



# MARINE MAMMAL COMMISSION

27 April 2010

Mr. P. Michael Payne, Chief  
Permits, Conservation, and Education Division  
Office of Protected Resources  
National Marine Fisheries Service  
1315 East-West Highway  
Silver Spring, MD 20910

Re: Permit Application No. 15126  
(National Marine Mammal Laboratory)

Dear Mr. Payne:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the above-referenced permit application with regard to the goals, policies, and requirements of the Marine Mammal Protection Act. The proposed research is a continuation of investigations of the foraging ecology, habitat requirements, vital rates, and effects of natural and anthropogenic factors on ribbon seals, spotted seals, ringed seals, bearded seals, and harbor seals in the North Pacific Ocean, Bering Sea, Arctic Ocean, and coastal regions of Alaska. The applicants are requesting authorization to capture, sample, and tag up to 150 individuals of each of the four species of ice seals (ringed, ribbon, spotted, and bearded seals) and up to 250 harbor seals annually over a five-year period. Animals would be captured, restrained (physically and, if necessary, chemically), measured and weighed, sampled (blood, blubber and muscle biopsies, skin, hair, swab samples, and vibrissae), have bioelectrical impedance analysis and serial blood draws conducted, and be flipper-tagged. Prior to release, the animals would be outfitted with instruments including one or more of the following: VHF radio-tag, time-depth recorder, satellite-linked time-depth recorder, underwater video camera, or acoustic recording tag. Up to 10 individual seals of each species would be recaptured annually to obtain unique data or to recover instruments of high value. Up to five animals of each species could be accidentally killed during the research activities over the five-year period. Up to 3,000 ice seals and up to 5,500 harbor seals could be taken by harassment during capture activities or collection of feces and other samples from haul-out sites.

## **RECOMMENDATION**

The Marine Mammal Commission recommends that the National Marine Fisheries Service issue the permit as requested.

## **RATIONALE**

This permit application pertains to phocid stocks that the Service has long neglected, as is evident in its stock assessment reports. These Arctic phocids are receiving more attention now because they appear to be highly vulnerable to loss of sea ice habitat that they depend upon—especially for pupping, resting, feeding, and molting—because of climate warming. The proposed research will not address all the information gaps for these species, but undoubtedly it will help build a body of knowledge about their status and trends, life history and natural history traits, and

vulnerability to climate change and other human activities. Continued failure to undertake such studies would be fundamentally inconsistent with statutory directives that promote science-based management for marine living resources, including those set forth in the Marine Mammal Protection Act.

That being said, the Commission is aware that some reviewers have raised a number of concerns about this permit application, including the general insufficiency in research on these species to date, the lack of clearly expressed hypotheses to be tested, insufficient information about sample sizes and composition for various activities, non-specific plans for instrumentation and biological sampling, changes in requested mortality limits compared to the previous permit, and the need for environmental analysis of the research under the National Environmental Policy Act. The Commission has considered these concerns and appreciates the thoughtful review that they reflect.

However, the Commission also has reviewed the applicants' responses and believes that they address the concerns to the extent possible under the present circumstances. In many respects, the differences between the proposed research and reviewer expectations appear to reflect the reality of working in the Arctic environment. These stocks inhabit remote, harsh environments that are difficult to work in at the best of times and that present researchers with numerous and continued challenges. In the Arctic, researchers must be prepared to adapt their methods at short notice to accommodate unpredictable differences in animal behavior and environmental variables such as ice conditions or weather.

The proposed research has been criticized for being a continuation of studies that, to date, have not provided the kinds of information needed to guide management. In fact, none of these species is well known, and this research program, focused in the Alaskan Arctic, has been building slowly and much of the work proposed in this application is a continuation of previous efforts. Unfortunately, research into some aspects of marine mammal demography and ecology can take decades, so a continuation of studies under multiple five-year permits is not unreasonable, particularly when scientists have little background information on which to base their studies.

The applicants also have been criticized for not describing the hypotheses that the research will test. Although hypothesis testing is central to many studies of marine mammals, focused quantitative descriptive studies constitute a completely valid research approach for a situation such as this one where knowledge about particular species or stocks is limited. In fact, the initial phase of research on all marine mammal species tends to be more descriptive until sufficient information has been collected to generate meaningful, and realistically testable, hypotheses. In many respects, research on several aspects of the biology of the species and stocks in question is still in this initial descriptive phase. This research will be useful in describing the animals involved, their behavior, survival and reproduction, movements, and distribution patterns. All of these topics and others can be investigated usefully, and often quite fully, using a well-designed quantitative but descriptive approach. Regardless of how desirable it may be, conducting experiments with testable hypotheses in the Arctic is often not possible because of scale, a highly variable environment, and prohibitive costs.

A third criticism is that the applicants have not provided sufficient information on the age/size/sex classes that they will sample. The application indicates that the scientists hope to encounter animals of different classes at a rate that reflects their population composition. Whether that actually happens will be largely beyond the scientists' control, at least until such time as they have collected sufficient information to exert some selectivity in their choice of study subjects. In addition, selection of subjects will be difficult for several of these species because they tend to be solitary or occur in rather small groups. Under those circumstances, the scientists may have no opportunity to select from among many seals within a large group—their only choice will be whether or not to sample the individuals that they encounter. Because these species are so poorly known, and often difficult to sample even when they can be located, the researchers likely will have much to gain by availing themselves of every opportunity to sample an animal.

A fourth criticism is that the applicants have failed to provide specific details about many of the proposed studies involving biological sampling (e.g., swabs, biopsies) and instrumentation with various types of tags. The Commission has been advised that all such sampling has been reviewed and approved by an Institutional Animal Care and Use Committee, will be conducted by or under the supervision of a veterinarian or veterinary technician, and will follow relatively standard procedures. As is generally the case, to be successful when working in the Arctic sea ice environment, the applicants will need to retain enough flexibility to be able to adapt those procedures in practical and safe ways to best suit the animals involved and the environmental conditions under which the activities will occur. If animals die from these procedures, then the research will be halted for review by the Service. With regard to sample sizes, the applicants have requested permission to tag up to 150 individuals of each of four species of ice seals (ringed, ribbon, spotted, and bearded seals) and up to 250 harbor seals annually over a five-year period. In reality, costs and working conditions likely will restrict sampling to considerably fewer animals. Nonetheless, within these constraints and barring sampling complications, the researchers should be taking advantage of all sampling opportunities to provide the baseline information needed to identify important yet practically testable hypotheses and design future studies.

A fifth criticism has been that the applicants increased the requested number of allowable deaths before they would be required to suspend their research and consult with the Service. The applicants indicate that they made a mistake in their original application and revised their request to include three deaths per year for each species, with a limit of 10 over the life of the permit. The applicants note that 10 deaths per species over the life of the permit would be the same as or smaller than the number authorized under the previous permit. The Commission considers these to be reasonable limits and notes that the applicants' record to date is within those limits.

The application also was criticized because the Service has not prepared an environmental assessment under the National Environmental Policy Act. The proposed research fits within the categorical exclusion for permits established under the regulations implementing the National Environmental Policy Act (40 C.F.R. Part 1500 *et seq.*) and, in the Commission's view, none of the exceptions that would trigger a requirement to prepare such a document (40 C.F.R. § 1508.27) are applicable. Although several of the species involved are being considered for listing under the

Mr. P. Michael Payne  
27 April 2010  
Page 4

Endangered Species Act, such consideration is based largely on their projected future status as a consequence of climate warming. The populations that will be sampled are still relatively large (at least in the tens of thousands), the numbers of animals that would be sampled and the total numbers that might be killed as a result of this research are negligible with respect to current population size, and the proposed research is consistent with studies conducted on numerous other stocks and species with no significant conservation impact. In addition, such research is fundamental to efforts to understand and manage the effects of Arctic climate change in the foreseeable future.

For all these reasons, the Marine Mammal Commission recommends that that National Marine Fisheries Service issue the permit as requested.

Please contact me if you have any questions concerning the Commission's recommendation and comments.

Sincerely,

A handwritten signature in blue ink that reads "Timothy J. Ragen". The signature is written in a cursive, flowing style.

Timothy J. Ragen, Ph.D.  
Executive Director