3 February 2012

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. 16998
(Gregory Walker,
University of Alaska Fairbanks)

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 and the Endangered Species Act. Mr. Walker is requesting authorization to conduct unmanned aerial surveys of Steller sea lions in Alaska during a one-year period.

RECOMMENDATIONS

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

- require the implementation of sufficient monitoring to ensure that disturbances are detected and recorded; and
- require Mr. Walker to minimize the potential impacts of sea lion disturbance by exercising caution when approaching female/pup pairs and stopping such an approach if there is evidence that the activity may be interfering with female/pup behavior, nursing, or other vital functions.

RATIONALE

Mr. Walker proposes to conduct unmanned aerial surveys of Steller sea lion terrestrial habitat from Kodiak Island to Attu Island, Alaska. The purpose of the proposed research is to refine the accuracy and fidelity of this method so that unmanned aerial surveys can be used to collect data for making abundance estimates. Compared to standard aerial surveys, ship-based, small-unmanned aircraft could provide a more cost-effective, quiet, and safe means for surveying Steller sea lions in remote locations. Because unmanned aircraft are quieter than manned aircraft, Mr. Walker believes that using unmanned aircraft could eliminate, or greatly reduce, the potential for disturbance.

Mr. Walker plans to conduct unmanned aerial surveys during two four-week deployments from March through December 2012. The aircraft could harass up to 13,000 Steller sea lions of all

age classes and either sex. He would use various types of unmanned aircraft that collect streaming electro-optic video, high-resolution still imagery, thermal infrared imagery, and synthetic aperture radar imagery. The aircraft would be flown from vessels stationed 1.6–4.8 km from the haul-out sites or rookeries and would be flown parallel to the shoreline at an altitude of 75–120 m. Flying aircraft at that altitude would enable researchers to identify brands and possibly tags. In addition, the surveys would be flown over both previously surveyed sea lion haul-out sites and un-surveyed sites to provide a basis for comparing the capability of manned and unmanned aircraft for collecting data.

One of the key questions to be addressed during this study is whether the unmanned aircraft causes disturbance of the surveyed animals. For purposes of assessing whether a take has occurred and whether authorization is needed, the Service considers any animal approached within a certain distance as having been taken, regardless of whether the animal reacts to the approach or related activities. As such, any marine mammal approached to within an altitude of 305 m will be considered as having been taken, which is the standard applied when reviewing a permit application. Although that approach may be practical for estimating the potential maximum number of takes, it does not provide specific information about the actual frequency of disturbance or the nature of the response.

Hypothetically, disturbance of target and non-target species can be evaluated immediately because the cameras transmit data on a real-time basis. However, detection of disturbance will depend largely on the "field of view" of the detection technology. For example, if the aircraft flies over a group of sea lions and they respond as it approaches, then any forward-looking technology should detect the disturbance. However, if the technology is forward-looking, but the animals respond only after the aircraft passes overhead, the on-board technology may not detect the disturbance. Therefore, to ensure that the aircraft is not causing disturbance, some monitoring mechanism—or group of mechanisms—will be needed to detect all reasonably possible types of disturbance. The application did not describe how such outcomes would be detected, although a number of mechanisms are possible (e.g., onshore observers, vessel-based observers with "big-eye" binoculars, backward-looking survey technology). To ensure that the potential for disturbance is assessed reliably (i.e., accurately), the Marine Mammal Commission recommends that the National Marine Fisheries Service issue the permit, but condition it to require the implementation of sufficient monitoring to ensure that disturbances are detected and recorded.

If harassment of a target animal is observed, the operations would be adjusted to eliminate the disturbance. Mr. Walker also would avoid surveying known rookeries during the pupping season until it is determined that the aircraft operations do not disturb animals (i.e., by first surveying sea lions at haul-outs that are not rookeries or during the non-pupping season). In addition, if a non-target species is observed, the aircraft would maintain at least a 305-m stand-off distance and would be relocated to another site. Mr. Walker does not intend to harass non-target species, however, he has requested authorization to harass 200 harbor seals, 10 killer whales, 10 humpback whales, and 10 northern fur seals incidental to conducting the surveys.

Mr. Walker began conducting aerial surveys of wildlife in 2009 during survey cruises that targeted ice seals in the Bering Sea. To ensure that he is qualified to identify the relevant behavioral responses within the Steller sea lion population, Mr. Walker would complete a two-day training

session with researchers at the Alaska SeaLife Center prior to conducting any aerial surveys. Those researchers would use archived and live video footage obtained at sea lion haul-out sites and rookeries to characterize responses to natural disturbance (e.g., an eagle flying overhead causing animals to have increased vigilance) and man-made disturbances (e.g., human presence causing all animals to abandon the haul-out site). If the first deployment occurs during the spring of 2012, Mr. Walker plans to operate his aircraft from the same vessel that would carry National Marine Mammal Laboratory Steller sea lion researchers, who would be conducting winter diet studies. Mr. Lowell Fritz, a Laboratory researcher with considerable experience studying Steller sea lions, has agreed to work with Mr. Walker to ensure that he understands and can detect when a sea lion's behavior changes. They would use the real-time footage capabilities of the unmanned aircraft to implement mitigation measures, as appropriate, and to report any incidents of disturbance accurately.

Finally, the Commission believes that the development or implementation of new research tools should always be tested first with the animals least vulnerable to disturbance. In almost all circumstances, that means avoiding female/pup pairs whenever possible. Females with pups are often hyper-vigilant and their pups are more likely to be injured or killed if large numbers of animals are disturbed and stampede toward the shore. Therefore, the Marine Mammal Commission recommends that the National Marine Fisheries Service condition the permit to require Mr. Walker to minimize the potential impacts of sea lion disturbance by exercising caution when approaching female/pup pairs and stopping such an approach if there is evidence that the activity may be interfering with female/pup behavior, nursing, or other vital functions.

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

Sincerely,

Timothy J. Ragen

Timothy J. Ragen, Ph.D.
Executive Director