MARINE MAMMAL COMMISSION

30 October 2009

Ms. Nadene G. Kennedy
Permit Office, Room 755
Office of Polar Programs
National Science Foundation
4201 Wilson Boulevard
Arlington, VA 22230

Dear Ms. Kennedy:

By notice in the *Federal Register* dated 10 September 2009 (74 Fed. Reg. 46623), the National Science Foundation requested comments on a permit application from Daniel P. Costa, Ph.D. The application seeks authorization under the Antarctic Conservation Act of 1978 to conduct research on Weddell seals in the Ross Sea, including McMurdo Sound and several Antarctic Special Protected Area locations, including northwest White Island (ASPA 137). The Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the permit request and offers the following recommendations and rationale.

RECOMMENDATIONS

The Marine Mammal Commission recommends that the National Science Foundation—

- defer issuing the requested authorization pending confirmation from the National Marine Fisheries Service that the permit holder has obtained the necessary authorization for the planned activities under the Marine Mammal Protection Act;
- in consultation with the National Marine Fisheries Service, ensure that the proposed activities, if approved, are carefully coordinated with those of other researchers currently working on these seals;
- work with the National Marine Fisheries Service to assess the possible cumulative effects of multiple research activities involving Weddell seals in eastern McMurdo Sound;
- to the extent possible, direct Weddell seal research that does not require the use of marked animals from the eastern McMurdo Sound population to animals inhabiting the western portions of the Sound;
- to the extent possible, require researchers studying Weddell seals in eastern McMurdo Sound to find and use animals that have not previously been marked, to minimize impacts to other ongoing research projects;
- work with the applicant to identify seals or populations other than those at White Island to be used for the proposed research.

RATIONALE

Authorization under the Marine Mammal Protection Act

The applicant is seeking authorization to conduct research on Weddell seals in the Ross Sea including McMurdo Sound and several Antarctic Special Protected Area locations, including Northwest White Island (ASPA 137). Under the Marine Mammal Protection Act, the applicant must obtain a research permit to conduct the proposed research. The Commission understands that the National Science Foundation does not issue its research permits unless and until such applicants have obtained the necessary permit from the National Marine Fisheries Service. The Marine Mammal Commission supports that approach and, therefore, recommends that the National Science Foundation defer issuing the requested authorization pending confirmation from the National Marine Fisheries Service that the permit holder has obtained the necessary authorization for the planned activities under the Marine Mammal Protection Act.

Coordination of research activities and assessment of cumulative effects

The Marine Mammal Commission continues to be concerned about the potential for cumulative impacts from multiple research activities involving Weddell seals in eastern McMurdo Sound. This general concern is not specific to Weddell seals, but includes other intensively studied marine mammal species and populations such as the North Atlantic right whale, the western population of Steller sea lions, the Hawaiian monk seal, the North Pacific southern resident killer whale population, and the western population of North Pacific gray whales. Environmental analyses required under the National Environmental Policy Act and consultations under section 7 of the Endangered Species Act also recognize the need to consider the cumulative impacts of multiple activities that individually might not have significant effects on the animals being studied, but when considered collectively, might be significant. The Commission's intent is not to limit research unnecessarily but, being mindful of the difficulty in evaluating cumulative effects, believes that caution is warranted where such effects are possible. Our ability to identify and assess cumulative effects is an area in need of further investigation to minimize the risks that populations will be exposed to unacceptable levels of stress, yet not being so precautionary as to limit research opportunities unnecessarily based on overly conservation assessments of possible cumulative effects. In addition, the Commission is concerned that allowing multiple studies on the same population may lead to research-related interactions that inadvertently confound the scientific results. The potential for such interactions provides further reason to manage overlapping research programs with a degree of caution.

The Weddell seals in Erebus Bay have been studied fairly intensively for several decades. Literally millions of dollars and many person-years have been invested in this research. Scientists can now describe the reproductive history of the majority of individuals because they generally exhibit site fidelity for purposes of breeding. The resulting long-term database—one of the best available for any marine mammal species or population—is unique in Antarctica and facilitates the testing of important hypotheses on population ecology and natural selection processes, subjects that currently cannot be tested anywhere else around the continent. The Commission believes that precautionary management is required to ensure the continuing value of this population to researchers because the

accidental mortality of even a small number of these animals of known age and history could undermine the testing of certain important hypotheses.

The first step toward minimizing the potential for adverse cumulative effects is to ensure that researchers coordinate their activities whenever possible to prevent unwarranted duplication of effort that results in unnecessary disturbance or other effects on the seals. To address that concern, the Marine Mammal Commission recommends that the National Science Foundation, in consultation with the National Marine Fisheries Service, ensure that the proposed activities, if approved, are carefully coordinated with those of other researchers currently working on these seals. However, even well-coordinated research programs may have undesirable cumulative effects that should be identified and avoided. This is particularly the case where the subject species or population is depleted, threatened, or endangered, but also the case where circumstances offer unique opportunities for certain types of research. With that in mind, the Marine Mammal Commission further recommends that the National Science Foundation work with the National Marine Fisheries Service to assess the possible cumulative effects of multiple research activities involving Weddell seals in eastern McMurdo Sound.

Until cumulative effects have been investigated and described adequately, a precautionary approach would suggest the need to distribute research efforts among multiple populations. Other Weddell seal populations inhabit the western coast of McMurdo Sound from the Stranded Moraines and Marble Point north to the Italian station at Terra Nova Bay. These seals have little exchange with those in eastern McMurdo Sound. Thus, the Marine Mammal Commission recommends that, to the extent possible, the National Science Foundation direct Weddell seal research that does not require the use of marked animals from the eastern McMurdo Sound population to animals inhabiting the western portions of the Sound. If research must be done in eastern McMurdo Sound, then Marine Mammal Commission also recommends that, to the extent possible, the Foundation require researchers studying Weddell seals in eastern McMurdo Sound to find and use animals that have not previously been marked to minimize impacts to other ongoing research projects. In the long-term, the best solution would be to conduct the studies needed to determine if multiple research projects are having unanticipated or unacceptable effects. However, such research will take some time to complete.

The White Island Weddell seal population

Finally, the White Island Weddell seal population has been given extra protection both because it is small, and therefore more vulnerable to research effects, and because it provides a unique control population for demographic and other studies on other Weddell seal populations in the region. In particular, this population is supplying unique data on the effects of in-breeding on a small isolated population of seals. To maintain the White Island population as a control for some aspects of the research in McMurdo, and a unique study population in its own right, the Commission and others have recommended that studies not be conducted on these seals if those studies can be conducted just as effectively on seals from other populations. If Dr. Costa's proposed studies do not specifically require the use of animals in the White Island population, moving that research to other sites would help ensure the population's value for other purposes. Assuming that is

the case, the Marine Mammal Commission recommends that the National Science Foundation work with the applicant to identify seals or populations other than those at White Island to be used for the proposed research.

Please contact me if you or your staff has any questions about our recommendations and comments.

Sincerely,

Timothy J. Ragen, Ph.D.
Executive Director

cc: Mr. P. Michael Payne