April 4th, 2025
National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce
Sent to National Marine Fisheries Service via ITP.Fleming@noaa.gov

Re: Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Small Boat Harbor Preconstruction Activities (Geotechnical Surveys) in St. George, Alaska, [RTID 0648-XE543]

Dear Jolie Harrison,

My name is Carina Walter and I am a marine biology and ecology student at the University of Miami. During my time in college, I have dedicated myself to learning about our natural world and have participated in research initiatives to support effective ecosystem policy decisions, which is why I am writing to you today about the notice published under the NOAA and Department of Commerce agencies. The request from the US army for authorization to "take" marine mammals in order to increase geotechnical drilling not only places stressors on an essential trophic level within aquatic ecosystems, but also furthers the potential of future harm to these animals with the increased risks that harbors pose to marine mammals. This notice, which allows for the noise harassment of harbor seals, northern fur seals, and killer whales in order to increase borehole drilling gives rise to numerous environmental concerns. In this example, "take" refers to the harassment and potential mortality of marine mammals located in St. George, Alaska. Given my academic background, these issues have compelled me to address the potential risks posed to marine mammal populations and marine ecosystems as a whole.

The Effects of Anthropogenic Noise on Marine Mammals

Behavioral Disruption

In the case of the proposed drilling for the small boat harbor, there would be two components; LPT and borehole drilling. During LPT drilling, a 340 pound impact hammer repeatedly strikes the seafloor from an approximate height of 30 inches to implant sample tubes at the bottom of the borehole. Then, motor powered borehole drilling may be used to insert a rod at the bottom of the LPT drilled hole to obtain rock samples. LPT drilling takes approximately 540 minutes to complete, in which the impact hammer is dropped 540 times, and borehole drilling takes approximately an hour to complete and requires 3,600 strikes. This process allows for the completion of one hole per day, and will be repeated 15 times to result in 15 total holes in the St. George harbor. In total, this project will utilize approximately 8,100 strikes from LPT drilling, and 54,000 strikes from the borehole drilling. Additionally, the barge used to carry the necessary drilling equipment into St. George also results in increased noise, at a level "around 190 decibels of noise…[that] can carry exceedingly far, impacting a broad swath of ocean as it travels" (Nelson). Not only will the noise emissions from drilling impact local animals, but the

noise from the barge used to transport and hold drilling equipment will also interfere with marine mammals.

It has been proven that anthropogenic noise acts as a major disruptor in mammalian migration, communication, and feeding. In one extreme case, scientists observed beluga whales in the Canadian high arctic "rapid[ly] swimming away from the ship for distances up to 80 km; [altering] surfacing, breathing, and diving patterns; chang[ing] group composition; and chang[ing] vocalizations" (National Research Council (US) Committee on Potential Impacts of Ambient Noise in the Ocean on Marine Mammals). Similar reactions are observed in killer whales and seals, both species which would be directly affected by the drilling in St. George. For local pinnipeds (seals), "Underwater noise from watercraft has the potential to mask or alter the communication of pinnipeds…[for example], gray seal (*Halichoerus grypus*) vocalizations recorded underwater in captivity overlapped with the noise spectrum of a vehicle/passenger ship" (Erbe et al.). These vocalizations are critical for intercommunication, feeding, and mating in pinniped communities, and the interference of these communications as a result of drilling could be detrimental to the species. In the case of killer whales, anthropogenic noise results in even further detriment as these cetaceans rely on echolocation for a majority of biological functions, including hunting and communication. "The underwater noise made by vessels can be particularly disruptive for animals like killer whales, which rely heavily on sound to accomplish important activities like hunting…as the noise from vessels increased, the whales' foraging success decreased. They spent more time searching for prey, but with less success" (West Coast Regional Office). Although these studies mainly reference vessel noise emissions, which have sound emissions ranging from "130 and 195 dB" (Morin), the proposed geotechnical drilling will result in a comparable emission of noise at approximately "142 to 145 dB" (Erbe and McPherson), and henceforth will result in similar effects to local pinniped and cetacean populations.

Ecosystem Disturbances

In the event that the sound emissions from barges and geotechnical drilling in St. George Harbor drives local killer whale and pinniped species away or reduces species viability, the resulting effect on the ecosystem as a whole would be detrimental. Reduced numbers of these prominent predators may result in a trophic cascade, an event in which "the impact of a predator on its prey's ecology trickles down one more feeding level to affect the density and/or behavior of the prey's prey" (Silliman and Angelini). As some of the main predators in Alaskan waters, killer whales and various pinniped species are essential to maintaining a healthy and balanced offshore ecosystem. "Without any predators to limit population growth, herbivorous prey species reproduce without check, and all of them are hungry. More herbivores eat more plants, and without anything to control them, they can quickly degrade their habitat. In extreme cases, [this] can lead to the complete destruction of the ecosystem" (Dolph). While this proposed geotechnical drilling is not a long term project, it emits noise at a frequency high enough to impede mammalian function, and potentially lead to death due to limited hunting ability or stress

or migration away from St. George. All of these possibilities would be detrimental long term, as species in lower trophic levels would begin to reproduce unchecked, throwing this ecosystem drastically off balance. Additionally, trophic imbalances lead to "overgrazed systems [that] tend to have lowered biodiversity and productivity, and less economic and aesthetic value" (Silliman and Angelini). One of Alaska's top economic industries is fishing, which is directly correlated with ecosystem health. "In 2019, more than 62,200 workers were directly employed in Alaska's seafood industry, earning $1.75 billion in total labor income… [and] the seafood industry contributed $5.7 billion in [total] economic output to Alaska's economy in 2019" (McKinley Research Group, LLC). It should be noted how important top predators such as pinnipeds and cetaceans are in conserving the delicate ecosystem which supports Alaska's fishing industry, an industry that not only provides sustenance to many around the United States but also contributes such a large sum of money to Alaska's economy.

Negative Impacts of Increased Coastal Development on Marine Mammals

Reduced Habitat

In addition to the negative impacts from drilling and vessel noise to mammals, it is important to also note the reduction in habitat as a result of the construction of the small boat harbor. The implementation of a harbor will reduce viable areas for pinnipeds, who regularly "haul out to regulate their body temperature, molt, interact with other seals, give birth, and nurse their pups" (NOAA Fisheries), all functions which are very important for the survival and continuation of various Alaskan seal species.

Unsafe Boating and Associated Risks to Local Mammals

Furthermore, the addition of a harbor will result in an increase in the number of boats frequenting the area. While many boaters will likely respect local mammals, boaters who do not abide by local laws may increase the number of boat strikes on any mammals within the harbor, and may also increase pollution within the area. Not only is this a danger to animals, but "collisions involving larger marine animals and small or medium sized boats can [also] damage vessels and cause serious, sometimes fatal, injuries to people, especially when the vessels are operating at high speeds" (NOAA). While these strikes are more prevalent in high traffic shipping zones, the addition of a harbor will likely result in an increase in mammal strikes within the area. Furthermore, areas with high boat traffic may lead to an increase in pollution. This includes "sewage, wastewater and bilge water, which is wastewater that is often contaminated with oil" (EPA), and trash. At low levels, these pollutants may not affect the ecosystem, but in the case of an oil spill or larger pollution event, there may be great consequences for local wildlife. However, while these are all valuable environmental concerns about the construction of the small boat harbor, it is impractical to suggest that the harbor's construction should not commence whatsoever. Instead, a call for increased boater safety regulations and pollution control within the harbor should be made in order to protect these valuable species.

Environmental Implications and Strategies for Protecting Alaskan Mammals

This public comment aims to point out the potential harms towards pinniped and cetacean species located in the construction area for the new harbor in St. George, Alaska. The primary concern of this project is the proposed allowance for harm to mammalian species, who play a large and irreplaceable role within the Alaskan ecosystem. The allowance of the "take" of some of these individuals to permit the building of a harbor could potentially disrupt local trophic webs, leading to a potential decrease in revenue from fishing, biodiversity, and the overall health of this ecosystem. While acknowledging the importance of the addition of this harbor, there is a need for mitigation of the environmental impacts as a result of this geotechnical drilling and implementation of a new harbor. This may include adding marine protected areas (MPAs), increasing boating regulations, or using quieter drilling techniques to limit noise disturbances. There is a great need to help these already endangered, yet essential species, and policy makers should take every precaution to ensure that these animals are protected.

Sincerely,
Carina Walter
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