species Act and Marine Mammal Protection Act—and those that would be more appropriately authorized under other statutes or be provided by other sources.

Thank you for the opportunity to review this plan. I hope these comments and recommendations are helpful. If you or your staff has questions, please call.

Sincerely,

A handwritten signature in black ink, appearing to read "John E. Reynolds III". The signature is written in a cursive, flowing style with a long horizontal stroke at the end.

John E. Reynolds III, Ph.D.  
Chairman

Attachment

## **Specific Comments and Rationale for Marine Mammal Commission Recommendations on the Draft Seal Recovery Plan for the Hawaiian Monk Seal**

**Cover figure:** The legend for the figure should make it clear that the numbers shown are for the Northwestern Hawaiian Islands (NWHI) only.

**Page iv, Executive Summary:** The introductory paragraphs appropriately emphasize the critical situation facing Hawaiian monk seals and include a very good summary list of threats that must be addressed in order to reverse the species' long-term decline. It notes that "recovery of the Hawaiian monk seal depends upon a range of comprehensive actions detailed in this recovery plan...[and that] these actions should be pursued aggressively to prevent the extinction of this species." We fully agree with these statements but believe that it also should be noted that highest priority must be given to actions that contribute directly to mitigating impacts and sources of mortality that reduce survival rates of monk seals, particularly females and juveniles. The Marine Mammal Commission therefore recommends that the last sentence of the third paragraph be expanded to read something such as the following:

These actions should be pursued aggressively to prevent the extinction of this species, and funding decisions should give highest priority to actions that will contribute directly to mitigating impacts and sources of mortality that reduce survival rates of monk seals, particularly females and juveniles.

**Page iv, Current Species Status:** This paragraph notes that the current population size is approximately 1,300 animals. Elsewhere the draft plan notes that the best estimate of population size in the NWHI is 1,252 seals, a number that has been declining at a rate of 0.8 percent per year since the late 1990s. The best estimates of population size and trend should be noted in this paragraph. To the maximum extent possible, the summary of information on population size and trend in the text should correspond with the graph shown on the cover of the plan. It also should be noted, however, that the best estimate for the main Hawaiian Islands (MHI) is 52 seals, and abundance in that area appears to be increasing.

**Page iv, Paragraph 2:** This paragraph lists six significant threats facing the recovery of Hawaiian monk seals. A major threat that is not listed, but should be, is the reduction in available monk seal prey resources. Elsewhere the plan recognizes prey reduction as one of the species' greatest threats and a likely factor in the sharp decline in the species' largest colony at French Frigate Shoals. Although the causes of prey reduction are unclear, it has been suggested that it may be related at least in part to regional oceanographic and climate changes—possibly associated with long-term climate cycles in the North Pacific region—that altered the NWHI marine ecosystem and reduced abundances of lobsters and possibly other prey items. On a larger scale, there also is evidence that coral reef ecosystems worldwide are experiencing adverse effects due to global warming. Given such global changes, it seems possible that such underlying factors, in combination with regional climate cycles, also may be contributing to the suggested climate-related effects on monk seal prey abundance.

We also note that the penultimate concern on the list of major threats for monk seals reads as follows: "Habitat loss has decreased available haulout and pupping beaches." We agree that this is a significant recovery issue but note that its underlying cause, such as that suggested for reductions in monk seal prey availability, may be related to climate change. That is, a rising sea level due to global

warming is likely a significant factor explaining the loss of low-lying sand islands used by monk seals in the NWHI. To reflect concerns about monk seal prey availability and to recognize that climate change may be an underlying cause for both the erosion of haul-out beaches and reductions of monk seal prey, the Marine Mammal Commission recommends that the penultimate concern on the list of significant recovery threats be revised to read something such as the following:

Hawaiian monk seal haul-out and pupping beaches are being lost to erosion, and monk seal prey resources in the NWHI may have been reduced as a result of climate cycles, global warming, and other factors.

**Page v-vi, Recovery Strategy:** This section lists four primary actions needed to promote monk seal recovery. We concur with this list. The end of the second item seems to be missing a word. Presumably, it should read something such as "...but also to carry out active management and conservation of Hawaiian monk seals subpopulations in these areas."

**Page vi, Downlisting Criteria:** This section notes that Hawaiian monk seals could be considered eligible for reclassification as "threatened" when (1) their number in the NWHI reaches 2,900 animals, (2) at least five of the six major NWHI breeding colonies number more than 100 animals and the MHI population exceeds 500 animals, and (3) the population size at each of the major breeding colonies in the NWHI and in the MHI is not declining. The Commission believes that these criteria are appropriate, and we support their adoption.

**Page vi-vii, Threat-based Criteria – Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range:** Discussion of this criterion considers the destruction or loss of habitat in the NWHI but does not consider factors limiting the use of habitat in the MHI. To ensure that essential haul-out habitats are adequate to support 500 or more seals in the MHI, as called for in the downlisting criteria, the Marine Mammal Commission recommends that language such as the following be added under this criterion:

Management measures are in place to (1) minimize human disturbance of monk seals hauling out on beaches in the MHI, and (2) protect major monk seal haul-out habitat in the MHI.

**Page vi-vii, Threat-based Criteria – Overutilization for Commercial, Recreational, Scientific and Educational Purposes:** The first bullet under this criterion states that "this threat is not a crucial limitation to the Hawaiian monk seal recovery, and research to date has found no detectable effects of handling and instrumentation on survival or behavior." To the best of our knowledge, this statement is true; however, it does not identify what must be done to ensure that future research and monitoring activities have no more than negligible effects on monk seals. Precautionary research procedures as well as data collection and analyses to detect possible impacts are necessary to ensure that studies do not adversely affect monk seals, and the Marine Mammal Commission therefore recommends that this statement be replaced with language such as the following:

Procedures, including data collection and analyses, are in place to evaluate and ensure that scientific research on Hawaiian monk seals, including their observation, handling, and instrumentation, will not cause significant adverse impacts on monk seal survival, behavior, or population growth.

In this regard, if it is not already done, forms for collecting data in the field should include space for recording any information with regard to evidence of seal disturbance during the course of research and the identification of the involved seals. Such information would be helpful for assessing evidence of both acclimation to research activities as well as subsequent behavior alterations or cumulative effects.

For similar reasons, and also to ensure that scientists studying other components of the NWHI ecosystem do not incidentally affect Hawaiian monk seals, the Marine Mammal Commission recommends that the third bullet under this topic be revised to read something such as the following:

Management measures are in place to ensure that people, including scientists and research teams, visiting the Midway Islands or any other atoll in NWHI do not disturb monk seals or restrict their haul-out habitat in ways that could adversely affect monk seal survival, behavior, or population growth.

**Page vi-vii, Threat-based Criteria – Disease or Predation:** The word “management” in the beginning of the third bullet under this topic should be changed to “research.”

**Pages vii-viii, Actions Needed:** This section lists 14 needed actions. Item 4 notes a need to “reduce exposure or spread of infectious disease.” Because disease effects currently appear to be low, and the principal concern is a potential increase in the future, this item should be changed to read something such as “Minimize the risk of exposure to or spread of infectious disease.” We also suggest that item 13 be expanded to read, “Create and implement an MHI Hawaiian monk seal management plan” (add underlined words). As discussed below, we also suggest that item 14 be changed to read, “Implement the Hawaiian monk seal recovery plan,” with major administrative needs (e.g., maintaining staff and funding for research and management work, convening recovery team meetings, periodically updating the recovery plan, etc.) listed and described under that item.

**Page viii, Estimated Cost of Five-Year Recovery Program:** As discussed in our comments on the implementation schedule, we believe that the cost estimates provided in this plan should distinguish between those that could be considered part of the core monk seal recovery program authorized, and thus funded, under the Endangered Species Act (ESA) or the Marine Mammal Protection Act (MMPA), and those that would offer important benefits for monk seals but that would be funded more appropriately under other statutes or from other sources (e.g., completing restoration of the seawall at Tern Island). Either this table should be expanded or new text should be added to identify and separate annual costs for both the core recovery program and other related funding needs.

**Pages 18-19, Summary of Current Abundance:** This is a critical part of the plan, and it is important that it be understandable and consistent. As currently written, there are several errors and inconsistencies that should be corrected. First, readers are referred to Table I.C.2 for the summary of abundance estimates that is based on 2002 figures. The first bullet elaborating on that table, however, cites an abundance estimate for the main NWHI breeding colonies (i.e., 1,252 seals) that is based on 2005 data, which differs from the total for those colonies in the table (i.e., 1,156 seals). It is apparent that a new population estimate based on 2005 data is available, and we suggest that the new figures be inserted into Table I.C.2. If an estimate based on 2005 data is not available for some areas (e.g., possibly the MHI), the most recent estimates should be provided with a notation as to the date of those estimates. Second, there is an editing or typographical error in the abundance figures for Nihoa Island cited in the second line of the second bullet. Third, the fourth bullet is poorly worded and should be rewritten for clarity. Finally, the first sentence of the last paragraph of this section (page 19) states that the best estimate of total population size in 2005 is 1,252 seals. As noted above, however, bullet one on page 18 states that the abundance estimate for just the NWHI is 1,252 seals. These figures should be reconciled.

**Page 23, Figure 1.C.9:** The explanation for open and filled circles used in the figure is incomplete. Presumably, it should note that filled circles indicate reliable historical counts. Also, much of the text in the caption does not appear to belong there. The description of the figure in the caption should end after the word “sub-populations” in line two.

**Page 29, Marine Habitat:** The words “in the marine environment” at the end of the first line of this section should be changed to read “in the water.”

**Page 31, Figure I.E.1:** The word “Sighting” should be deleted from the caption since these locations were obtained from remote telemetry, not actual sightings.

**Page 31, paragraph 1:** The reference to flounder productivity in the next to the last sentence seems confusing, out of place, and unnecessary. We suggest it be deleted.

**Pages 33 to 69, Threats Assessment:** This section is a crucial part of the recovery plan. However, as presently constructed, it is very difficult to follow, and we believe it will be of limited value unless it is reorganized and revised. Its construction is very different from that used in other recent recovery plans adopted or drafted by the Service (e.g., those for North Atlantic right whales, fin whales, sperm whales, and Steller sea lions). Each of those plans has a section on threats (or factors potentially affecting the population) that is organized by the nature of the threat. In the draft plan for Steller sea lions, that section is followed by a well-documented threats assessment. The corresponding sections in the draft monk seal plan include a comparatively brief, poorly documented threats assessment followed by a description of threats organized by the five ESA listing factors. Although this may be an attempt to modernize how information is packaged and presented, the result is awkward and appears to be less useful. We therefore suggest that this section be changed to conform with the format used for the other recent plans developed by the Service.

**Pages 33 to 35, Threats Assessment:** As noted earlier, the section of the plan that constitutes the actual threats assessment should follow, rather than precede, the section presenting background information on the nature of the threats, their known or suspected impact on the population, and relevant mitigation actions taken to date. The threats assessment itself should describe the methods that are used to determine how each individual threat is categorized in the assessment. In this regard, the draft plan states that the assessment was “based on severity and magnitude, as well as the scope and geographic range” of the threat. This explanation is not sufficient to understand how the assessment was actually done. In our opinion, the description of threats and the threats analysis in the draft Steller sea lion recovery plan were well done, and we suggest that it be used as a template for this plan.

This section briefly identifies 11 monk seal recovery threats and classifies them into four categories: “crucial,” “significant,” “serious,” and “moderate.” As noted above, the Commission feels that the categories are not well defined, and it is unclear how the identified threats were classified. Although we generally understand and agree with the first and last categories (i.e., crucial and moderate), the difference between the two middle categories is unclear and seems unnecessary. We also would consider human interactions, and perhaps biotoxins to be a potentially greater threat than habitat loss—particularly given that increased shark predation, considered a possible result of habitat loss, is listed separately under a higher category. The Marine Mammal Commission therefore recommends that (1) the two categories entitled “significant” and “serious” be combined into a single category labeled “serious” (2) definitions or criteria be provided for each of the identified threat classification categories, and (3) those definitions or criteria be linked to the priority definitions used to rank recovery tasks in the implementation schedule.

The final paragraph of this section states that the threats assessment “is a valuable tool.” The Commission agrees that this could be the case; however, we are unable to see how the results of this assessment were used in later sections of the plan to evaluate and focus potential recovery actions. As currently written, there appears to be no direct connection between the categorization of threats in this section and the assignment of priorities to recovery actions in the following text and implementation schedule. This paragraph also attempts to provide rationale for an organization based on the five ESA listing factors; however, we do not find that such an organization provides either continuity or improved understanding. As noted, we feel that an organization such as that in other recent recovery plans would be much better.

**Page 37, Competition with Fisheries:** The second sentence of this section states that “there is no direct evidence that prey depletion by fisheries has affected the demography of any seal population.” It is not clear what, if any, “direct” evidence of prey depletion effects would be possible. That is, because such effects occur through indirect means, it would appear that evidence of fishery-related prey reduction would have to be based on indirect spatial and temporal correlations between overfishing, declines in removed fish stocks, and trends in seal population parameters, such as abundance, growth rates, condition indices, and reproduction. We therefore suggest that this sentence be deleted or that the paragraph be expanded to identify what “direct” evidence of fishery-related prey reductions might be expected. It also would seem appropriate to note that there appear



to be strong correlations in both space and time between the expansion of the NWHI lobster fishery, the collapse of NWHI lobster stocks, and declines in monk seal condition indices, juvenile survival rates, and abundance at French Frigate Shoals.

The first sentence of the second paragraph in this section states that monk seals feed “at locations several hundred kilometers from the atolls.” Although records may exist showing that seals occur at such distances, we know of no evidence to suggest that moving such distances to feed is common or even that it occurs at such locations. This statement should be corrected. This paragraph also states that “the lobster fishery is the only one known to take a prey item of the monk seal.” This statement is incorrect, especially if one considers all the recreational fisheries around the MHI. Finally this paragraph states that “fishery and environmental factors have significantly reduced the lobster resource.” We know of no evidence that would support a definitive statement that environmental factors have reduced the lobster resource. Either citations should be provided or the statement should be modified or deleted.

**Pages 38-39, Competition with Other Predators:** Because conclusions in the third sentence of the second paragraph of this section were based on estimates, rather than predictions, the beginning of that sentence should be changed to read, “Apex predators were estimated...” Also, the next sentence of that paragraph is incorrect. The only apex predators in Hawaii’s coral reefs that are as large as a monk seal are some of the larger sharks. All others, including ulua, are much smaller.

The fourth and fifth paragraphs of this section describing the results of a foraging workshop do not appear to belong in this section. Also, it is unclear what is meant by an “ethically” feasible hypothesis in point D of the fourth paragraph. In the fifth paragraph, it seems unnecessary to say that recommendations “... were not necessarily by consensus.”

**Pages 39-40, Habitat Loss:** This section discusses habitat-related factors applicable to ESA listing criterion number 1 (i.e., “present and threatened destruction, modification, or curtailment of habitat or range”). Although it describes factors related to habitat loss in the NWHI, it does not discuss limitations and factors affecting the availability of monk seal haul-out habitat in the MHI. It should be expanded to note that most beaches in the MHI that likely were used by monk seals historically are now used to varying degrees by people for recreational purposes. It also should note that reoccupation of the MHI by monk seals will depend in large part on the (1) effectiveness of efforts to protect seals from people and animals using popular recreational beaches, and (2) the extent to which seals are able to use beaches where human access is more limited.

**Page 40, Tern Island Seawall:** This section notes the number of monk seals that were trapped in the decaying seawall at Tern Island between 1988 and 2003. No information is provided on entrapments since the seawall was largely rebuilt in spring 2004. Although it is clear that the badly deteriorated seawall was a hazard to seals, it is unclear whether that is still the case. Figures for entrapments from 2003 to 2006 should be provided and used to assess the degree to which additional repairs might reduce entrapment risks.

**Page 40, Vessel Groundings:** The last sentence in paragraph two should provide a citation to support the assertion that cyanobacteria may affect monk seals, or the sentence should be deleted or modified. The last sentence of this section states that most boats in the MHI are small and less of a threat than boats in the NWHI. Clearly there are more and larger vessels in the MHI than the NWHI. This sentence should be deleted.

**Pages 41-42, Overutilization for Commercial, Recreational, Scientific, or Educational Purposes:** The first sentence of this section states in part that overutilization for scientific purposes has been determined not to be a potential threat to recovery. Although we agree it is not a current threat given the precautions that are in place, most seals are handled multiple times during their lifetime as part of research and monitoring efforts, and a potential for cumulative impacts therefore exists. This section should acknowledge this possibility of effects and identify the steps that are currently taken to ensure that monk seal observation, handling, and instrumentation have negligible impacts on animals and population growth.

**Page 42-43, Infectious Diseases:** The part of the first sentence of this section that reads "...live animals sampled when apparently healthy animals were necropsied in association with die-offs" makes no sense and needs to be modified. Also, the penultimate sentence of the second paragraph should refer to the "island of Hawaii" instead of the "Big Island," and someone should check to ensure that "repeated health surveys" is accurate.

**Page 44, Shark Predation:** The second sentence of the second paragraph of this section should refer to "probable" rather than "possible" mortalities.

**Page 45, Fishery Interactions:** The words "and policy making" in the first sentence of this section should be deleted.

**Pages 46-47, NWHI Bottomfish and Seamount Groundfish Fishery:** In the last sentence of the first paragraph of this section, the word "authorized" should be changed to "mandated." This section also notes that seven instances of hookings possibly attributed to this fishery have been identified. Based on those data, rates of hookings per year are cited. This section should be expanded to note that, because observer coverage of bottomfish fishing prior to 2004 has been low and because it is unlikely that all hookings are documented, the cited rates are likely minimum estimates. Also, Caretta et al., which is a compilation of stock assessment reports, is not the proper citation for the referenced environmental impact statement. Finally, the last two sentences of the third paragraph in this section contain contradictory statements. In one it is stated that there were no hooking incidents and in the other it is stated that monk seals were observed hooked. This should be resolved.

**Page 48, The Coral Reef Ecosystem Fishery Management Plan:** In the last sentence of the second paragraph of this section, the words "and recently proclaimed NWHI Marine National Monument (71 FR 51134, August 29, 2006)" should be deleted. That action had not been taken when the decision being described was made.

**Page 53, last line:** The words “may be” should be replaced with “are.”

**Page 55-56, Human Interactions:** The second sentence of the fifth paragraph should be changed to read, “In the past, some beaches...” Also, the caption for Table I.G. contains several errors. The beginning of the caption should read, “The following are data for recent years when...”. Also, the figures are all known pup births in the MHI, not just those “on heavily traveled or otherwise high human use beach areas.” As far as we know, most if not all of births on Niihau, Molokai, Kahoolawe, and Hawaii were not on high-use beaches, and the same is the case for some of the births on Kauai, Oahu, and Maui. To be useful, this table should show only those cases that actually involved high human-use areas and that required intensive management attention.

**Page 58, Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range – Habitat Protection:** This section describes conservation efforts to ensure that essential monk seal habitats are protected. It discusses measures taken to protect habitat in the NWHI, but it does not discuss relevant measures in the MHI. This section should be expanded to identify steps that have been and are being taken to ensure that haul-out beaches in the MHI are available for use by Hawaiian monk seals (e.g., the workshop on managing monk seals on beaches in the MHI, hiring island monk seal haul-out coordinators to monitor hauled-out seals and prevent sources of human disturbance, establishment of volunteer monk seal monitoring groups, establishment of seal protection zones around seals on recreational beaches, etc.). Also, although the sections describing protections that have been put in place in the NWHI briefly describe limitations on fishing and other human access, they do not, but should, describe other provisions that limit things such as discharges from vessels.

**Page 58-59, Contaminants Mitigation:** The second paragraph of this section has nothing to do with contaminants mitigation, which is the title of this section. It should be deleted or moved to another more appropriate section.

**Pages 59-60, Overutilization for Commercial, Recreational, Scientific, and Educational Purposes:** This section describes conservation work related to commercial, recreational, scientific, and educational uses of Hawaiian monk seals. It should be expanded to identify the permit process and types of conditions placed on marine mammal research activities under MMPA and ESA permits. For example, researchers undertaking any studies that may result in the taking of a Hawaiian monk seal must obtain a permit from NMFS, that is reviewed by the Marine Mammal Commission and is determined to have no more than a negligible impact on the affected populations. It also would be helpful to cite examples of precautionary research protocols that help ensure observations, handling, or instrumentation of monk seals meet those standards. In addition, this section should note new permit systems that are being required for scientific research and other activities in the NWHI under the newly designated NWHI Marine National Monument and the NWHI State Marine Refuge.

**Page 61, Shark Predation Mitigation:** The last line of the first paragraph in this section should be revised to read “...from 28 in 1997 to 3 in 2003.” In the second sentence of the second paragraph,

the word “placed” should be changed to “displaced.” Also the meaning of “minimal false starts” in the penultimate sentence of the second paragraph is not clear and should be explained or reworded.

**Pages 61-62, Fisheries Interaction Mitigation:** This section deals entirely with mitigation actions in the NWHI and does not, but should, discuss the need for mitigation in the MHI. Particular attention should be given to the need to mitigate interactions with lay gillnets, recreational hook and line fishing, and aquaculture. Also, the last paragraph of the section starts with a discussion of state fishery limitations in the NWHI and ends with information on the bottomfish fishery, which is federally managed. This is confusing and should be reorganized.

**Page 64, first full paragraph:** There is something missing in the last sentence of this paragraph where it reads, “...were pro past management...”

**Pages 65-66, Mitigation of Entanglement:** This section states in one place that more than 470,000 kg of debris was removed from NWHI coral reef habitat between 1996 and 2003, but in another place that 442 metric tons was removed between 1996 and 2004. These figures should be checked for accuracy and consistency. Also, the acronym “CRED” is not defined.

**Page 66, Biotoxins Mitigation:** This section should be expanded to reference efforts to develop a monk seal die-off contingency plan, which was designed, in part, to respond to biotoxin-related monk seal die-offs.

**Pages 66-69, Education and Outreach:** This section includes more detail than is necessary on NMFS’ efforts to prepare and distribute outreach materials. A more concise overview of related efforts by both NMFS and its collaborators would be more effective and useful.

**Pages 69-71, Recovery Strategy:** This section notes that many significant recovery actions already have been taken but that even greater effort is now needed. With regard to past accomplishments, the list in the second sentence should be expanded to note that significant progress has been made to prevent direct and indirect interactions with commercial fisheries in the NWHI. With regard to future needs, this strategy highlights four areas that the Service believes merit greatest attention and priority: enhance female survivorship, maintaining or expanding NWHI field camps for basic population monitoring, implementing steps to ensure recovery of seals in the MHI, and minimizing the chances of diseases being introduced and spread to wild monk seals. The Commission agrees with this list but believes that it should be expanded to explicitly include removal of marine debris from offshore reefs.

**Pages 71-73, Recovery Criteria for the Hawaiian Monk Seal:** The second paragraph of this section calls for improving and modifying the existing monk seal population model to allow its eventual use as a tool for population viability analysis (PVA). We agree that this is important and that future recovery criteria based on a PVA model eventually may prove to be an appropriate and useful replacement for criteria presented in this plan. In the interim, as noted earlier, we believe the proposed “biological criteria” are appropriate and that they should be adopted. We also agree with

the identified “threat-based criteria,” but as noted, we recommend some modifications and additions to criteria 1 (present or threatened destruction, modification, or curtailment of its habitat or range), 2 (overutilization for commercial, recreational, scientific, or educational purposes), and 4 (inadequacy of existing regulatory mechanisms).

**Pages 74-94, Recovery Actions:** This section of the draft plan identifies research and management actions necessary to recover Hawaiian monk seals. For many of the actions identified, the title of the recommended action is given, but there is no description of the work that would be involved. Also, text has been inserted under some headings in what appears to be a haphazard manner relative to the task outline. Where discussion has been provided, it usually reiterates background information provided elsewhere in the plan, describing the issue to be addressed and why it is important. This section of the plan needs to briefly and clearly describe what specifically is involved in carrying out each identified action item, rather than reiterating background information. Without such information, it is not possible to assess whether cost estimates provided in the implementation schedule are reasonable or precisely what those funds would be used to support. The Marine Mammal Commission therefore recommends that this section be rewritten to provide a brief description of the work required to accomplish each specific task for which funding or staff effort is required. The corresponding section of the recently released Steller sea lion recovery plan provides a useful model for this section of the monk seal plan. As we discuss later, we also recommend that a number of the assigned priorities be revised. In regard to priorities, the conclusions of the threats analysis should be used in this section to help determine the priority to be given to each action item.

**Pages 74-77, Investigate and Mitigate Factors Affecting Food Limitation:** This section discusses the need for studies to document and assess possible effects of food limitation on individual seals and the demography of local seal colonies. It recommends the development of a foraging ecology research plan and identifies the types of studies that should be included in that plan. Based on results of studies undertaken under that plan, it also recommends that consideration be given to moving juvenile seals from areas where prospects for foraging success may be relatively poor to areas where prospects appear better. The Marine Mammal Commission believes this is one of the highest priority needs.

Task 1.1 under this section reads as follows: “(d)velop a comprehensive Hawaiian monk seal foraging ecology research plan with particular emphasis on juveniles; define diet by age, sex, location, season, (variety of methods) and characterize feeding areas quantitatively (with CRITTERCAM, video technology).” This task should be split up into at least two tasks—one related to plan preparation and one or more on field research to carry out needed work. The implementation plan indicates that developing a new foraging research plan would be a two-year task. The Commission believes this time frame is appropriate and that the types of studies identified in the title of this and other tasks generally address the highest priority needs. One point that the foraging plan should address is where to carry out these studies, given resource limitations. One of the areas where we believe such studies should be undertaken is in the MHI. Although food does not appear to be a limiting factor in the MHI, such studies are important for implementing management actions, particularly with regard to deciding where to move juvenile seals and, to the

extent possible, where to encourage the development of monk seal colonies. The Marine Mammal Commission therefore recommends that this section be expanded to note the importance of foraging studies in both the NWHI and the MHI.

**Pages 76-77, Prevent Entanglement of Monk Seals:** This section identifies the need to continue efforts to disentangle monk seals and remove hazardous debris from monk seal habitat. The Commission agrees that these are priority needs. To provide a better basis for assessing the overall frequency of entanglements, it might be useful to consider conducting a year-round monitoring effort at one or more locations (e.g., Lisianski Island). This could provide a basis for estimating the number and rate of entanglements in seasons when field camps are not normally present and the potential value of having people present on a year-round basis to disentangle animals. Periodic year-round field sites at some locations also could help improve data on other population characteristics.

**Pages 77, Reduce Shark Predation:** The Commission concurs with the actions and assigned priorities identified in this section. In addition, if it has not already been done, the Marine Mammal Commission recommends that the Service identify a task to prepare a summary report that describes and analyzes the results of all efforts undertaken to date to document and mitigate shark predation on monk seals. In part, that report should clarify the extent to which apparent reductions in shark predation at French Frigate Shoals since 1999 are correlated with shark removal efforts, the proportional decline in the number of pups born, and the redistribution of monk seals at the atoll due to habitat loss and management activities.

**Pages 78-79, Reduce Exposure and Spread of Infectious Diseases:** This section describes monitoring and mitigation actions related to the risks of exposure and spread of infectious diseases among Hawaiian monk seals. As noted earlier, the word “minimize” rather than “reduce” would be more appropriate in the title of this section. Also, an additional mitigation measure that merits consideration is moving MHI monk seals from areas where risk of exposure to some diseases may be greater to areas where disease risks might be lower (e.g., the base of cliffs or relatively remote islands). Although efforts to move seals away from population centers clearly would be neither appropriate nor possible in all cases, to the extent that local colonies can be encouraged in relatively remote areas where interactions with dogs, cats, and other animals can be limited or minimized, the risk of seals contracting and spreading diseases also might be minimized. This section might therefore be expanded to consider identification of areas where disease risks are lowest and that might serve as optimal locations for future monk seal colonies.

**Pages 79-80, Conserve Hawaiian Monk Seal Habitat:** The first sentence of this section states that monk seal habitat encompasses areas with 200 km of their resident islands. Although this may be true for the NWHI, normal ranges in the MHI appear to be smaller. This section should be expanded to clarify what is known about typical habitat ranges for monk seals in the MHI. With regard to habitat protection in the MHI, the Marine Mammal Commission also recommends the addition of an action under section 5.4 reading something such as the following:

Strengthen cooperative efforts with agencies and organizations responsible for managing beach areas where local groups or colonies of monk seals may become established in the MHI to ensure that measures are in place to avoid disturbance or displacement of seals that haul out to rest, pup, or molt.

**Pages 81-82, Reduce Hawaiian Monk Seal Interactions with Fisheries:** In the first full paragraph on page 82, mention should be made of aquaculture operations for kahala (also called kampakche), which are ongoing and expanding off the island of Hawaii. The first sentence of the next paragraph should be changed to read "...closed the NWHI lobster fishery due to uncertainty in the model assumptions used to estimate allowable harvests and reduced lobster stocks." (Add underlined words.)

**Pages 82-83, Reduce Male Aggression toward Pups/Monitor Seals and Adult Females:** Item 7.1.1 (identify aggressive males) presumably should be labeled a research activity ("R"), rather than an intervention activity ("I").

**Pages 84-85, Reduce the Likelihood and Impact of Human Disturbance:** In part, this section identifies the possibility of seeking an enhancement permit to capture and relocate mother/pup pairs from populated beach areas to more remote areas in the MHI. The Commission supports this effort but suggests that it be part of a broader, carefully thought out initiative designed to promote the development of monk seal colonies in relatively remote areas while discouraging colony development in areas of high human use. In this regard, we suggest that a plan be developed that considers the following: the effectiveness of moving seals of different ages and sexes; the procedures that should be used to ensure the well-being and safety of seals and people involved in moving the seals; steps to monitor the movement, behavior, and survival of seals after being moved; optimal locations to which seals might be moved; and related research needs. With regard to identifying possible seal relocation sites, factors that should be considered include the extent to which new locations are protected, their distance from foraging grounds, and their isolation from potential sources of disease and infection. The plan also should identify criteria for measuring the success or failure of such translocation efforts, including sample sizes and effects on seal distribution, etc. Efforts to move seals undoubtedly will require the support and approval of numerous parties, including the owners of beaches to which seals are moved. The preparation of such a plan would help lay the groundwork necessary for making decisions quickly when cases calling for the relocation of seals arise. To reflect such an effort, the Marine Mammal Commission recommends adding language such as the following as a subtask under section 8.2 or, alternatively, as a separate subtask under efforts to create an MHI Hawaiian monk seal management plan (i.e., pages 91-93).

Develop a monk seal pupping and haul-out intervention plan to determine if, when, where, and how monk seals might be moved to reduce risks of potential adverse interactions between seals and people in the MHI.

In addition, we note that an important measure currently being taken to prevent human disturbance of seals hauling out on popular recreational beaches involves posting temporary seal protection

zones around hauled-out seals. Although this effort appears to be important and helpful, studies should be undertaken to document and assess procedures and factors that influence the effectiveness of this approach (e.g., the size of areas around seals, the presence of seal monitors at the site, the types of information that increase compliance with protection boundaries, etc.). The results of such a study would provide a basis for evaluating how effective seal protection zones are and for refining procedures on when and how to establish such zones. The Marine Mammal Commission therefore recommends the addition of a task in this section to document and assess procedures for protecting seals that haul out on recreational beaches.

Also, the goal identified in item 8.5 to minimize impacts of development is at least as important for the MHI as for the NWHI, and a statement should be added describing what needs to be done in the MHI.

**Pages 85-86, Investigate and Develop Response to Biotxin Impacts:** Experience with effects of red tides on Florida manatees indicates that there can be opportunities to detect and rehabilitate animals affected by natural biotoxins before animals receive lethal doses. Lethal exposure of monk seals to biotoxins apparently is rare; however, it might be possible to rescue some animals if exposure can be detected early enough and facilities for holding animals can be made available. This section therefore might be expanded to consider possible steps for detecting, capturing, and rehabilitating monk seals affected by biotoxins.

**Pages 86-88, Reduce Impacts from Compromised and Grounded Vessels:** This section notes that vessel groundings can cause the release of chemicals and other materials hazardous to monk seals and that capability for a rapid response is needed. As written, the section appears to be concerned exclusively with vessel groundings in the NWHI. Oil spills and release of hazardous materials from grounded vessels also are concerns in the MHI. Either this section, or the following section on contaminants, should be expanded to clarify that such concerns apply to both the NWHI and the MHI.

**Page 91, third paragraph:** This paragraph notes that serious consideration should be given to using models to assess proactive management measures, such as the removal of predators or competitors for food. As a general matter, we do not believe that removing natural competitors for prey will be a realistic way to promote monk seal recovery. We therefore suggest that the phrase “competitors for food” either be deleted or modified to read “human competitors for food.”

**Pages 93-94, Implement Education and Outreach Programs:** This item should be broadened to something such as “Implement the Hawaiian Monk Seal Recovery Program.” Implementing an education and outreach program should be a sub-item in this larger category. Other sub-items should include the following:

- Maintain staffing needed to address management concerns in the NWHI and the MHI;
- Maintain a research program in the NWHI and the MHI sufficient to provide the information required by managers;



- Provide adequate funding for management and research activities;
- Maintain a Hawaiian Monk Seal Recovery Team and use the team to provide outside advice and review of actions needed to accomplish recovery; and
- Revise the Hawaiian Monk Seal Recovery Plan at appropriate intervals.

**Pages 95-108, Implementation Schedule:** The priorities and projected cost estimates in this table are among the document's most important planning features. As identified below, there are a substantial number of changes we would suggest with regard to task titles, priorities, funding levels, and comments. Note that our recommendations for changes to priorities are based on the criteria described on page 74 of the plan, e.g., to be considered a priority 1 an action must be necessary to prevent extinction. To ensure that information in this table is as useful as possible, the Marine Mammal Commission recommends that the Service consult with the Recovery Team to consider the following changes in the implementation schedule, along with changes suggested by other reviewers, and then revise information in this table as appropriate.

- *Task 1.1. Develop a comprehensive HMS foraging ecology research plan with particular emphasis on juveniles.* We suggest changing the priority for this task from 1 to 2. Also, this task should be numbered separately, rather than joined with task 1.1 (cont'd). Also, the cost estimate for FY3 presumably should be moved to FY2.
- *Task 1.1. (cont'd). Define diet by age, sex, location, and season, and characterize feeding areas quantitatively.* This should be identified as a separate task with a priority ranking of 2. The comment for this task presumably should be taken from part of the previous task.
- *Task 1.2. Assess and monitor prey abundance; study prey selection.* We suggest changing the priority for this task from 1 to 2. Studying prey selection presumably would be part of the task 1.1 and could be deleted from the title of this task.
- *Task 1.4. Define distribution of possible feeding areas and use of these areas.* It is not clear how this task differs from task 1.1 (cont'd), and the priority ranking seems higher than it should be.
- *Task 1.5. Evaluate demographic consequences in relationship to complex linkages between prey availability and foraging behavior.* We suggest changing the priority for this task from 1 to 2.
- *Task 1.6. Investigate competition with other top predators.* We suggest changing the priority for this task from 1 to 2.
- *Task 1.7. Investigate effects of oceanographic variability on prey abundance and availability and on foraging success.* We suggest changing the priority for this task from 2 to 3.
- *Task 1.9. Plan for the rehabilitation of malnourished juvenile seals when and where food limitation is apparent to salvage their reproductive potential.* Based on projected funding needs of \$180,000 per year for five years, it appears that work under this task involves more than just planning and that a revision of the task title is needed. In our view, this may be one of the most important actions that could be taken to address the potential effects of limited prey availability on juvenile survival and we strongly support its ranking as a priority one task.
- *Task 1.10. Conduct feasibility study to enhance lobster stocks.* It's not clear why conducting a feasibility study should require \$150,000 per year for five years. Also, we do not believe that funding for this work should be borne as part of the core monk seal program budget provided by the Service for the recovery of this species. Rather, funding for this work should be provided from

- a separate funding source authorized under the Magnuson-Stevens Fisheries Conservation and Management Act for work related to the restoration of overfished fishery stocks.
- *Section 2.2. Continue to remove potentially hazardous debris.* We do not believe that an organizational heading is an appropriate place to identify specific priorities, responsible agencies, task durations, funding levels, or comments. This information should be reserved for individual tasks. This is particularly important in later sections where priorities, responsible agencies, and task durations beneath that heading differ between tasks.
  - *Task 2.2.1. Continue focused clean-up effort on high entanglement risk zones in the water.* Although debris cleanup is important, funding for this work should not come from the core monk seal recovery program budget but instead should be provided from a separate funding source authorized by NOAA's Coral Reef Conservation Program and/or its Marine Debris Removal and Prevention Program.
  - *Task 2.2.2. Monitor marine debris accumulation rates and identify areas of greatest potential risk.* It should be noted that funding for this work should not come from the core monk seal recovery program budget but instead be provided from a separate funding source authorized by NOAA's Coral Reef Conservation Program and/or its Marine Debris Removal and Prevention Program. The priority for this task also should be changed from 1 to 2.
  - *Section 2.3. Reduce the amount of marine debris.* As an organizational heading, the indicated priority should be deleted. Also, it is not clear why debris removal efforts are not included under this heading.
  - *Task 2.3.1. Identify sources of marine debris.* Funding for this work should not come from the core monk seal recovery program budget but instead should be provided from separate funding sources authorized by NOAA's Coral Reef Conservation Program and/or its Marine Debris Removal and Prevention Program.
  - *Task 2.3.2. Implement education and marine debris programs targeting identified sources.* Funding for this work should not come from the core monk seal recovery program budget, but instead should be provided from separate funding sources authorized by NOAA's Coral Reef Conservation Program and/or its Marine Debris Removal and Prevention Program.
  - *Section 3.2. Remove problem sharks.* The title should be changed to read something such as "Mitigate shark predation." As an organizational heading for specific tasks, it should not have assigned priorities or budget estimates and the indicated funding needs should instead be apportioned to the various tasks under this heading. We also suggest that the list of tasks under this heading be expanded to include a separate task for removal of known problem sharks.
  - *Task 3.2.3. Maintain needed permits for shark removal and/or other intervention.* The State of Hawaii should be added to the list of responsible agencies.
  - *Task 3.2.4. Be prepared for rapid response to predation events.* Funding estimates for this task are \$250,000 for the first year and \$150,000 for each subsequent year. Such costs seem much too high to "be prepared" to respond rapidly to some unexpected predation event. Also it is not clear from the comment how remote cameras might be useful for monitoring "hot spots."
  - *Task 3.4. Characterize trends in shark abundance, movement patterns, and predation losses throughout the NWHI in relation to these interventions and conduct shark behavior research.* We suggest changing the

- priority for this task from 1 to 2. Also, there are no projected funding needs and the comment states that this task is included in section 3.2. It is not clear what this means.
- *Section 4.1. Reduce exposure of seals to diseases.* This is an organizational heading and the references to priority and responsible agency should be deleted.
  - *Task 4.1.2. Increase surveillance on Necker and Nihoa Islands, as these are the places where interactions between MHI and NWHI seals are most likely.* The comment about the source for funding in fiscal year 2005 is not relevant for purposes of this table and should be deleted.
  - *Task 4.1.3. Further develop protocols for improving early detection of diseases in seals by opportunistic sampling for diseases.* We suggest changing the priority for this task from 1 to 2.
  - *Task 4.1.4. Continue to examine sick animals in the NWHI and the MHI to determine causes of diseases and treat them appropriately.* Funding for this task is \$35,000 for the first year and \$7,000 for subsequent years. This level of funding seems far too low, and it is not clear why the need for support is expected to decline after the first year.
  - *Task 4.1.5. Develop and implement contingency management plans for known high-risk diseases.* No funding needs are projected for this task, and the comment suggests that this task is included under task 4.3. It would seem to make more sense to combine this task with task 9.1 for developing a contingency plan on biotoxins.
  - *Task 4.1.6. Evaluate the use of vaccines for monk seals to high-risk diseases.* We suggest changing the priority for this task from 2 to 1. Also, the title suggests that this task calls only for “evaluation,” but the project is indicated to continue for five years. If the intent is to actually apply vaccines to seals in the wild that should be clarified.
  - *Task 4.2. Determine the associations between reproductive failure, survival, and infectious diseases.* The implementation table suggests this can be done in one year at a cost of \$15,000. This seems unrealistic.
  - *Section 5.1. Maintain current habitat protection or ensure if status or jurisdiction changes that protection is not diminished.* This is an organizational heading. The priority, responsible agencies, and comment should be deleted.
  - *Task 5.1.1. NWHI National Monument must maintain proclamation provisions and should monitor human activity in the Monument through the use of observers, video recorders, and/or vessel tracking devices.* Funding for this task should not come from the core monk seal research and management budget, and the amount indicated seems unrealistically low. We suggest changing the priority for this task from 1 to 2.
  - *Task 5.1.2. Maintain current ESA Critical Habitat designations with possible extension as new data are collected.* The priority should be reduced from 1 to 2. In addition, it is not clear why this would require an expenditure of \$75,000 per year for five years.
  - *Section 5.2. Define terrestrial habitats by sex, age, and subpopulation.* As an organizational heading, priority, responsible agency, funding projections, and comment should be deleted, and funding should be apportioned as warranted among specific tasks. Also, the meaning of the comment is unclear.
  - *Task 5.3. Restore breeding habitat where appropriate; investigate rebuilding pupping habitat.* The implementation schedule indicates this is a one-year project that will cost \$50,000. Such an amount could not fund any meaningful efforts to “restore breeding habitat where appropriate.”

- *Task 5.4. Mitigate indirect anthropogenic impacts on monk seal NWHI and MHI habitat.* This is an organizational heading. The identified priority and responsible agency should be deleted.
- *Task 5.4.1. Complete removal of contaminants (a) and repair seawall (b) at Tern Island.* Part (a) of this task should be identified as a separate task and moved to section 11 (i.e., “reduce impacts of contaminants”). Also, it should be noted that the costs for parts (a) and (b) of this task (i.e., \$3.2 and \$7.8 million, respectively) should not be borne by the core Hawaiian monk seal recovery program budget. We suggest changing the priority for this task to 3.
- *Task 6.1.1. Identify procedures and technology to mitigate (fisheries) interactions.* We suggest changing the priority for this task from 1 to 2. Also, there should be a task to apply procedures and technology that are deemed useful, with a priority ranking of 2.
- *Task 6.1.2. Monitor potential interactions with marine aquaculture.* The priority for this task should be changed from 2 to 3.
- *Section 6.2. Reduce indirect interactions.* The word “fisheries” should be inserted between “indirect” and “interactions.”
- *Task 6.2.1. Continue closure of lobster fishery in the NWHI; NMFS should continue its annual long-term lobster resources assessment.* The first part of this task is addressed by task 6.2.2 and should be deleted. The annual costs for this task (\$1.5 million) seem much too high, and this cost should not be borne by the core monk seal recovery program budget. The comment that \$1.1 million is needed to augment ongoing work is not clear.
- *Section 7.1. Continue monitoring populations/tracking injuries, disappearances, and deaths.* This is an organizational heading. The identified priority, responsible agency, task duration, and comment should be deleted.
- *Task 7.2. Monitor population with unknown injuries by extending/increasing field effort if necessary to identify causes.* We suggest changing the priority for this task from 1 to 3.
- *Section 8. Reduce the likelihood of impact of human disturbance.* This is an organizational heading. References to task duration, costs, and the comment should be deleted and covered under a separate task if not already addressed.
- *Task 8.1. Reduce inadvertent disturbance of monk seals in the NWHI and MHI using appropriate education tools targeting user groups, etc.* The priority of this task should be reduced from 1 to 2. Also, the cost of \$800,000 per year seems much too high for education and coordination.
- *Task 8.2. Investigate feasibility of translocating mother/pup pairs from high public use areas to remote locations and, if feasible, consider the use of an ESA enhancement permit to authorize this activity when adequate protection for the pair cannot be provided by other means.* This task should be split into two tasks with estimates of funding needs provided for (1) investigating the feasibility of moving mother/pup pairs and (2) developing an enhancement permit if necessary.
- *Task 8.3. Continue permitting requirement and training process for all NWHI travel to facilitate reduction of human disturbance at breeding sites.* The costs for the permitting process and training process for people visiting the NWHI should not be borne by the core monk seal recovery program budget except as it applies to monk seal researchers. The priority for this task should be reduced from 1 to 2.
- *Task 8.6. Determine if handling associated with the application and removal of telemetry and data-logging devices alters the behavior or hauling site preferences of seals.* The priority of this task should be reduced from 2 to 3.

- *Task 9.1. Develop a contingency plan to manage a biotoxin dieoff in monk seals.* This task should be combined with task 4.1.5 for developing a contingency plan regarding known diseases, and a cost estimate for developing a combined plan should be identified. Also, we understand a contingency response plan addressing this need has already been developed. If so, the cost should be relatively low. Presumably, development of a plan would not be an ongoing cost as is suggested by the table.
- *Task 9.3. Investigate biotoxin dose/response effects on monk seals through opportunistic sampling and retrospective studies.* The comment states that \$100,000 is needed for an assay in addition to costs for annual testing and monitoring. The cost for developing an assay, however, is addressed in task 9.2. Is this cost counted twice?
- *Task 9.4. Develop a collaborative link with Harmful Algal Bloom Monitoring Program, for detection of potential toxic blooms.* The cost seems too high for “developing a collaborative link,” and it should not take five years for such a link to be developed. Is it being suggested that the monk seal program support a harmful algal bloom sampling or analysis program? If so, the cost for this task should not be borne by the core monk seal recovery program.
- *Task 10.1. Establish a notice to mariners advising of the presence of monk seals, critical habitat for the monk seal, and the penalties available related to the take of monk seals under the ESA and MMPA.* The first year cost for this task (\$75,000) is too high. The responsible agency should be the Coast Guard and, as a general matter, the Coast Guard should be identified as a responsible agency for most of the tasks in section 10.
- *Task 10.3. Develop an educational and outreach campaign aimed at minimizing impacts to HMS and their habitat during these events. Insurance companies can be used to distribute educational materials to customers.* Presumably, “these events” refers to groundings. We doubt that information on risks to monk seals will make mariners more likely to avoid groundings and question the value of such a campaign. This should be part of a broader effort that could include monk seals but instead be focused on the navigational hazards and ecological sensitivity of the NWHI. The cost of this task should not be borne by the core monk seal recovery. The sentence regarding the role of insurance companies should be deleted.
- *Section 10.4. Provide a rapid response, removal, and ecological assessment and monitoring of vessel groundings.* This is an organizational heading. Identified priorities, responsible agencies, task duration, costs, and comments should be deleted. Costs should be apportioned into individual tasks if not already addressed and a new task should be added if envisioned work is not fully addressed.
- *Task 10.4.1. Identify and pre-place equipment on appropriate islands to ensure rapid response.* Costs for placing equipment to respond to groundings should not be borne by the core monk seal recovery program budget except to the extent that monk seal researchers or managers have accidents that require the use of that equipment.
- *Task 10.4.6. Immediately remove debris from a grounding that might result in entanglement of monk seals.* A comment is included with this task that states costs for this task are “part of the clean up cost.” It is unclear what source of clean up costs is being referenced.
- *Task 10.7. Use dedicated state funding to publish response plans.* It is unclear what response plans are being referenced. If they are the contingency plan to be maintained in task 10.4.5, it is unclear why these tasks are not combined.

- *Section 11. Reduce the impact of contaminants.* As noted above, part (a) of task 5.4.1 would make more sense if included in this part of the plan.
- *Task 12.1. Continue annual monitoring in the NWHI.* The \$1.3 million cost for this work represents a major part of what we believe should be part of the core monk seal recovery program budget. We suggest this cost projection show incremental increases to reflect inevitable increases in operational and staff costs.
- *Task 12.2. Optimize survey techniques to observe all seals.* As an organizational heading, identified priorities, responsible agencies, task duration, and comments should be deleted.
- *Task 12.2.2. Identify seals that move between subpopulations.* We suggest changing the priority for this task from 1 to 2.
- *Task 12.2.5. Adjust timing of annual field studies to optimize demographic data collected.* We suggest changing the priority for this task from 1 to 2.
- *Task 12.2.6. Assign pups to mothers using DNA methods.* We suggest changing the priority for this task from 1 to 2.
- *Task 12.3. Maintain and analyze data, report findings.* As an organizational heading, the priority and responsible agency should be deleted.
- *Task 12.3.1. Improve database accessibility and develop a database management manual.* We suggest changing the priority for this task from 1 to 2.
- *Task 12.4. Continue demographic modeling.* As an organizational heading, the priority, responsible agency, task duration, and comment should be deleted.
- *Task 12.4.1. Maintain monk seal population model.* As an organizational heading, the priority, responsible agency, task duration, and comment should be deleted.
- *Task 12.4.1.2. Incorporate MHI seal data.* It is unclear whether this task involves collecting data or simply “incorporating” data into the monk seal model. In either case, we believe separate tasks are needed to identify support for both collecting data and incorporating it into the monk seal demographic model. In this regard, we believe that many of the tasks identified in section 12.2 as being part of the NWHI monk seal research effort also will need to be done for monk seals in the MHI and that the cost for such work will be substantially greater than \$150,000 per year. We therefore suggest that a new section similar to section 12.2 be added to identify research needed to monitor monk seals in the MHI. With regard to adding MHI data into the monk seal model, we suggest that the priority for that task be changed from 1 to 2.
- *Task 12.4.2. Develop a PVA for monk seals.* We suggest changing the priority for this task from 1 to 2.
- *Task 12.4.3. Develop models linking foraging, diet, physical condition of seals and demography.* We suggest changing the priority for this task from 1 to 2. Also, we question whether information is currently sufficient to develop meaningful models regarding these relationships.
- *Task 12.5. Conduct hypotheses-driven ecological experiments to evaluate potential options for enhancing monk seal recovery.* We suggest changing the priority for this task from 3 to 2.
- *Task 13.1. Develop an MHI monk seal management and research plan that addresses all critically important assessment, disease, regulatory, intervention, coordination, and education needs.* The implementation schedule indicates that development of an MHI monk seal management plan would be a two-year project costing a total of \$50,000 and that plan implementation would be included in costs identified elsewhere in the plan. The time frame for this effort seems reasonable, but the cost

- estimate for plan development seems low, given potential travel costs for agency and non-governmental representatives from different islands and the likely need for multiple meetings. In addition, we question whether costs for activities under a plan that has not yet been developed would be adequately covered under costs identified in this plan. The Marine Mammal Commission therefore recommends that funding estimates for years 1 and 2 of this project be increased and that at least \$100,000 be included for years 2 through 5 to cover MHI research and management activities, such as those mentioned earlier, that are not currently reflected in the draft recovery plan. We suggest changing the priority for this task from 1 to 2.
- *Task 13.2. Implement the MHI management plan.* It is not clear that all costs for MHI research and management are adequately reflected under other costs as suggested in the table column for comments and in the above comment on task 12.4.1.2.
  - *Item 14. Implement education and outreach programs.* As indicated earlier, this item should be broadened to something such as “Implement the Hawaiian Monk Seal Recovery Program.” Implementing an education and outreach program should be a sub-item in this larger category. If that is done, a number of the costs indicated elsewhere in the implementation schedule for functions such as planning and coordination could be covered by appropriate tasks under this item.
  - *Task 14.1. Support an integrated education and outreach program.* As an organizational heading, the priority rating, responsible agency, task duration, and estimated costs should be deleted. The projected funding estimates should be apportioned among the specific tasks under this section.
  - *Task 14.1.2.* Something is missing from the title of this task.
  - *Task 14.1.3. Include a statewide, multi-media information campaign, drawing on professional expertise in public education and social marketing.* We suggest changing the priority for this task from 1 to 2 and indicating the costs for this task.
  - *Task 14.1.3. Update a performance monitoring and evaluation system to measure the effectiveness of education and outreach.* We suggest changing the priority for this task from 1 to 3 and indicating the cost for this task.
  - *Task 14.1.4. Target numerous audiences including fishers, marine resource managers, beach and ocean users, and the visitor industry.* We suggest changing the priority for this task from 1 to 2.
  - *Task 14.1.5. Complete a survey about the social behaviors and relationships of monk seals to investigate the cultural concerns of the Native Hawaiian community and the general public.* We suggest changing the priority for this task from 1 to 3.
  - *Task 14.1.6. Integrate research and monitoring activities to facilitate reporting by ocean users of injuries, entanglements, hookings, births, etc.* It is not clear what this task involves.
  - *Task 14.1.7. Continue and enhance NOAA fisheries collaboration on education and outreach with the HHWNMS, the Hawaii DLNR, NGO’s and volunteer groups.* This task seems to duplicate task 8.1. We suggest changing the priority for this task from 1 to 2.

**Page 108:** The end of the implementation schedule indicates that the costs for all tasks identified in the draft recovery plan total more than \$20 million for the first year and between \$7.75 and about \$8.25 annually for years 2 through 5. As indicated earlier, a number of the identified actions would contribute to monk seal recovery, but are otherwise needed for many reasons in addition to monk seal conservation. The costs of those activities should be supported largely or entirely by other

agencies and should not be considered part of the Service's core monk seal budget. Although we agree it is appropriate and important to identify those costs in this plan, we also believe it is important to distinguish those funds from the core funding that Service believes are appropriately provided through appropriations authorized under the ESA and MMPA. The Marine Mammal Commission therefore recommends that projected funding totals identified in the implementation schedule distinguish between the costs that should be provided as part of the core monk seal recovery program and those that should be provided by other agencies (or parts of the Service other than its Office of Protected Species) through appropriations other than those authorized under the ESA and MMPA.