MARINE MAMMAL COMMISSION

4 September 2012

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

Re: Permit Application No. 690038
(U.S. Geological Survey,
Alaska Science Center)

Dear Mr. Van Norman:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the U.S. Geological Survey's application to renew permit 690038 for a five-year period. The requested permit would allow a continuation of research activities on polar bears in Alaska.

RECOMMENDATION

The Marine Mammal Commission recommends that the Fish and Wildlife Service issue the permit, as requested.

RATIONALE

The U.S. Geological Survey proposes to continue research activities conducted during the past 30 years on polar bears in Alaska, primarily in spring and fall. The objectives are to investigate (1) abundance and distribution, (2) survival and population dynamics, (3) movement patterns and habitat use including critical habitat areas, (4) energetics, (5) disease and health, (6) onshore ecology, (7) anthropogenic risks including oil spills, and (8) responses to a rapidly changing Arctic environment.

The Survey would harass, capture, handle, restrain, administer drugs to, measure, weigh, mark/tag, sample, and conduct bio-electrical impedance analyses on up to 200 polar bears each year of any age class or either sex. Researchers would approach the bears using a helicopter at a minimum altitude of 4.6 m. Before initiating any activities, they would ensure that the capture location is safe for the bears and for a helicopter to land. After confirming safe conditions, they would immobilize the bears using Telazol and dexmedetomidine injected using a remotely-fired dart. Dexmedetomidine has been used to immobilize brown bears safely and, in contrast to Telazol, it has an analgesic effect. The drug combination can be administered with a single dart and avoids respiratory suppression that often occurs with other drug combinations. The drug effects would be reversed when research activities are concluded, which would allow for a faster recovery to normal activities. When the researchers have immobilized family groups, they would reverse the drug

effects on the cubs first and then the mother. Individual bears could be captured and handled up to two times per year. However, researchers normally capture and handle bears only once per year. Researchers would cease capture activities if the dart gun malfunctions, they have difficulty moving into a good position for darting, a family group separates, or unsafe environmental conditions occur that would prolong the capture for an unacceptable amount of time. Capture activities could occur for up to four hours.

After immobilizing a bear, the researchers would conduct the following specific activities. They would weigh and measure the bear and mark it with plastic ear tags, a tattoo of a unique number on the inside of the upper lip on both sides of the mouth, and paint on the hair of the rump. If a bear is recaptured, those tags/markings would be reapplied only if the original tags, tattoos, or markings were lost or damaged. They also would collect samples of blood, hair, blubber, skin, feces, breath, and milk, and a pre-molar tooth from either the upper or lower jaw. Researchers would administer oxytocin to 35 adult female bears per year to obtain the milk samples. They would administer isotopes (i.e., $^{3}H^{18}O$) to, and collect up to three blood samples from, 15 adult bears of either sex each year. In addition, they could collect blood and tissue samples and any or all teeth from an unlimited number of dead stranded and subsistence hunted animals in Alaska. They also could collect shed hair and feces from denning sites and hair-snaring wires on bowhead whale carcasses. Such samples could be collected from approved research activities, opportunistically at den sites or carcasses, and from legally hunted polar bears in Canada, Greenland, Norway, and Russia. All samples could be imported or exported for analyses.

The Survey proposes to attach satellite telemetry collars to 50 subadult and adult bears and radio transmitters to 75 bears older than cubs (i.e., cubs-of-the year) annually. Although Survey researchers would not instrument cubs, it could instrument females with cubs. The collars could include VHF transmitters, satellite transmitters, GPS transmitters, accelerometers, and/or video cameras. Researchers would attempt to recover the collars to assess neck wear and retrieve stored data. However, the collars would be constructed to release automatically after up to two years if they were not recovered by that time. Radio transmitters would be attached to ear tags or to the hair on the midline of the bear's back using epoxy. The researchers may secure tags glued to the hair with sutures and/or a subcutaneous anchor. In general, they would attach only one instrument on each bear.

In addition, the Survey would conduct line transect aerial surveys once each spring and twice each fall. During those surveys, the aircraft could harass up to 400 bears during low-level observations at an altitude of 30 m. Researchers also would biopsy sample and mark an additional 300 polar bears older than cubs of either sex using the same remote-darting method described previously. Biopsy sampling would take up to 10 minutes to complete and would be stopped if any unforeseen circumstances prolong the darting attempt. A unique paint mark would be applied to the hair via the biopsy dart. An individual polar bear could be biopsy sampled up to three times per year if it did not retain the paint mark and was sampled during each of the three surveys. Lastly, the applicant would survey up to 30 dens per year that are occupied by female polar bears. They would conduct the surveys from December through March using forward looking infra-red equipment placed on an aircraft or visually from a helicopter. The Survey does not expect to harass any other species incidental to the proposed research activities.

The Survey is requesting authorization to euthanize a polar bear if it is mortally wounded during the research activities or poses a threat to the researchers. It also may unintentionally kill a polar bear during the capture activities. Accordingly, the Survey has requested authorization to kill up to four polar bears per year incidental to the proposed research activities.

The Survey indicated that its Institutional Animal Care and Use Committee (IACUC) has reviewed and approved most of the proposed procedures. Some procedures (i.e., use of dexmedetomidine, suturing/anchoring of radio tags) currently are being reviewed by the IACUC and would not be initiated until the IACUC approves them. The Survey also stated that the proposed research activities could occur in the Arctic Wildlife Refuge and on Bureau of Land Management and North Slope Borough lands. They have obtained the relevant authorizations to conduct research activities in those areas in the past and are in the process of finalizing those authorizations for the upcoming field season.

The Survey would continue to collaborate and coordinate with researchers at the U.S. Fish and Wildlife Service and from the Arctic countries where polar bears occur. The Marine Mammal Commission supports the proposed research activities and recommends that the Fish and Wildlife Service issue the permit, as requested.

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 recommendation.

Sincerely,

Timothy J. Ragen

Timothy J. Ragen, Ph.D.
Executive Director