



MARINE MAMMAL COMMISSION

4 May 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. 15682
(Mithriel MacKay, Texas A&M University)

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 authorization to conduct research on humpback whales in Puerto Rico waters during a five-year period.

RECOMMENDATIONS

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

- defer action on this application; and
- advise the applicant to gain experience with seasoned marine mammal biologists (e.g., those conducting research on humpback whales in Hawaii) who regularly approach humpback whales at a close distance and dive underwater with females and their calves for at least one field season before seeking further action on this application.

If the National Marine Fisheries Service decides to issue the requested permit notwithstanding the Commission's recommendation that action be deferred, the Marine Mammal Commission recommends that the Service—

- condition the permit to ensure that the applicant takes all necessary steps to minimize disturbance of the subject animals by exercising caution when approaching animals, particularly mother-calf pairs, and stopping an approach if there is any evidence that the activity may be interfering with mother-calf interactions such as nursing or other vital functions; and
- condition the permit to require that the applicant remain at least 100 m from any mother-calf pair when recording vocalizations.

RATIONALE

The applicant is seeking authorization to photograph, videotape, observe behaviors of, and record sounds from humpback whales in Puerto Rico waters from October through July. She also is seeking approval to extend her research to the waters off the U.S. Virgin Islands after the first season. The purposes of the proposed research are to (1) investigate the importance of smaller winter habitats during the calving/breeding season, (2) examine incidence of calf mortality between the winter calving/breeding grounds and summer feeding grounds, (3) investigate whether females return to the same calving/breeding grounds each year, and (4) determine the abundance of singing males off Puerto Rico and compare them with other winter habitats in the West Indies.

The applicant proposes to take by harassment up to 700 humpback whales of any age and sex each year. She would approach within 100 m of an individual whale no more than once per day, but could approach individual whales up to 10 times per season. She is requesting authorization to approach females and their calves at 25 m to photograph/videotape the whales from a vessel. If she cannot take photographs of sufficient quality for photo-identification from the vessel, she would dive and approach the whales at a distance of 25 m to photograph/videotape them underwater. The application is not clear as to whether the applicant is proposing to dive near adult males. She would conduct all of the underwater work in the presence of a safety diver. To record vocalizations, she would lower a hydrophone from the vessel and use hydrophones attached to the bottom off the coast of Mona Island. She is requesting authorization to approach closer than 20 m to record vocalizations. The applicant is not requesting authority to harass any other marine mammal species incidental to conducting the proposed research activities.

Experience and Safety Concerns

The Commission believes that young researchers interested in studying marine mammals should be encouraged. Nevertheless, before permits are issued for such studies, applicants should be required to demonstrate either (1) that they have sufficient experience to conduct the research effectively and safely (i.e., without posing undue risks to themselves or the study animals) or (2) that they will be adequately supervised while they gain that experience. In this case, it does not appear that the applicant currently has the necessary experience or that she will be closely supervised in conducting the proposed research.

The applicant's curriculum vitae indicate that she has little experience conducting research that involves close approaches to large whales and only 30 hours of experience operating small vessels (either a bateau or a Boston Whaler) to approach bottlenose dolphins. She has had some vessel-based training provided by researchers at the Provincetown Center for Coastal Studies. However, it is not clear that she has adequate experience to safely maneuver a vessel next to a large whale. Nonetheless, the application indicates that she would be the principal investigator responsible for vessel operations and all research activities, including determining when those activities might be posing a risk to the whales or causing significant changes in their behavior. Although she has indicated that research activities would be halted if it is clear that nursing has been interrupted or percussive or energetic behaviors occur, adverse behavioral changes and stress can occur in other

situations. In addition, humpback whales off Puerto Rico are not well studied, and they may be more easily disturbed than whales that have been subject to extensive research activities, such as those in Hawaii.

The applicant's curriculum vitae also does not indicate that she has sufficient experience to dive safely with these whales. Her training at the Provincetown Center for Coastal Studies presumably did not involve diving with the whales. She proposes first to attempt to obtain photographs from the vessel but probably would have to resort to diving because the whales are not feeding on the calving/breeding grounds, they do not dive as deeply, and they are less likely to show their flukes. The application notes that in the next year she intends to train with Puerto Rican divers who have more than 15 years of experience diving with whales, but without knowing more about her past experience and the proposed training, the Commission cannot simply assume that this will be adequate. Thus, based on the information provided by the applicant, the Commission is unable to evaluate her level of dive experience and, at this point, cannot recommend that the Service authorize in-water activities.

Because of these concerns, the Marine Mammal Commission recommends that the National Marine Fisheries Service defer action on this application. The Marine Mammal Commission further recommends that the National Marine Fisheries Service advise the applicant to gain experience with seasoned marine mammal biologists (e.g., those conducting research on humpback whales in Hawaii) who regularly approach humpback whales at a close distance and dive underwater with females and their calves for at least one field season before seeking further action on this application.

If the National Marine Fisheries Service decides to issue the requested permit notwithstanding the Commission's recommendation that action be deferred, the Marine Mammal Commission recommends that the National Marine Fisheries Service condition the permit to ensure that the applicant takes all necessary steps to minimize disturbance of the subject animals by exercising caution when approaching animals, particularly mother-calf pairs, and stopping an approach if there is any evidence that the activity may be interfering with mother-calf interactions such as nursing or other vital functions.

Approach Distances

The Commission also questions whether the applicant would need to be within 20 m or less of females and their calves to record their vocalizations. The application does not justify such close approaches by describing the frequencies and source levels of the vocalizations and the associated distances at which recordings could be made. Although the application states that these vocalizations are considered high-frequency, Zoidis et al. (2008) state that vocalizations from humpback whale calves off Hawaii were of low-frequency (mean=220 Hz), brief duration (mean=170 ms), and relatively narrow bandwidth (mean=2 kHz). On average, propagation loss due to frequency absorption within the first 100 m can be expected to be very minor (e.g., at 1 kHz the absorption is 0.006 dB at 100 m and at 10 kHz the absorption is 0.1 dB at 100 m). In addition, based on spherical spreading, the signal strength at 50 m will be 85 percent of that at 20 m and the signal strength at

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100 m will be 65 percent of that at 20 m. As such, calf vocalizations should not attenuate so quickly that the vessel would need to be as close as 20 m to the whales to record them. The application also states that the vessel would be either drifting or anchored during passive acoustic recordings and, once positioned, would not be repositioned for 60 minutes. It is likely that the whales and possibly the vessel would move during that interval such that the distance between the whales and the vessel would change while recordings were being made.

For all the stated reasons, the Commission does not believe that approaches less than 20 m are necessary to record vocalizations of mothers and calves or that the applicant has sufficiently explained the basis for this part of the requested authorization. As such, the Marine Mammal Commission recommends that, if the National Marine Fisheries Service issues the permit, it condition the permit to require that the applicant remain at least 100 m from any whale, including mother-calf pairs, when recording vocalizations. The Commission recognizes that the applicant may want to record vocalizations at lesser distances when engaged in activities that would allow for closer approaches (e.g., photo-identification). Although vessel noise may interfere with recording vocalizations and the whales' behavior may be modified such that they do not vocalize or do not vocalize normally under such conditions, the Commission believes that such recordings should be allowed as long as the purpose of approaching whales closer than 100 m is not primarily for the purpose of recording vocalizations and does not involve remaining in close proximity to the subject whales longer than is necessary to take the desired photographs and video.

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

Sincerely,



Timothy J. Ragen, Ph.D.
Executive Director

Literature Cited

Zoidis, A.M., M.A. Smultea, A.S. Frankel, J.L. Hopkins, A. Day, A.S. McFarland, A.D. Whitt, and D. Fertl. 2008. Vocalizations produced by humpback whale (*Megaptera novaeangliae*) calves recorded in Hawaii. *Journal of Acoustic Society of America* 123 (3):1737–1746.