



# MARINE MAMMAL COMMISSION

20 December 2011

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 20910-3225

Re: Permit Application No. 16163  
(Northwest Fisheries Science Center)

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 Northwest Fisheries Science Center is requesting authorization to conduct research on 37 specified cetacean species, unidentified *Mesoplodon* spp., other unidentified beaked whales, unidentified species of baleen whales, and pinnipeds. The Center would conduct its research in all U.S. and international waters in the Pacific Ocean during a five-year period. Some of these activities currently are authorized under permit 781-1824, which the Center is seeking to renew and amend.

## RECOMMENDATIONS

The Marine Mammal Commission recommends that the National Marine Fisheries Service issue the permit, provided that it—

- ensure that activities to be conducted under this permit and those of other permit holders who might be conducting research on the same species in the same areas are coordinated and, as possible, data and samples shared to avoid duplicative research and unnecessary disturbance of animals;
- advise the Center of the need to obtain Institutional Animal Care and Use Committee (IACUC) approval of the amended protocols prior to initiating the proposed activities;
- advise the Center of the need to obtain permits under the Convention on International Trade in Endangered Species of Wild Fauna and Flora prior to importing or exporting parts from marine mammals listed in the Convention's appendices; and
- advise the Center of the need to consult with the relevant entity (e.g., National Marine Sanctuary, National Ocean Service, Marine National Monument, U.S. Fish and Wildlife Service) and obtain any required permits prior to conducting the proposed activities in a sanctuary, monument, or refuge.

## **RATIONALE**

The Northwest Fisheries Science Center proposes to conduct research on cetaceans and pinnipeds in the Pacific Ocean, including both international waters and the waters of Hawaii, Alaska, Washington, Oregon, California, and other U.S. territories. The purpose of the proposed research is to continue a long-term research project of more than 20 years to study (1) population size and structure and social organization; (2) range, movement patterns, and habitat use; (3) responses to anthropogenic impacts, (4) disease prevalence and contaminant concentrations; and (5) prey dynamics.

### **Observing, photographing, videotaping, and recording**

The Center seeks authorization to observe, photograph, videotape, and acoustically record numerous individuals of various species of cetaceans and pinnipeds each year (see the take table in the application). Researchers under this permit would conduct systematic aerial surveys using fixed- and rotary-wing aircraft at a minimum altitude of 91 m. Unmanned aircraft that are tethered to a small boat also could photograph and videotape cetaceans from a minimum altitude of 100 m. In addition, researchers would conduct systematic surveys using small and large vessels and autonomous surface and underwater vessels. Autonomous surface and underwater vessels would be equipped with hydrophones to obtain acoustic recordings of marine mammals or with active acoustic sources to collect fish assemblage data. Researchers also would acoustically monitor the cetaceans using a towed hydrophone array or sonobuoys.

### **Collecting samples**

Researchers would sample exhaled air using a long pole at a minimum distance of 6 m or unmanned aerial vehicles at a minimum distance of 3 m. NOAA's unmanned aerial vehicle pilots or individuals trained by those pilots would operate the aircraft. Vacuum systems, algal culture plates, or nylon mesh would be used to obtain the exhaled air samples. The researchers would not sample exhaled air from calves less than one year of age. However, females with calves of any age could be sampled. They also would collect sloughed skin, feces, and prey remains using various types of nets.

The researchers would biopsy sample cetaceans using a non-tethered modified rifle for killer whales, a tethered crossbow for bow-riding small cetaceans, and a non-tethered crossbow for other cetaceans. They would not biopsy sample calves less than three years of age, but would sample females with such calves. They would export and import samples of air, skin, feces, prey, and blubber for various analyses.

### **Assessing blubber thickness**

The researchers would determine blubber thickness in killer whales, including southern residents, using an ultrasound transducer and a 12-m cantilevered pole. The ultrasound transducer would contact the animal for only a few seconds to obtain the images. This method has been used

successfully on North Atlantic right whales. The researchers would not use this technique on calves less than three years of age but would use it on females with calves of any age.

### **Tagging cetaceans**

The researchers would instrument numerous cetaceans using suction-cup and/or dart tags (see the take table). Suction-cup tags may include VHF transmitters and data loggers that would record and store time, depth, temperature, light levels, GPS locations, acoustic recordings, swim speed, video, and still images. Those tags could include up to two different release mechanisms. The dart tags would include location-only transmitters and an improved break-resistant design and would be anchored in the skin at minimal depths. The researchers would instrument individuals with two different types of tags if they showed no strong behavioral reaction to the initial tagging. Tags would be deployed via pole, crossbow, or pneumatic projector at a distance of 2–30 m. The researchers would not tag southern resident killer whale calves less than three years of age, other species of calves less than one year of age, and females with calves less than six months of age. The researchers would make no more than three tagging attempts per individual per year. Focal follows, high-resolution photographs, and video would be used to assess the physiological and behavioral effects of tagging individuals. Data would be shared with the Service.

### **Assessing response to acoustic playbacks**

The researchers propose to conduct acoustic playbacks using an omni-directional source that projects simulated impact and vibratory pile driving sounds and naturally occurring sounds. Acoustic playbacks would be directed at tagged southern resident killer whales, but other species could be harassed incidental to those playbacks (see the take table). Source levels would not exceed 180 dB re 1  $\mu$ Pa (rms), and propagation loss would be measured empirically to verify the distances to the thresholds. Playbacks also would be terminated if any severe responses are observed based on guidance from Southall et al. (2007). The Center would avoid targeted exposures to groups that include calves less than one year of age.

### **Using echosounders for imaging and monitoring**

The Center would conduct a feasibility study to determine if echosounders could be used to image and monitor various species of marine mammals. Single, split, or multi-beam echosounders would operate at 200 kHz and would be deployed from a fixed platform or vessel from 20–500 m from the targeted animal. Researchers would collect target strength, detection range, and marine mammal size and age class data. In addition, echosounders that operate from 34–462 kHz would be used to image prey and prey resources of killer whales.

### **Permit issuance**

The Marine Mammal Commission recommends that the National Marine Fisheries Service issue the permit, but ensure that activities to be conducted under this permit and those of other permit holders who might be conducting research on the same species in the same areas are

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coordinated and, as possible, data and samples shared to avoid duplicative research and unnecessary disturbance of animals.

The Center's IACUC reviewed and approved the research protocols before its application was submitted to the Service. However, revisions were made to the application during the Service's application review process, which included a few minor modifications to numbers of animals and the species that could be harassed. None of the methods have been modified. The Center plans to submit those minor modifications to its IACUC for additional review and approval. The Marine Mammal Commission recommends that the National Marine Fisheries Service advise the Center of the need to obtain IACUC approval of the amended protocols prior to initiating the proposed activities.

The importation and exportation of marine mammal parts requires certain authorizations. To ensure all requirements are met, the Marine Mammal Commission recommends that the National Marine Fisheries Service advise the Center of the need to obtain permits under the Convention on International Trade in Endangered Species of Wild Fauna and Flora prior to importing or exporting parts from marine mammals listed in the Convention's appendices. In addition, the Center stated that some of the research activities would occur in various national marine sanctuaries, monuments, and wildlife refuges. That being the case, the Marine Mammal Commission also recommends that the National Marine Fisheries Service advise the Center of the need to consult with the relevant entity (e.g., National Marine Sanctuary, National Ocean Service, Marine National Monument, U.S. Fish and Wildlife Service) and obtain any required permits prior to conducting the proposed activities in a sanctuary, monument, or refuge.

The Commission believes that the activities for which it has recommended approval are consistent with the purposes and policies of the Marine Mammal Protection Act.

Please contact me if you have any questions concerning the Commission's recommendations.

Sincerely,



Timothy J. Ragen, Ph.D.  
Executive Director

#### References

Southall, B.L., A.E. Bowles, W.T. Ellison, J.J. Finneran, R.L. Gentry, C.R. Greene Jr., D. Kastak, D.R. Ketten, J.H. Miller, P.E. Nachtigall, W.J. Richardson, J.A. Thomas, and P.L. Tyack. 2007. Marine Mammal Noise Exposure Criteria: Initial Scientific Recommendation. *Aquatic Mammals* 33(4):411–521.