



# MARINE MAMMAL COMMISSION

27 January 2011

Mr. Timothy J. Van Norman  
Chief, Branch of Permits  
Division of Management Authority  
U.S. Fish and Wildlife Service  
4401 North Fairfax Drive  
Arlington, VA 22203

Re: Application for Renewal of Permit No. MA-078744  
(Randall Davis, Ph.D., Texas A&M University)

Dear Mr. Van Norman:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the above-referenced application for permit renewal with regard to the goals, policies, and requirements of the Marine Mammal Protection Act. The applicant is requesting authorization to conduct research on sea otters in Prince William Sound, Alaska, during a five-year period. The proposed activities are nearly identical to those authorized under the previous permit and modifications.

## RECOMMENDATIONS

The Marine Mammal Commission recommends that the Fish and Wildlife Service issue the requested permit but limit the potential for significant disturbance by conditioning the permit to (1) protect females with pups by prohibiting the positioning of a skiff above their dive sites, (2) limit the collection of dive depth and location data for other otters to periods after a foraging bout has been completed and animals have surfaced at least 50 m from the dive site and are no longer foraging, and (3) require monitoring and reporting of sea otter reactions to the presence of the boat.

## RATIONALE

### Background and Purpose

The applicant proposes to photograph and record the behavior of sea otters from mid-May through early September in Simpson Bay, Alaska. He would approach up to 200 otters per year no closer than 20 m for photo-identification, 50 m for observing diving and foraging behavior, or 75 m for observing behavior of female-pup pairs and territorial males. In addition, he would collect up to two sea otter carcasses per year for necropsy. The purpose of the proposed research is to continue the study of the behavioral ecology and habitat-use patterns of sea otters in Simpson Bay. More specifically, the applicant proposes to (1) obtain behavioral data on known individuals, (2) monitor intra-annual movement patterns, (3) record feeding behavior and prey preference, (4) monitor the behavior and range of territorial males and females with pups, (5) describe sea otter habitat-use patterns, and (6) assess predation of sea otters by killer whales and sharks. He does not expect to harass other marine mammals incidental to these studies.

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## **Foraging Behavior**

The applicant proposes to study foraging behavior by determining the amount of time that the otter is submerged, the type of prey species consumed, and the depth of each dive. He would determine submergence time and prey type using binoculars and a stopwatch from a location 50 to 100 m from the point of submergence.

To assess dive depth, the applicant proposes to position a skiff at least 50 m from the otter's location until it submerges, at which time he would move the skiff near or above the diving animal and measure water depth. This approach raises several concerns. First, moving a skiff over the dive site is likely to disturb the animal and disrupt its foraging bout. Sea otters in Prince William Sound, for example, often excavate pits in the bottom substrate by repeatedly diving to the same area when foraging (i.e., a foraging bout). An approaching skiff may disrupt such foraging bouts, displacing the otter. Disturbance also is a particular concern for mother-pup pairs because the pup often remains at the surface while the female dives. In such cases, the approach of a skiff could cause a mother-pup pair to separate.

Second, the information gained using this approach will be limited. At most, the applicant could get records from only 200 diving bouts unless the plan is to make multiple approaches to investigate the dive depth of a single otter. Time-depth recorders provide orders of magnitude more information that is far more accurate, detailed, and revealing. Nonetheless, the investigator has published papers based on such methods and data. That being the case, the Marine Mammal Commission recommends that the Fish and Wildlife Service issue the requested permit but limit the potential for significant disturbance by conditioning the permit to (1) protect females with pups by prohibiting the positioning of a skiff above their dive sites, (2) limit the collection of dive depth and location data for other otters to periods after a foraging bout has been completed and animals have surfaced at least 50 m from the dive site and are no longer foraging, and (3) require monitoring and reporting of sea otter reactions to the presence of the boat.

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