

MARINE MAMMAL COMMISSION
4340 East-West Highway, Room 700
Bethesda, MD 20814-4447

12 May 2009

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. 14241
(Peter Tyack, Ph.D.)

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 applicant is requesting a permit to take by harassment various species of beaked whales and large delphinids (e.g., long-finned pilot whales). Proposed activities would include tagging, behavioral observations, photo-identification, and sound playback studies and would be focused on adults and juveniles of either sex. The purpose of the research is to study cetacean behavior, sound production, and responses to mid-frequency sound at received levels of up to 180 dB re 1 μ Pa. Based on our review, we offer the following recommendation.

RECOMMENDATION

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

- require that the investigator stop an activity if observations indicate that the introduced sound may lead to serious injury or mortality;
- specify that tagging not be conducted on calves or females accompanied by calves less than six months of age, as estimated on the basis of their size;
- consult with the applicant to identify steps to be taken to monitor any animal that appears to become disoriented or injured during the playback experiments and to recover and necropsy any animal that may have died as a result of the activities;
- require that an activity be suspended, pending review and authorization to proceed, if an animal may have been injured or killed while conducting that activity;
- take steps to ensure that activities to be conducted under this permit and those of other permit-holders who might be carrying out research on the same species in the same areas are coordinated to avoid unnecessarily duplicative research and unnecessary disturbance of animals; and
- ensure that the applicant obtains all necessary permits under the Convention on International Trade in Endangered Species of Wild Fauna and Flora before importing samples into or exporting them out of the United States.

Mr. P. Michael Payne
12 May 2009
Page 2

RATIONALE

The proposed study is expected to further understanding of the effects of mid-frequency sound on marine mammals—especially beaked whales. The Commission believes that such studies are important for this purpose, as described in Cox et al. (2006).

These types of studies present a dilemma because they involve activities that are designed to test the tolerance of marine mammals to certain types and levels of sound and may invoke biologically significant responses. The investigator's ability to monitor such responses is crucial to the success of the experiment and, potentially, to the development and improvement of mitigation measures. Because such experiments may cause biologically significant responses, the investigator must be prepared not only to describe and document those responses, but also to use his or her expertise to halt or curtail an experimental activity before it has irreversible consequences (i.e., serious injury or death) for the animals being studied.

These types of studies also present a dilemma because they are intended to investigate the sensitivity of marine mammals to noise but, out of precaution, do not measure the responses of the individuals that may be most sensitive (i.e., mother-calf pairs). If such pairs are particularly sensitive to sound, it could cause them to alter their behavior, including changes that could weaken their bond and potentially lead to the death of the calf. Current limited studies may be misinterpreted by decision-makers and lead them to underestimate the effects of sound. They may not realize the studies do not measure the responses of the most vulnerable social unit of a population.

This application indicates that the investigator plans to avoid groups containing mother-calf pairs, and the Commission agrees that they should not be included in this experiment at this time. Nonetheless, the Commission encourages the careful development of experimental designs and procedures that include mother-calf pairs. Under current conditions, mother-calf pairs are undoubtedly being taken by mid-frequency sound from various human-related sources. Investigating their response is necessary to document the full effect of mid-frequency sound on them and to ensure that mitigation measures are developed to provide adequate protection.

In the interim, the Marine Mammal Commission recommends that the Service issue the requested permit, provided that the described conditions and mitigation measures are included.

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 this recommendation.

Sincerely,

A handwritten signature in black ink, appearing to read "Timothy J. Ragen" followed by a flourish and the letters "for".

Timothy J. Ragen, Ph.D.
Executive Director

Mr. P. Michael Payne
12 May 2009
Page 3

Literature Cited

Cox, T. M., T. J. Ragen, A. J. Read, E. Vos, R. W. Baird, K. Balcomb, J. Barlow, J. Caldwell, T. Cranford, L. Crum, A. D'Amico, G. D'Spain, A. Fernández, J. Finneran, R. Gentry, W. Gerth, F. Gulland, J. Hildebrand, D. Houser, T. Hullar, P. D. Jepson, D. Ketten, C. D. Macleod, P. Miller, S. Moore, D. C. Mountain, D. Palka, P. Ponganis, S. Rommel, T. Rowles, B. Taylor, P. Tyack, D. Wartzok, R. Gisiner, J. Mead, and L. Benner. 2006. Understanding the impacts of anthropogenic sound on beaked whales. *Journal of Cetacean Research and Management* 7(3):177–187.