MARINE MAMMAL COMMISSION

3 July 2025

Mr. Drew Crane, Deputy Assistant Regional Director
Ecological Services
U.S. Fish and Wildlife Service
1011 East Tudor Road
Anchorage, AK 99503-6199

Re: Permit Amendment Application No. 19222522
(U.S. Geological Survey)

Dear Mr. Crane:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the above-referenced permit amendment application with regard to the goals, policies, and requirements of the Marine Mammal Protection Act (MMPA). U.S. Geological Survey (USGS) is seeking to amend its permit to conduct research on Pacific walruses in Alaska during a five-year period—permit 33776D expires on 5 April 2028. The purpose of the research is to investigate (1) abundance and distribution, (2) demography, (3) population structure and trends, (4) movement patterns and habitat use, and (5) foraging ecology of walruses. USGS is authorized to harass, observe, photograph/videotape, sample[1], and instrument[2] individuals of any age class and either sex.

USGS is proposing to develop a new immobilization protocol for Pacific walruses to attach transmitters to walrus tusks that will remain on for one year or more. The amendment would authorize USGS to (1) identify an appropriate remote-delivery device by testing two devices at ranges of 20 to 30 meters (5 adult females per device) and (2) evaluate the behavioral responses of walruses to dart deployment by conducting behavioral observations on up to 30 adult female walruses per year prior to and after darting[3]. All darts would be comprised of a 2-ml syringe containing 1.5 ml of veterinary-grade injectable water and a 2-cm, 14-gauge needle. Researchers would not administer drugs as part of this amendment and intend to amend their permit again in the future to authorize drug administration, sedation, and tusk-tagging procedures. Researchers would use various measures to minimize impacts on marine mammals and their proposed methods have been approved by their Institutional Animal Care and Use Committee (IACUC).

Purpose of this study

During its informal review of this amendment application, the Commission expressed concerns regarding the purpose of the proposed study. USGS previously was authorized to remotely

[1] Including remotely-collected skin and blubber samples using a crossbow.
[2] With remotely-deployed satellite-linked radio tags using a crossbow.
[3] All activities would occur with walruses hauled out on ice.

sedate walruses to attach tags to tusks and submitted a standard operating procedure (SOP) for walrus capture with chemical immobilization with its application for permit #801652 in 2013. These methods were not acknowledged in the amendment application materials. Thus, it was unclear why USGS was proposing to develop a new protocol. In response to the Commission's informal questions about the existing SOP, the Fish and Wildlife Service (FWS) stated that the previous techniques "resulted in significant mortality of Pacific walrus and were discontinued years ago." The purpose of the proposed study is "to establish a drug-delivery method which does not result in the walrus flushing into the water, where they are at risk of drowning as the drug takes effect." FWS also stated that Pacific walruses are "much more prone to startling and flushing to water than Atlantic walrus", which is why USGS plans to evaluate Pacific walrus response to darting and then leverage an existing and successful Atlantic walrus immobilization protocol to develop an appropriate protocol for use in Alaska.

Additionally, the protocols approved by the IACUC, which were revised and shared with the Commission after its informal communications with FWS, referenced studies that assessed the behavioral responses of male Atlantic walruses on land to remote darting and behavioral responses of female Pacific walruses on ice to biopsy darting. USGS did not think those studies were relevant given the higher risk of a sedated animal entering the water compared to an animal that was biopsy darted, that males are "less excitable than adult females," and that walruses on sea ice, as targeted in the proposed study, would be much closer to the water than previously-studied walruses on land. USGS hopes that its study will show that there is a 0-percent probability that a walrus will enter the water after being darted and estimates that 50[4] target animals should provide a reasonable level of precision to meet that threshold.

The background information and study objectives that were disclosed during informal communications with FWS and in the revised IACUC protocols associated with this proposed study were not included in or added to the permit amendment application. Without that information, it is unclear why the proposed darting of up to 40 adult female Pacific walruses per year is necessary. Including details regarding the deficiencies of past protocols would help justify the proposed study and is essential for determining whether the proposed research meets the *bona fide* and humaneness criteria of the MMPA. The Commission commends USGS for pursuing a safer sedation protocol that may also lead to longer duration and more informative telemetry studies. The Commission recommends that FWS ensure that all such relevant information gets incorporated into a revised application, which will ultimately underpin any permit that gets issued.

Concerns regarding proposed needle size and relevance to the study objectives

To minimize risk to the animals, USGS proposed to use darts with 2-cm, 14-gauge needles to identify an appropriate delivery device, evaluate the walruses' response to dart deployment, and estimate drug delivery rates[5]. During its informal review, the Commission expressed concerns regarding USGS's decision to use 2-cm needles because USGS's previous walrus immobilization protocol, as well as protocols USGS referenced for Atlantic walruses (Ølberg et al. 2017), used 8- to

[4] This is inconsistent with the permit amendment application proposal to conduct behavioral observations on up to 30 adult female walruses per year over a two-year period.
[5] USGS intends to flush walruses after the behavioral observations and collect deployed darts to estimate the amount of sterile water that remains in the syringe.

12-cm needles to administer sedatives intramuscularly. Follow-up discussions with FWS indicated that USGS intends to eventually administer sedatives intramuscularly and that it is willing to use a longer needle in this study to more fully replicate the drug delivery mechanism if that approach is deemed most appropriate. The researchers believe that the results from a "shorter needle test" could be extrapolated to the longer needle size that would be used to administer drugs and did not foresee the need to conduct additional trials with longer needles if testing with shorter needles was successful. USGS also expressed concern that a longer needle may not be shed by the animal right away. The IACUC protocols that were revised and approved after the Commission's informal review included options to use a 2- or 12-cm needle as determined by the MMPA permit. In addition, informal communications with FWS clarified that the purpose of flushing walruses to collect deployed darts was to determine whether the force used to deploy the dart "is sufficient to dispense the contents of the attached syringe." Again, the Commission recommends that FWS incorporate this additional information into a revised amendment application.

The Commission remains concerned that drug-delivery device operation, accuracy, and delivery rate using darts with a 2-cm needle would not be comparable to a 12-cm needle. For example, it is likely that the drug-delivery rate would be affected by drug versus water viscosity, needle length, properties of blubber versus muscle, and other factors. The delivery rate of water via a 2-cm needle into blubber may not be comparable to the delivery rate of a drug via intramuscular injection with a 12-cm needle. Additionally, the trajectory of a dart with a shorter needle would likely differ from that of a dart with a longer needle, particularly across a 20- to 30-m distance. As such, the Commission believes that all trials to assess drug-delivery device accuracy, performance, range, sound emitted, and delivery rates should be done with the needle size that will ultimately be used to administer drugs. The Commission appreciates USGS's desire to test the devices in the field after completing initial trials in a controlled-range environment and also agrees with its concern regarding longer needles not being shed right away. Therefore, the Commission recommends that USGS (1) use a 12-cm needle for all device-assessment trials under objective 1, (2) field test the drug-delivery devices using a large piece of skin/blubber or carcass on sea ice rather than using live animals, and (3) collect the deployed darts to assess drug-delivery rate as part of objective 1 rather than as part of objective 2.

Although behavioral responses to being darted with a 2-cm needle may differ from responses to a 12-cm needle, the Commission suspects that the vessel approach, sound emitted from the drug-delivery device, and needle pricking the skin may have more significant effects on walrus behavior than the depth of needle penetration. Additionally, a dart with a 2-cm needle is more likely to be shed from the animal after impact than a 12-cm needle. Using a 2-cm needle to conduct the behavioral observations in objective 2, as proposed by USGS, combined with the Commission's recommendation to estimate drug delivery rates as part of objective 1, should reduce or eliminate the need to flush entire groups of walruses to dislodge and retrieve used darts, minimizing the disturbance of walruses during the proposed behavioral trials. If USGS prefers to collect all of the deployed darts, it could assess the feasibility of attaching a thin line to the darts during these trials to facilitate retrieval.

Engagement with co-management partners

The Commission understands that USGS consults with Alaska Native co-management partners on upcoming research projects, including the Eskimo Walrus Commission (EWC) for

research concerning walrus. To ensure the effective involvement of co-management partners, FWS should solicit feedback from EWC on this permit application if they have not done so already and USGS should attempt to resolve any concerns that EWC may have involving the proposed walrus research activities.

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

Sincerely,

Peter O. Thomas, Ph.D.,
Executive Director

Reference

Ølberg, R.-A., K.M. Kovacs, M.F. Bertelsen, V. Semenova, and C. Lydersen. 2017. Short duration immobilization of Atlantic walrus (*Odobenus rosmarus rosmarus*) with etorphine, and reversal with naltrexone. Journal of Zoo and Wildlife Medicine 48(4):972–978. https://doi.org/10.1638/2016-0232R.1