

MARINE MAMMAL COMMISSION
4340 EAST-WEST HIGHWAY, ROOM 905
BETHESDA, MD 20814

27 December 2005

Mr. Guy McConnell
U.S. Army Corps of Engineers Alaska District
ATTN: CEPOA-EN-CW-ER
P.O. Box 6898
Anchorage, AK 99506-0898

Dear Mr. McConnell:

The Marine Mammal Commission is an independent federal agency established by the Marine Mammal Protection Act to provide oversight regarding federal marine mammal research, management, and protection activities. In keeping with those duties, the Commission has reviewed the Draft Environmental Impact Statement (DEIS) for Navigation Improvements to the Delong Mountain Terminal at Portsite, Alaska, and offers the following comments and recommendations.

The Delong Mountain Terminal is an industrial site that serves as a transfer station for ore from the Red Dog Mine, which is the world's largest zinc-producing mine. It is a unique facility in that there are no other industrial sites of any kind in the eastern Chukchi Sea area. Currently, large fuel and transport ships moor offshore, and fuel and ore are transferred using barges. The proposed navigation improvements are designed to provide cheaper, more efficient transfer of fuel and ore. As such, they will facilitate increased shipping traffic and require maintenance (e.g., dredging) activities for the foreseeable future. Alternatives evaluated in the DEIS include (1) no action, (2) adding an additional (third) barge, (3) constructing a breakwater to allow transfer to continue during poor weather conditions, and (4) constructing a 1,450-foot trestle to a new offshore loading platform, which would be directly accessible to large ships via a dredged channel and basin (the trestle-channel alternative). The last option is identified in the DEIS as the "tentatively recommended plan."

The DEIS provides a useful description of the tentatively recommended plan and several alternatives and of the potentially affected environment. However, it seriously understates the potential for the trestle-channel alternative to affect marine mammals and their habitats in the project area. There have been few detailed studies of the ecology of marine mammals in this region. The DEIS confuses a lack of published information on marine mammal use of the region with a lack of importance. For example, the DEIS includes maps of spring and fall migration patterns for seals, walrus, and whales that show little use of the project area. In fact, there have been virtually no studies of the migration patterns of these animals (e.g., via satellite tagging of individuals), and the references cited in the figures discuss general distribution patterns but not migrations. Similarly, the DEIS generally dismisses the area as unimportant for marine mammal feeding despite the fact that there have been no studies done to determine where these animals feed.

Contrary to the impression given that the project area is used only seasonally (e.g., during migration) or occasionally, the Commission believes that the region under consideration includes important marine habitats (e.g., shorefast ice, the spring nearshore lead system, the Point Hope

polynya, and productive nearshore waters) that are used regularly by a number of marine mammal species (bowhead, beluga, gray, and killer whales; harbor porpoises; ringed, bearded, and spotted seals; walruses; and polar bears). In this context, it is also worth noting that Cape Krusenstern is a National Monument, designated as such because of its offshore marine mammal resources, archaeological sites, and coastal ecology, and that a service road to facilitate trucking ore from the mine to the port already crosses the northern boundary of the monument. The proposed project is likely to adversely affect marine mammals and their habitats in a number of ways including:

- Noise resulting from the project will enter the marine environment. High-intensity noises such as those resulting from pile driving or blasting could cause physical damage to marine mammal hearing systems. Marine mammals will hear the noise and alter their behavior in response. It also may mask marine mammal calls, interfering with their communication.
- Dredging will alter characteristics of benthic habitats, influencing patterns of marine mammal prey distribution and abundance.
- The presence of physical structures (e.g., the proposed 1,450-foot trestle) will influence the physical environment, especially characteristics of sea ice. Arctic marine mammals use sea ice for many important functions and may be affected by any such changes.
- A number of project activities including ore loading, dredging, fuel transfers, operation of machinery, etc., have the potential to introduce contaminants into the marine environment with possible detrimental effects to marine mammals.
- Marine mammals may be physically injured or killed by ship strikes.

The DEIS consistently dismisses the possible importance of such effects by indicating that they will be “temporary,” “short-term,” and/or “local.” Although that may be true in some cases, the potential additive effects are of considerable concern. However, the DEIS provides no analysis of the possible cumulative impacts of the various project components. That is a major omission and, without such an evaluation, the impact analysis is inadequate.

The DEIS does make some reference to cumulative impacts in the context of additional human activities that may occur in the region. However, such impacts are generally dismissed with statements such as “there are no reasonably foreseeable future construction or shipping activities that would add to the existing effects to marine mammals in the Chukchi Sea” (e.g., DEIS, page 354). However, elsewhere (page 393) the DEIS states: “A number of possible future developments have been considered or proposed for the Northwest Arctic Borough (NAB) or adjacent areas of the North Slope Borough (NSB). They include commercial fisheries, other mines for extracting coal and non-ferrous metals, natural gas or coal production to power electrical generators for the region, a road system to connect various potential mining sites, and new or expanded seaports and airports.” Because these potential developments have been considered or proposed, they should be evaluated in a cumulative impacts analysis. This evaluation is particularly important because, if the Delong Mountain Terminal navigational improvements are completed as suggested in the DEIS, they will provide additional impetus for other development activities. Furthermore, for migratory species such as bowhead whales, the cumulative impacts analysis should not be restricted to the Chukchi Sea but should include human activities in the Bering Sea (e.g., commercial fishing that may cause entanglements) and the Beaufort Sea (e.g., exploration for and development of offshore oil and gas production). Also, the cumulative impacts analysis should consider the likelihood of changes

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due to climatic warming, which may influence marine mammal habitats and also result in changes in human activities such as shipping routes through the Arctic.

When a federal agency or a private entity anticipates that a proposed activity will “take” marine mammals, it must seek authorization from the appropriate resource agency: the National Marine Fisheries Service for most pinnipeds and all cetaceans and the U.S. Fish and Wildlife Service for walruses, sea otters, and polar bears. As the navigation improvement project is almost certain to result in marine mammal “takes” as defined by the Marine Mammal Protection Act, the Marine Mammal Commission recommends that the Army Corps of Engineers and/or the project operators seek the required incidental harassment authorizations from the appropriate agencies.

In conclusion, the Marine Mammal Commission recommends that the DEIS be significantly revised to (1) accurately represent what is and is not known about the biology of marine mammals in the project area; (2) clearly describe the individual and cumulative effects of the recommended plan on marine mammals and their habitats; and (3) for each marine mammal species, provide a thorough cumulative effects analysis that considers the potential impacts of all current and reasonably foreseeable human activities throughout the species’ range. The Commission further recommends that, unless the analyses recommended above can conclude that the project will have negligible impacts on marine mammals and their habitats and will have no unmitigable adverse impact on the availability of marine mammals for subsistence hunters, the final EIS should recommend the no-action alternative.

Additional explanation of our concerns is provided in the attachment. If you have any questions regarding these comments or recommendations, please contact me.

Sincerely,

A handwritten signature in black ink that reads "David Cottingham". The signature is written in a cursive, flowing style with a long horizontal stroke at the end.

David Cottingham
Executive Director

Enclosure

Cc: James W. Balsiger, Ph.D.
Ms. Kaja Brix
Rowan Gould, Ph.D.
Rosa Meehan, Ph.D.

Marine Mammal Commission: Additional comments on Draft Environmental Impact Statement for Navigation Improvements to the Delong Mountain Terminal at Portsites, Alaska

The DEIS identifies many of the potential threats to marine mammals that are commonly found near Portsites. Those threats include construction and operational noise, direct and indirect effects of dredging, physical structures, release of contaminants into the environment, and increased potential for ship strikes. In some cases, however, the DEIS incorrectly characterizes the potential extent of some threats. Here, we discuss the potential threats in more detail, highlighting issues that the DEIS should consider more thoroughly.

Noise

The DEIS suggests that construction noise may affect the behavior of bowhead whales and Beaufort Sea beluga whales, causing them to travel farther from shore as they migrate past Portsites, but those impacts will be minimal because they migrate in spring, earlier in the year than any construction activities are likely to occur. A similar rationale is used for bearded and ringed seals, leading to the conclusion that those species are not likely to experience significant population-level effects. Other marine mammals may migrate through or remain in the vicinity of Portsites throughout the summer and fall, including at least eastern Chukchi Sea beluga whales, gray whales, killer whales, spotted seals, and bearded seals. These animals could be harassed or injured by noise from construction activities. In particular, the loud noises created by pile driving could cause injuries to animals that are within some critical range of the sound source. All construction activities that create loud sounds should be conducted in such a way as to minimize the potential for causing injuries to marine mammals. Generally, such activities are conducted only after careful monitoring of a pre-defined “danger zone” to assess whether animals might be present within the critical range in which noise-related injuries may occur. With regard to pile-driving, in particular, the use of air bubble curtains has been effective at dampening the noise produced.¹ Operational noise also may disturb marine mammals although it is less likely to cause injury if it is continuous and if animals stay sufficiently far away that they are not exposed to high-intensity or high-energy sound. Careful monitoring of the distribution and abundance of marine mammals before, during, and after construction activities and peak operational seasons should be conducted to provide the necessary information to assess potential population-level effects.

Dredging

The preferred alternative presented in the DEIS involves substantial dredging to create a basin near the extended dock and a 3.5-mile-long channel from the basin to deeper water. The dredged material would be dumped in still deeper water offshore, covering up to 2,000 acres of the sea floor with more than a foot of transported material. These activities would substantially alter benthic habitat within the dredged and dumping areas, as well as downstream of both areas as suspended sediments are carried in the current. This habitat alteration would be perpetuated through repeated dredging necessary to maintain both the channel and basin. The DEIS focuses primarily on

¹ Wursig, B., C. R. Greene, Jr., and T. A. Jefferson. 2000. Development of an air bubble curtain to reduce underwater noise of percussive piling. *Marine Environmental Research* 49:79–93.

the direct effects of dredging on benthic fauna during dredging and dumping (e.g., bivalves that are dug up or buried). However, the indirect effects of dredging on the local benthic ecosystem may be more important. Those effects include changing the small-scale topography of the sea floor (e.g., adding trenches and mounds), the grain size of sediments, and the flow pattern along the bottom, all of which are factors that affect the species composition and abundance of benthic communities (including mobile species that the DEIS suggests would be largely immune to dredging effects). Benthic predators, including bearded seals, walruses, and gray whales, are likely to be affected by changes in the density, biomass, and species composition of benthic organisms available as prey.

The DEIS suggests that dredging will have little effect on bearded seals, which, the document claims, primarily forage on mobile prey. In fact, a study commissioned to assess ringed and bearded seal abundance, distribution, and diet near Portsight in 1999 and 2000 found that bearded seals consume a wide variety of benthic prey, including bivalves², which is consistent with the known diet of bearded seals elsewhere. In addition, the relatively high density of bearded seals in the area between Portsight and Cape Krusenstern suggests it is an important foraging ground for these animals³. As such, care should be taken to minimize potential impacts on the benthic ecosystem in that region. The predominantly northward currents should help to minimize impacts south of the dredging and dumping sites. Nevertheless, monitoring should be conducted before, during, and after dredging to evaluate potential population-level impacts on bearded seals and other marine mammal predators in the region.

Physical structures

The tentatively recommended plan, if completed, will result in a bridge-trestle extending perpendicular to the coast 1,450 feet out into Chukchi Sea. During the open-water season, marine mammals may be repelled from or attracted to the structure, which will alter their normal distribution and behavior patterns. During the winter the bridge-trestle will result in changes in ice conditions, which are acknowledged as a potential impact of the project but are poorly described in the DEIS. A primary concern is whether disruptions to the shorefast ice will affect the pattern of spring migration for bowheads and Beaufort Sea beluga whales. In addition, alterations of sea ice conditions in the region between Portsight and Cape Krusenstern could affect ringed and bearded seals, for which that region likely serves as an important foraging ground.

² Bengtson, J. L., L. M. Hiruki-Raring, and R. Richeson. 2001. Abundance, distribution, and diet of bearded seals (*Erignathus barbatus*) and ringed seals (*Phoca hispida*) near the Delong Mountain Terminal (Portsight), Alaska. Report to U.S. Army Corps of Engineers, Anchorage, AK.

³ Bengtson, J. L., L. M. Hiruki-Raring, M. A. Simpkins, and P. L. Boveng. 2005. Ringed and bearded seal densities in the eastern Chukchi Sea, 1999-2000. *Polar Biology* 28:833-845.

Contaminants

The transfer of ore condensate and fuel at Ports site provides ample opportunity for the release of contaminants into both the air and water. As the DEIS points out, a variety of contaminants currently are released at Ports site, primarily as dust from the ore condensate. Such contamination presumably will continue and in some cases may increase with construction of the proposed navigation improvements. In addition, proposed dredging could move contaminated sediments from Ports site into deeper water, not only contaminating that new region of the benthic ecosystem but also re-suspending contaminated sediments into the water column, which would then be transported downstream. In this regard we note that, although results shown in the DEIS suggest generally low levels of heavy metal contaminants, it appears that most of the data were from samples collected at or near the surface of the sediment. The DEIS states (page 149): "It is notable that two subsurface sediment samples collected in the shallow portion of the potential shipping channel (1 to 13 feet deep into the bottom material) contained the highest concentrations of arsenic, barium, mercury and selenium, and a third subsurface sample contained the highest concentration observed for copper." Based on the description of the dredging project, it appears that sediment will be dredged down to as much as 39 feet below the current surface, and there is a real possibility that harmful levels of contaminants may occur in those deeper sediments. This possibility should be thoroughly discussed in the DEIS. In addition, we encourage the Corps to reconsider other options for disposal of dredged material, including a detailed comparison of potential biological impacts of the recommended alternative with alternatives such as disposal in a coastal lagoon or onshore.

In addition to heavy metals and other contaminants from ore condensate, the process of fuel transfers and operation of machinery provide opportunity for fuel or oil spills. The DEIS describes the potential for such spills and includes the results of spill propagation models. Clearly, measures must be in place to minimize the risk of such events and to clean up spills quickly and efficiently, should they occur. In particular, any measures currently in place should be expanded to reflect the increased activity that likely will follow any navigation improvements.

Because many contaminants bioaccumulate in food webs, the highest levels of contaminants often are found in apex predators, including many marine mammals. High contaminant levels may adversely affect the health of individual animals and could affect populations by decreasing reproductive rates or increasing mortality rates. In addition, all the marine mammals likely to be affected by contamination at Ports site are harvested for subsistence by Native Alaskans. Bearded seals, in particular, are a favored subsistence food and are harvested by villagers all along Alaska's northern coasts. To ensure the health of both marine mammals and subsistence users, contaminant levels in air, water, and sediments near Ports site (including those in dredged sediments) should be monitored, along with levels in locally harvested marine mammals. If potentially harmful levels of contaminants are found, project operators should notify appropriate federal, state and local Native officials to determine the appropriate actions to take.

Ship strikes

In addition to increased noise, construction activities likely will require intense ship traffic, increasing the risk of collisions with whales. The DEIS mentions this concern with regard to gray whales primarily but largely dismisses the issue because no collisions have been reported to date. However, there is no requirement that operators report whale collisions, so the fact that none have been reported has little value. Both gray and bowhead whales are at risk of being hit by ships in areas where their migration routes or foraging grounds intersect the shipping route. In addition, other whales, such as North Pacific right whales, may be at risk as ships transit through the southern Bering Sea en route to Portsite. Recent studies suggest that the risk of ship strikes may be reduced substantially if ships travel at speeds of 12 knots or less when traversing areas where whales are likely to occur (e.g., within North Pacific right whale critical habitat, which likely will be designated soon, and along bowhead and gray whale migration routes)⁴. Posting observers to monitor a ship's path for whales also may help but only under conditions with good visibility (i.e., daylight and calm seas).

Authorizations

The letter from the National Marine Fisheries Service (dated 12 September 2003) attached to the DEIS states that the proposed alternatives are unlikely to adversely impact bowhead whales, and no further consultation under section 7 of the Endangered Species Act is necessary. However, an incidental harassment authorization under the Marine Mammal Protection Act is required if, as we expect, individual animals from a number of whale and seal species will be harassed or disturbed during construction activities. The Marine Mammal Commission recommends that the Corps and the project operators apply for an incidental harassment authorization under the Marine Mammal Protection Act. One of the conditions of an authorization would likely be that the responsible party, whether the Army Corps of Engineers or the operators of the Delong Mountain Terminal, develop and implement a plan to effectively monitor marine mammals in the area in a manner sufficient to detect potentially significant effects of construction activities. The Commission would be pleased to review the monitoring plan if that would help.

⁴ Laist, D. W., A. R. Knowlton, J. G. Mead, A. S. Collet, and M. Podesta. Collisions between ships and whales. *Marine Mammal Science* 17:35–75.