



United States Department of the Interior

UNITED STATES FISH AND WILDLIFE SERVICE

Fairbanks Fish and Wildlife Field Office

101 12th Avenue, Room 110

Fairbanks, Alaska 99701

March 7, 2011



Mr. Christopher Floyd
U.S. Army Corps of Engineers
ATTN: CEPOA-EN-CE-ER (FLOYD)
Joint Base Elmendorf-Richardson, Alaska 99506-0898

Re: Section 7 consultation for Kogotpak Landfill FUD remediation project

Mr. Floyd:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion (BO) based on our review of the proposed action located on the North Slope of Alaska in accordance with section 7 of the Endangered Species Act (ESA), as amended (16 U.S.C. 1531 et seq.). Your January 24, 2011 request by Marsh Creek, LLC (Marsh Creek) for formal consultation was received on the same date.

This biological opinion is based on information provided by Marsh Creek on January 24, 2011, emails from the above date to the date of this letter, peer reviewed literature, a meeting on February 9, 2011 with Marsh Creek, and reports regarding the species present in the action area. A complete administrative record of this consultation is on file at the Fairbanks Fish and Wildlife Field Office.

THE PROPOSED ACTION

We understand that the U.S. Army Corps of Engineers (USACE) proposes to clean up the Kogotpak Landfill Formally-used Defense site (FUD) on the Arctic National Wildlife Refuge (Refuge). The USACE already received a Special Use Permit (SUP) from the Refuge, and we finished consultation with the Refuge on that action on September 30, 2010. We concurred that the action was not likely to adversely affect the spectacled (*Somateria fisheri*) and the Alaska-breeding population of the Steller's eider (*Polysticta stelleri*) because of low abundances of these species in that area. However, we were unable to make a determination on the effect of issuing the SUP on polar bears or polar bear critical habitat because the Refuge did not provide us with a detailed project description at that time. Therefore, re-initiation of consultation followed a description of the proposed action being provided.

Previous activities at Kogotpak Landfill

Investigations and corrective actions have occurred at the Nuvagapak Point DEW Line site and the Kogotpak Landfill over the past 22 years (Figure 2). In 1989, soil and surface water samples were collected and analyzed for contamination. The first Nuvagapak removal action was

performed in 1994 when debris was taken to the main cantonment area by boat and later removed from the site by barge. In 2000, another cleanup action involving the Nuvagapak main cantonment area was carried out, but this work did not involve the Kogotpak River Landfill. A sampling trip to the Nuvagapak site occurred in the summer of 2003. No samples were collected from the Kogotpak River area; however, the mouth of the Kogotpak River was examined for debris. In 2007, debris was described and documented by photographs and samples were taken at the Kogotpak River Landfill. The last site visit occurred in 2009; however, no samples were collected at that time.

The U.S. Army Corps of Engineers (USACE) contracted with Marsh Creek to complete removal of debris and contaminated soil from the Kogotpak River landfill for offsite transport and disposal at permitted facilities.

Schedule

During late March/early April, crews are scheduled to complete project mobilization activities to allow full development of shorefast lagoon ice. A preliminary schedule organized by winter 2011, summer 2011, and winter 2011 is presented below (minor changes to the schedule may occur due to weather or ice conditions). Details for planned activities during each of these periods are presented later in this Project Description.

Permit closeout letters and a corrective action report will be prepared summer/fall 2011 and summer 2012 as required.

- Late March/early April 2011 – Mobilize equipment from Deadhorse and staged onsite
- July/August 2011 – Mobilize crews and complete onsite environmental services
- Late March/early April 2012 – Mobilize from Deadhorse to demobilize equipment and debris/project wastestreams

Project activities – winter 2011

Mobilization to the project site will be by cat-train traveling the coastal shorefast ice and frozen lagoons between the Endicott causeway at Prudhoe Bay and the Kogotpak project site (Figure 2). The cat-train will include the following equipment.

- Case Steiger tractor, rubber tracked (3 each)
- Case 977 loader, steel tracked (1 each)
- Cat D-7 dozer, steel tracked (1 each)
- Tucker or Mattrack-equipped Pickup (1 each)
- Fuel sleigh (4,800 gallons) (2 each)
- 8-person ski camp
- Freight sleds (skis) or trailers (rubber tracks) (8 each)

Equipment travel will include a roundtrip between the Endicott causeway (Prudhoe Bay) and the project site in the winters of 2011 and 2012. Crews will travel on the ice from Endicott to Brownlow Point where they will rendezvous with other workers remediating a FUD site at this location (consulted on in a separate BO). All workers will then continue east to Kogotpak; the field crew will travel on ice back to Endicott once equipment is staged. The field crew will return via plane in summer of 2011 to remediate the landfill and will leave in the same manner. Field crews will travel back to Kogotpak from Endicott on ice to demobilize the site in winter of 2012; they will bring equipment back to Endicott in the same manner.

Fuel will be transported in fuel sleighs with secondary containment. Additional fuel will be obtained in Kaktovik. Solid waste and graywater will be backhauled to Deadhorse for disposal at permitted facilities. At Kogotpak, crews will unload and stage heavy equipment, bins, tooling and other supplies, hard-sided camp units, and drummed diesel (stored in secondary containment inside a secured connex). These items will be positioned along the road heading west from the site away from the river floodplain. Some items, such as the hard-sided camp, may be placed at the Nuvagapak main cantonment area or airstrip.

Project Activities – summer 2011

In July 2011, a crew will return to (and leave) the site by plane to complete the following excavation and debris removal work:

- At the request of the Refuge as a means of minimizing impacts on vegetation, field crews will travel between the landing strip at Nuvagapak Point (where the camp and some equipment will be staged) and the Kogotpak landfill via boat.
- Approximately 60 tons of soil and 60 tons of debris are expected to be removed from the landfill. It is likely that the excavation will be limited to less than 3 feet below the ground surface since most of the debris appears to have been disposed at the surface before being covered with gravel/organic material.
- Upon completion of excavation, Marsh Creek will collect confirmation samples from the excavation bottom to ensure the remaining soil does not exceed project cleanup levels.
- The excavated area will be smoothed to gently contour up to the surrounding ground surface and allowed to naturally revegetate.
- Debris, including drums, batteries, capacitors, and metal scraps, will be removed. Dimensional lumber that is fastened to pieces of debris may be removed; however, wood not considered debris (driftwood and unpainted, uncontaminated dimensional lumber, etc) will be left on the surface at the site.
- Abandoned drums will be crushed, placed in a 20-foot long metal scrap bin, and stored for later removal. Drums will be managed as scrap metal as long as they are empty (e.g., don't contain product/fluid). If drums are not empty, workers will prepare them for recovery during winter 2012.

Project activities – winter 2012

During winter 2012, crews will return to the site following the same coastal route with the cat-train to demobilize the project equipment, tooling, and packaged waste. The cat-train will include the following equipment.

- 5 Case Steiger tractors, rubber tracked
- 1 Case 977 loader, steel tracked
- 1 Cat D-7 dozer, steel tracked
- 1 Tucker or Mattrack-equipped Pickup
- 3 fuel sleighs that can each carry 4,800 gallons
- 14-person ski camp
- 12 Freight sleds (skis) or trailers (rubber tracks)

From Deadhorse, the debris and contaminated soils will be transported for proper disposal at permitted facilities. Empty drums may be transported to a recycling facility in Fairbanks.

Equipment travel during this demobilization phase will be limited to a single roundtrip between the Endicott causeway (Prudhoe Bay) and the project site. The field crew will adhere to mitigating measures identified in the project-specific letter of authorization issued by the USFWS and wildlife interaction plan.

The Marine Mammals Management office (MMM) in Anchorage, Alaska Marsh Creek will issue Marsh Creek one Letter of Authorization (LOA) for intentional take (harassment or “hazing”) under 101(a)(4)(A), 109(f), and 112(c) of the Marine Mammal Protection Act, as amended (MMPA) each year of the project. Techniques must not cause the death or serious injury to polar bears. Approved techniques include bear monitors, air horns, electric fences, chemical repellents, acoustic recordings, vehicles, and projectiles (e.g., cracker shells, bean bags, rubber bullets and/or “screamers”). Prior to conducting harassment activities, operators must reduce/eliminate attractants, secure the site and notify a supervisor and move all personnel to safety, ensure the bear has an escape route, and ensure communication with personnel.

Marsh Creek cannot apply for a LOA under the Beaufort Sea Incidental Take Regulations (ITRs) for this action because these ITRs only apply to oil and gas-related activities. However, Marsh Creek has received LOAs for oil and gas-related activities in the past and is therefore familiar with the usual requirements in LOAs. Marsh Creek has spoken with MMM staff to minimize incidental take of polar bears and will adhere to the mitigating measures below. Marsh Creek will also follow the wildlife interaction plan developed by the Refuge.

1. The permittee and their contractors must cooperate with the Service and other designated federal, state, or local agencies to monitor the impacts of their activities on polar bears.
2. The permittee or their contractors shall allow a Service observer access to the activity site to monitor the impacts of the activity on polar bears.
3. Permittee and their contractors are required to adhere to the requirements commonly found in LOA(s) for take of small numbers of polar bears incidental to and/or harassment of polar bears during project activities.
4. The permittee and their contractors are required to review educational materials explaining polar bear denning habitat characteristics in order to enable them to recognize and avoid these areas while traveling and choosing camp sites (materials are available from the Refuge).
5. All activities are prohibited within 1 mile of known polar bears dens (including those encountered in the course of permitted activities). Locations of known polar bear dens can be obtained from MMM.
6. All observed polar bear dens must be reported to the Fairbanks ES office at 907-455-1871 or shannon_torrence@fws.gov as soon as possible.
7. Should occupied dens be identified within one mile of activities, work in the immediate area will cease and the Service must be contacted for guidance before proceeding with activities. The Service will evaluate these instances on a case-by-case basis and determine the appropriate action.
8. The permittee or their contractors must designate a qualified individual or individuals to observe, record, and report effects of the activity on polar bears to the Service within 24 hours of visual observations. Evidence of polar bears, such as tracks, carcass, or dens will also be reported.

9. Every polar bear observed shall be recorded on a polar bear observation form. The permittee and their contractors shall obtain this form from the Service.
10. The permittee or their contractors shall submit a polar bear observation report to the Refuge and the Fairbanks ES office within 60 days of completion of field operation. This report shall contain information on all evidence of polar bears, including active den locations, and the actions taken by the permittee on the adherence of these stipulations.
11. A set-back of ½ mile from all barrier island and bluff (coastal and river) habitats within designated polar bear critical habitat shall be maintained for all operations unless the Service allows for mitigation of this stipulation through the ESA consultation process.

THE ACTION AREA

The action area includes the land at the project site, the sea ice where travel will occur, and the area within which vehicles could be heard by polar bears. This general area includes the travel route from Endicott to the FUD site at the Kogotpak Landfill.

EFFECTS OF THE ACTION ON LISTED AND CANDIDATE SPECIES

Project effects on Steller's and spectacled eiders

The U.S. Fish and Wildlife Service (Service) listed the spectacled eider (*Somateria fisheri*) on May 10, 1993 (58 FR 27474) and the Steller's eider (*Polysticta stelleri*) as threatened on June 11, 1997 (62 FR 31748). Steller's and spectacled eiders can occur in the project area; however, they occur in the region in low numbers and breed exclusively from late May through September. Travel to and from the FUD site will take place in winter when most eiders are not present; therefore, direct effects to eiders during travel are unlikely to occur and are discountable. Eiders are not likely to nest at the developed airport site, and few, if any, eiders are likely to nest on the disturbed landfill land. The likelihood of disturbing nesting eiders is very small because travel during the summer from the landfill to the airport will occur via boat. Some eiders may be encountered by boat travel, but these eider will likely just move away from the disturbance. Thus, disturbance of eiders and impacts to nesting habitat is unlikely and would be very small if it occurred. Additionally, remediation of this site will reduce the risk of environmental impacts from contaminated soil and other toxins. We therefore expect effects on eiders through disturbance and impacts to nesting habitat to be discountable, insignificant, and potentially beneficial.

Summary

Because effects of the proposed action on Steller's and spectacled eiders will likely be discountable, insignificant, and potentially beneficial, we expect the proposed activities are not likely to adversely affect these species.

Project effects on Steller's and spectacled eider critical habitat

The Service designated critical habitat for the spectacled eider on February 6, 2001 (66 FR 9146) and on February 2, 2001 (66 FR 8850) for the Steller's eider. This project does not take place in or near spectacled or Steller's eider critical habitat. Therefore, we expect that the proposed activities will have no effect on critical habitat for these species.

Project effects on walrus

The Pacific walrus (*Odobenus rosmarus divergens*) became a candidate species on February 10, 2011 (76 FR 7634). Pacific walrus are not known to occur in the action area. Because field crews are extremely unlikely to encounter a walrus, effects of the proposed action on walrus are discountable.

Summary

Because effects of the proposed action on walrus are discountable, we expect the proposed activities are not likely to jeopardize the continued existence of the Pacific walrus.

POLAR BEAR STATUS

Due to threats to its sea ice habitat, on May 15, 2008 the Service published a Final Rule in the Federal Register listing the world-wide population of the polar bear (*Ursus maritimus*) as threatened (73 FR 28212) under the ESA. In the U.S., the polar bear is also afforded protection under the MMPA and is managed by MMM.

Polar bears are widely distributed throughout the Arctic where the sea is ice-covered for much of the year. Sea ice provides a platform for hunting and feeding, for seeking mates and breeding, for denning, for resting, and for long-distance movement. Polar bears primarily hunt ringed seals, which also depend on sea ice for their survival, but they also consume other marine mammals (73 FR 28212).

The total number of polar bears is estimated to be 20,000-25,000 with 19 recognized management subpopulations or “stocks” (Obbard et al. 2010). The International Union for Conservation of Nature and Natural Resources, Species Survival Commission (IUCN/SSC) Polar Bear Specialist Group ranked 11, four, and three of these stocks as “data deficient,” “reduced,” and “not reduced,” respectively (Obbard et al. 2010). The status designation of “data deficient” for 11 stocks indicates that the estimate of the worldwide polar bear population was made with known uncertainty.

Warming-induced habitat degradation and loss are negatively affecting some polar bear stocks, and unabated global warming will ultimately reduce the worldwide polar bear population (Obbard et al. 2010). Loss of sea ice habitat due to climate change is identified as the primary threat to polar bears (Schliebe et al. 2006, 73 FR 28212, Obbard et al. 2010). Patterns of increased temperatures, earlier spring thaw, later fall freeze-up, increased rain-on-snow events (which can cause dens to collapse), and potential reductions in snowfall are also occurring. In addition, positive feedback systems (i.e., sea-ice albedo) and naturally occurring events, such as warm water intrusion into the Arctic and changing atmospheric wind patterns, can amplify the effects of these phenomena. As a result, there is fragmentation of sea ice, reduction in the extent and area of sea ice in all seasons, retraction of sea ice away from productive continental shelf areas throughout the polar basin, reduction of the amount of heavier and more stable multi-year ice, and declining thickness and quality of shore-fast ice (Parkinson et al. 1999, Rothrock et al. 1999, Comiso 2003, Fowler et al. 2004, Lindsay and Zhang 2005, Holland et al. 2006, Comiso 2006, Serreze et al. 2007, Stroeve et al. 2008). These climatic phenomena may also affect abundances of seals, the polar bear’s main food source (Kingsley 1979, DeMaster et al. 1980, Amstrup et al.

1986, Stirling 2002). However, effects on polar bears will likely vary temporally and spatially, and uncertainty regarding their prediction makes management difficult (Obbard et al. 2010).

Range-wide threats and uncertainties

Subpopulations of polar bears face different combinations of human-induced threats, making conservation and management of polar bears challenging (Obbard et al. 2010). The largest human impact to polar bear populations is likely harvest, but for most harvested subpopulations, harvest is regulated and/or monitored (Obbard et al. 2010). Other threats include accumulation of persistent organic pollutants, tourism, human-bear conflict, and increased development in the Arctic (Obbard et al. 2010). How these factors interact with natural forms of mortality and climate change to affect the status of the polar bear worldwide is uncertain.

Summary

Loss of sea ice due to climate change is the largest threat to polar bears worldwide, and uncertainty exists regarding the numbers of bears in some stocks and how other human activities interact to ultimately affect the worldwide polar bear population.

ENVIRONMENTAL BASELINE OF POLAR BEARS

Only the southern Beaufort Sea stock occurs in the action area (Figure 1). The southern Beaufort Sea polar bear population is distributed across the northern coasts of Alaska, Yukon, and Northwest territories of Canada. Estimates of the population size of the southern Beaufort Sea stock were 1,778 from 1972 to 1983 (Amstrup et al. 1986), 1,480 in 1992 (Amstrup 1995), and 2,272 in 2001 (Amstrup, USGS unpublished data). Declining survival, recruitment, and body size (Regehr et al. 2006, Regehr et al. 2009, Rode et al. 2010), and low population growth rates during years of reduced sea ice (2004 and 2005), and an overall declining population growth rate of 3% per year from 2001 to 2005 (Hunter et al. 2007) indicate the southern Beaufort Sea stock is now declining, and Regehr et al. (2006) estimated the southern Beaufort Sea stock to be 1,526. The status of this stock is classified as 'reduced' by the IUCN (Obbard et al. 2010) and 'depleted' under the MMPA.

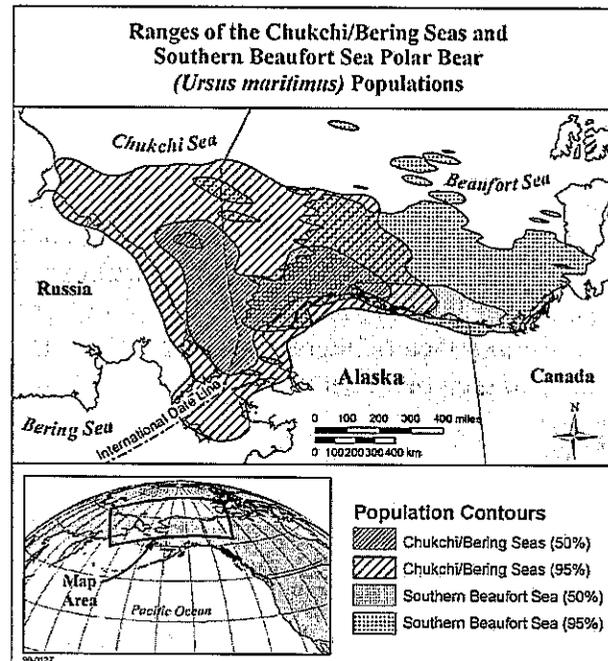


Figure 1. Ranges of Alaska polar bear populations (USFWS 2009)

Subsistence harvest

Annually, most human-caused deaths of polar bears in the southern Beaufort Sea stock are likely caused by subsistence hunting. Harvest quota levels are set by the Inuvialuit-Inupait (I-I) council for the southern Beaufort Sea stock. The I-I council recently set a quota of 70 polar bears (email T. DeBruyn, August 13, 2010) based on a population estimate of 1,526 (Regehr et al. 2006) from 1800 (Amstrup et al. 1986, email T. DeBruyn, August 13, 2010). The reported annual average combined (Alaska-Canada) harvest for the southern Beaufort Sea from 2004 to 2009 was 44.

More polar bears may be harvested near Kaktovik, the only village in the action area, than other portions of the action area. However, only one polar bear was harvested near this village in 2009, and none were harvested in 2010.

Denning in the project area

Given the timing of this project, denning polar bears may be present in the action area and emerge from their dens and vacate the denning area as they travel to the coast to hunt during the proposed action. Although dens occur at relatively low densities in most of the action area, the the FUD site contains potential denning habitat; however, no known polar bear dens have been documented at the FUD site (Maps 2 and 3).

Other polar bears in the action area

Post-emergent sows with very young cubs, other family groups, and transient bears may also be present in the action area. Sows with cubs typically emerge from dens from mid March to early April and travel to the coast to hunt. Most post-emergent sows have not eaten since the preceding fall, and have lost a significant amount of body weight. Their cubs will be small, and sows will be very protective of them. Sows with yearling or older cubs and transient polar bears may be travelling through, resting, or feeding in the action area.

Polar bear research

Currently there are several ongoing research programs studying polar bears in the action area. The long-term goal of these research programs is to gain information on the ecology and population dynamics of polar bears to help inform management decisions, especially in light of climate change. These activities may cause short-term adverse effects to individual polar bears targeted in survey and capture efforts and may incidentally disturb other those nearby bears. In rare cases, research efforts may lead to injury or death of polar bears. Polar bear research is authorized through permits issued under the MMPA, which authorize the maximum number of bears to be harassed, subjected to biopsy darting, captured, etc. Concurrent with this proposed action, U.S. Geological Survey researchers may be conducting biopsy dart and capture work in the action area. Researchers are aware of the proposed activity and can minimize disturbance of bears by modifying study techniques to avoid chasing them into the path of field crews or work sites.

Other threats

Polar bear viewing at sites such as the whale bone piles (i.e., near Kaktovik) may result in disturbance of polar bears. Activities associated with the oil and gas industry have the potential to impact polar bears and their habitat. Oil and gas activities are regulated and authorized through the issuance of Incidental Take Regulations (ITRs) under the MMPA, and since the ITRs went into effect in 1993, there has been no known instance of a polar bear being killed as a result of industrial activities (USFWS 2008).

Summary

The action area may contain low densities of family groups and transient bears, and may contain some denning bears that have not yet emerged. However, the primary concern for polar bears in the action area is loss of sea ice. While other threats (e.g., disturbance from industrial activities) are managed and not currently thought to be significant threats to the southern Beaufort Sea stock, each could become more significant in combination with future effects of climate change and the resultant loss of sea ice.

EFFECTS OF THE ACTION ON POLAR BEARS

This section of the BO provides an analysis of the effects of the proposed action on polar bears. Direct effects (those immediately attributable to the action), indirect effects (those caused by the proposed action, but which will occur later in time, and are reasonably certain to occur) are considered. Finally, the effects from interrelated and interdependent actions are also considered. These effects will then be added to the environmental baseline in determining the proposed action's effects to the species or its critical habitat (50 CFR Part 402.02).

Beneficial effects

Beneficial effects are those effects of an action that are wholly positive, without any adverse effects, on a listed species or designated critical habitat. Although the proposed action will contribute beneficially to polar bear management by removing contaminants from the environment, the positive effects will not be accomplished without some adverse effects, and therefore do not meet the definition of beneficial effects.

Direct effects

Winter activities

Noise from or the visual stimuli of a tracked vehicles travelling across the ice could deflect transient bears (e.g., lone bears and females with cubs > 1 year old) and cause them to retreat. Family groups (females with cubs) may be more susceptible to disturbance than other demographic groups (Andersen and Aars 2008). However, because vehicular travel will be limited to a single roundtrip between the Endicott and the FUD site each winter, these disturbances, if they occur, will be short-term behavioral changes. Cat-train vehicles will not pursue bears, even if they retreat along the same directional heading of the vehicle. Because the length of travel routes of deflected bears is unlikely to be significantly longer than their original route, long-term effects to fitness of bears are extremely unlikely to occur. Therefore, we anticipate project effects of ice travel on transient bears to be discountable.

The proposed action will occur towards the end of the maternal denning period (mid November to early April) for southern Beaufort Sea polar bears. Females typically emerge from mid March to early April with on or two cubs and travel to the coast to hunt. Most post-emergent sows have not eaten since the preceding fall, and they have lost a significant amount of body weight. Their cubs will be small, and the females will be very protective of them. These bears may be more susceptible to disturbance than other demographic groups. However, post-emergent females with cubs are not as curious as other polar bear demographic groups; therefore, most females will most likely avoid encounters with humans as a protective measure. Additionally, field crews will avoid pursuing and hazing family groups.

The probability of encountering an active maternal den for most of the action area is low, especially on ice where most travel will occur (Maps 1 and 2). Some denning habitat exists at the project area, but there have been no documented maternal dens (Map 3). Because field crews will only be present in winter at this site for a short time (i.e., as long as it takes them to stage equipment in 2011 and demobilize in 2012), because the proposed action includes measures to minimize disturbance of polar bears, and because there have been no documented dens in the area, the probability of encountering a maternal den is low. To minimize impacts, if field crews knowingly encounter an active den, they will cease activity in the area for one mile until the family group emerges.

Summer activities

Disturbance within barrier island critical habitat – Polar bears use the coast as a travel corridor during summer (C. Perham, MMM, pers. comm.). The presence of humans and noise associated with excavation at the FUD site, including the boat used to travel between the camp and work site may also temporarily deflect bears from their travel routes. These affects are likely to last only as long as the field crew is present. Transient polar bears will likely travel around these sites, but it is possible for human-polar bear interactions to occur (see *Hazing of polar bears* below).

Hazing of polar bears -- For safety reasons, field crews are authorized to haze bears using non-lethal methods to keep them from approaching camps and the work site. Disturbance of mothers with young cubs is not recommended. Intentionally hazing polar bears may temporarily disturb polar bears and deflect them from their route. Bears will likely experience disturbance if hazed,

but the approved hazing methods are unlikely to cause serious bodily injury. Additionally, intentional hazing may 'teach' polar bears to avoid human camps and work sites in the future.

Indirect effects

Indirect effects of the action are defined as "those effects that are caused by or will result from the proposed action and are later in time, but are still reasonably certain to occur" (50 CFR §402.02). Because we expect disturbance of polar bears to occur only when field crews are present in polar bear habitat, we do not expect any indirect effects to occur.

Interrelated and interdependent effects

Interdependent actions are defined as "actions having no independent utility apart for the proposed action," while interrelated actions are defined as "actions that are part of a larger action and depend upon the larger action for their justification" (50 CFR §402.02). The Service can identify no effects from interdependent or interrelated actions resulting from this project.

Summary of effects:

The proposed action may affect polar bears via disturbance, especially transient polar bears during the summer near the FUD site.

CUMULATIVE EFFECTS

~~Under the Act, cumulative effects are the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the Action Area considered in this BO. Future Federal actions that are unrelated to the proposed action are not considered because they require separate consultation under the Act.~~

The possibility exists that some private citizens may disturb polar bears as they travel in the area while hunting, camping, etc. Most of the action area is remote, and these effects would be very low. Disturbance from private citizen and tourists near Kaktovik is likely higher than other portions of the action area.

CONCLUSION

The regulations (51 FR 19958) that implement section 7(a)(2) of the Act define "jeopardize the continued existence of" as, "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." After reviewing the current status of the polar bear, the environmental baseline for the Action Area, the effects of the proposed action, and cumulative effects, it is the Service's biological opinion that the issuance/revision of a Refuge permit, as proposed, is not likely to jeopardize the continued existence of polar bears.

The following information led us to the conclusion that this action, as proposed, is not likely to jeopardize the continued existence of this species:

1. Measures are in place to minimize effects of disturbance on polar bears. If polar bears are encountered and disturbed, the disturbance is likely temporary. Therefore, the proposed action is unlikely to significantly affect the reproduction, numbers, or distribution of polar bears.
2. There is a finite limit to potential impacts of disturbance, and we believe this limit is well below that which would result in significant population-level impacts.

STATUS OF POLAR BEAR CRITICAL HABITAT

The Service designated polar bear critical habitat on November 24, 2010 (75 FR 76086). The PCEs of critical habitat for the polar bear are:

- 1) **Sea-ice habitat** used for feeding, breeding, denning, and movements, which is sea ice over waters 300 m (984.2 ft) or less in depth that occurs over the continental shelf with adequate prey resources (primarily ringed and bearded seals) to support polar bears.
- 2) **Terrestrial denning habitat**, which includes topographic features, such as coastal bluffs and river banks, with the following suitable macrohabitat characteristics:
 - a) Steep, stable slopes (range 15.5–50.0), with heights ranging from 1.3 to 34 m (4.3 to 111.6 ft), and with water or relatively level ground below the slope and relatively flat terrain above the slope;
 - b) Unobstructed, undisturbed access between den sites and the coast;
 - c) Sea ice in proximity to terrestrial denning habitat prior to the onset of denning during the fall to provide access to terrestrial den sites; and
 - d) The absence of disturbance from humans and human activities that might attract other polar bears.
- 3) **Barrier island habitat** used for denning, refuge from human disturbance, and movements along the coast to access maternal den and optimal feeding habitat, which includes all barrier islands along the Alaska coast and their associated spits, within the range of the polar bear in the United States, and the water, ice, and terrestrial habitat within 1.6 km (1 mi) of these islands (no-disturbance zone).

Critical habitat does not include manmade structures (e.g., houses, gravel roads, generator plants, sewage treatment plants, hotels, docks, seawalls, pipelines) and the land on which they are located existing within the boundaries of designated critical habitat on the effective date of this rule.

As described in the sections, *Polar Bear Status* and *Environmental Baseline of Polar Bears*, sea ice, including ice designated as critical habitat, is rapidly diminishing. Terrestrial denning locations in Alaska do not appear to be a limiting factor. However, rain-on-snow events may decrease den quality, and later onset of freeze-up in the fall may limit sea ice in proximity and therefore access to terrestrial denning habitat (FR 72 1064). Erosion of barrier islands and the Arctic shoreline, presumably caused by climate change (Mars and Houseknecht 2008), may be affecting terrestrial denning habitat by changing land features.

Human activities such as ground-based vehicular traffic and low-flying helicopters and planes occur in polar bear critical habitat. These activities may temporarily create disturbance between den sites and the coast, and may temporarily degrade the ability of barrier island habitat from being a refuge from human disturbance. However, these activities are usually infrequent and have short-term effects.

Summary

While other activities may diminish the quality of polar bear critical habitat, the primary factor affecting its status is loss of the sea ice unit from climate change.

POLAR BEAR CRITICAL HABITAT ENVIRONMENTAL BASELINE

As the action area contains portions of all three critical habitat units and PCEs, the baseline of the action area is similar to the status of critical habitat as a whole. Portions of the project take place in the "no disturbance zone" of barrier islands. Snow drifts along bluffs that provide denning habitat and sea ice will be present during this project. Because of its remoteness, the area is largely free of human disturbance and provides polar bears unobstructed, undisturbed access between dens and the coast. Oil and gas activity occurs at a very low density along the travel route in the action area. Some subsistence hunting may occur at a low frequency, and polar bear research may occur in this area during the proposed time frame of this project.

EFFECTS OF THE ACTION ON POLAR BEAR CRITICAL HABITAT

This BO does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 C.F.R. 402.02. Instead, we have relied upon the statutory provisions of the ESA to complete the following analysis with respect to critical habitat.

Direct effects

This proposed project could conceivably affect critical habitat either by 1) causing disturbance or disrupting movements of polar bears, thereby potentially interfering with the conservation value of critical habitat units; or 2) by affecting the Primary Constituent Elements (PCEs) and associated features that make the habitat valuable to the polar bear.

Winter activities

Because winter activities only include sea ice travel, staging of equipment, and demobilization of equipment at the FUD site, no ground disturbance will occur during the winter. Additionally, alteration of sea ice from travel across it is extremely unlikely to occur. Therefore, the only likely affect to PCEs this time of year is human disturbance that prevents the use of barrier island and terrestrial denning critical habitat.

Barrier island critical habitat -- Sea ice travel will have minimal effects on barrier islands and the "no disturbance zone" because use of this habitat by bears occurs mostly in the fall and the proposed action is planned for late winter. Additionally, the proposed action includes several measures designed to avoid or minimize the potential for disturbance within polar bear critical habitat. Because the proposed action occurs outside of the peak use period of barrier islands and includes measures to minimize disturbance, the effects of disturbance from the proposed action

on barrier island critical habitat's capability to support polar bears is so minor it cannot be meaningfully evaluated.

Terrestrial denning critical habitat -- Denning female polar bears and post-emergent sows with cubs may be present in the action area, and the proposed route may potentially cross those used by bears moving between den sites and the coast. However, the number of dens expected annually for the Southern Beaufort Sea from just east of the Canada border to Point Barrow is about 100-150 (C. Perham, MMM, pers. comm.), and the action area is only a small portion of the area in this estimate. The FUD site contains potential polar bear denning habitat (Durner et al. 2006; Map 3); however, polar bear dens have not been documented near the FUD site from 1910-2010 (Durner et al. 2010; Map 3). Because the proposed action includes only one round trip per winter, few vehicles are present in the action area at same time, the density of denning bears is relatively low in the action area, and because the proposed project includes several measures designed to avoid or minimize the potential for disturbance of polar bears, effects of the disturbance from the proposed action on the capability of polar bears to use terrestrial denning critical habitat is so minor it cannot be meaningfully evaluated.

Summary -- The very low level of potential disturbance in barrier island and terrestrial denning polar bear critical habitat is so minor that it cannot be meaningfully evaluated. Therefore, disturbance-related project effects during winter will have at most an insignificant effect upon the critical habitat's conservation value to bears.

Summer activities

Summer activities may preclude the use of portions of critical habitat via disturbance and by alteration to terrestrial denning critical habitat. Therefore, summer activities may have an adverse effect on polar bear critical habitat.

Disturbance within barrier island critical habitat -- Although the proposed action avoids the period of peak use of barrier islands and terrestrial denning habitat, polar bears use the coast as a travel corridor during summer (C. Perham, MMM, pers. comm.). The FUD site and landing strip are within the "no disturbance zone;" therefore, the proposed action may preclude use of this area by polar bears during landfill remediation because bears may avoid the area or may be hazed for safety reasons to deter them from using the area. Polar bears may be precluded from using an area about **1.2 square miles for about two months**.

Alteration of terrestrial denning critical habitat -- The proposed project will modify terrestrial denning critical habitat via removing soil. Such activities may cause this portion critical habitat to be unavailable for several years because soil and vegetation that catch snow will be removed. These effects may last until the site revegetates. We estimate that by removing 60 tons of soil, 60 tons of debris, and smoothing the surrounding to bring it up to grade, **less than 0.5 square miles will be impacted**. However, remediation of this area will also remove contaminants from polar bear denning critical habitat, thus improving its future use.

Indirect effects

Indirect effects of the action are defined as "those effects that are caused by or will result from the proposed action and are later in time, but are still reasonably certain to occur" (50 CFR

§402.02). We evaluated the future effects of soil and contaminant removal above. Additionally, because we expect disturbance within polar bear critical habitat to occur only when field crews are present in polar bear habitat, we do not expect indirect effects to occur.

Interrelated and interdependent effects

Interdependent actions are defined as “actions having no independent utility apart for the proposed action,” while interrelated actions are defined as “actions that are part of a larger action and depend upon the larger action for their justification” (50 CFR §402.02). The Service can identify no effects from interdependent or interrelated actions resulting from this project.

CUMULATIVE EFFECTS

Under the Act, cumulative effects are the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the Action Area considered in this BO. Future federal actions that are unrelated to the proposed action are not considered because they require separate consultation under the Act.

Some private citizens may create a disturbance as they travel in the area while hunting, camping, etc., within polar bear critical habitat that temporarily precludes its use. Such activities may occur more frequently near Kaktovik, but the rest of the action area is remote. Because most of the action area is remote, the cumulative effects from these activities are likely very low.

Summary

Because of the potential of the project to cause disturbance in terrestrial denning critical habitat in winter and the “no disturbance zone” in summer to the extent that it is temporarily unavailable to polar bears, and because the proposed project will physically alter a portion of terrestrial denning critical habitat, the proposed project is likely to adversely affect polar bear critical habitat.

CONCLUSION

After reviewing the current status of polar bear critical habitat, the environmental baseline for the action area, the effects of the proposed action, and cumulative effects, it is the Service’s biological opinion that remediating this FUD site, as proposed, is *not likely to adversely modify polar bear critical habitat*. The following information led us to this conclusion:

1. Disturbance in the three critical habitat units that precludes their use will only occur for a short time, in a small area, and will not significantly alter the critical habitat’s intended conservation role for polar bears.
2. The area of ground alteration of terrestrial denning critical habitat is small and will not preclude future use of the habitat by denning bears.

INCIDENTAL TAKE OF POLAR BEARS

Consistent with the ESA and regulations at 50 CFR 402.14(i), incidental take statements for marine mammals are not included in formal consultations until regulations, authorizations, or

permits under the MMPA 101(a)(5) are in effect. The Service is not including an incidental take statement for polar bears at this time because the incidental take of marine mammals has not been authorized under the above statute. Following issuance of such regulations or authorizations, the Service may amend this biological opinion to include an incidental take statement for polar bears, as appropriate.

REPORTING REQUIREMENTS FOR POLAR BEARS

For management purposes the FWS tracks polar bear observations and disturbance events throughout its range in Alaska, and the applicant's encounters with polar bears will help with the management of this species. Therefore, the FFWFO requests a report containing the following, no more than 60 days after completion of field work:

1. Report how and where field crews FLIRed (e.g., with a map) and results of the survey.
2. Number of polar bears seen with the best estimate of age (e.g., cub of the year, adult, juvenile, etc.).
3. Description of behavior of polar bears when seen, how they reacted to field crews, and what field crew did to avoid disturbing polar bears.
4. Any actions taken to haze or harass polar bears for safety reasons.

Reinitiation Notice

This concludes formal consultation on the actions outlined in this permit. As provided in 50 CFR 402.16, initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) if: 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the action agency that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; 3) the action is subsequently modified in a manner that causes an effect to listed species or critical habitat not considered in this opinion; or 4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending re-initiation of consultation. The Refuge/USACE should also re-initiate consultation if it becomes evident that any additional activity not described in their permit may take place without separate consultation on that action.

Sincerely,



Ted Swem
Branch Chief

Cc: Richard Voss, Manager, Arctic National Wildlife Refuge
Bryan D. Lund, Marsh Creek, LLC

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SITE MAP

SCALE AS NOTED THEY ARE NOT TO SCALE PROJECT NO. UA-053-1102	SAWN	MSF	 M&H CONSULTING, INC.	M&H Creek, LLC 2000 East 86th Avenue Anchorage, Alaska 99507 (907) 356-0020 www.mhconsulting.com	Site Map USACE Kogotpak Landfill Nemah, Alaska, ALASKA	DATE	3
	INCLUDES	MSF				DATE	3/03
	CLEAR	JED				DATE	01-2011

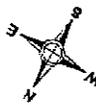
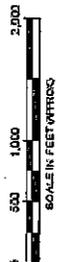
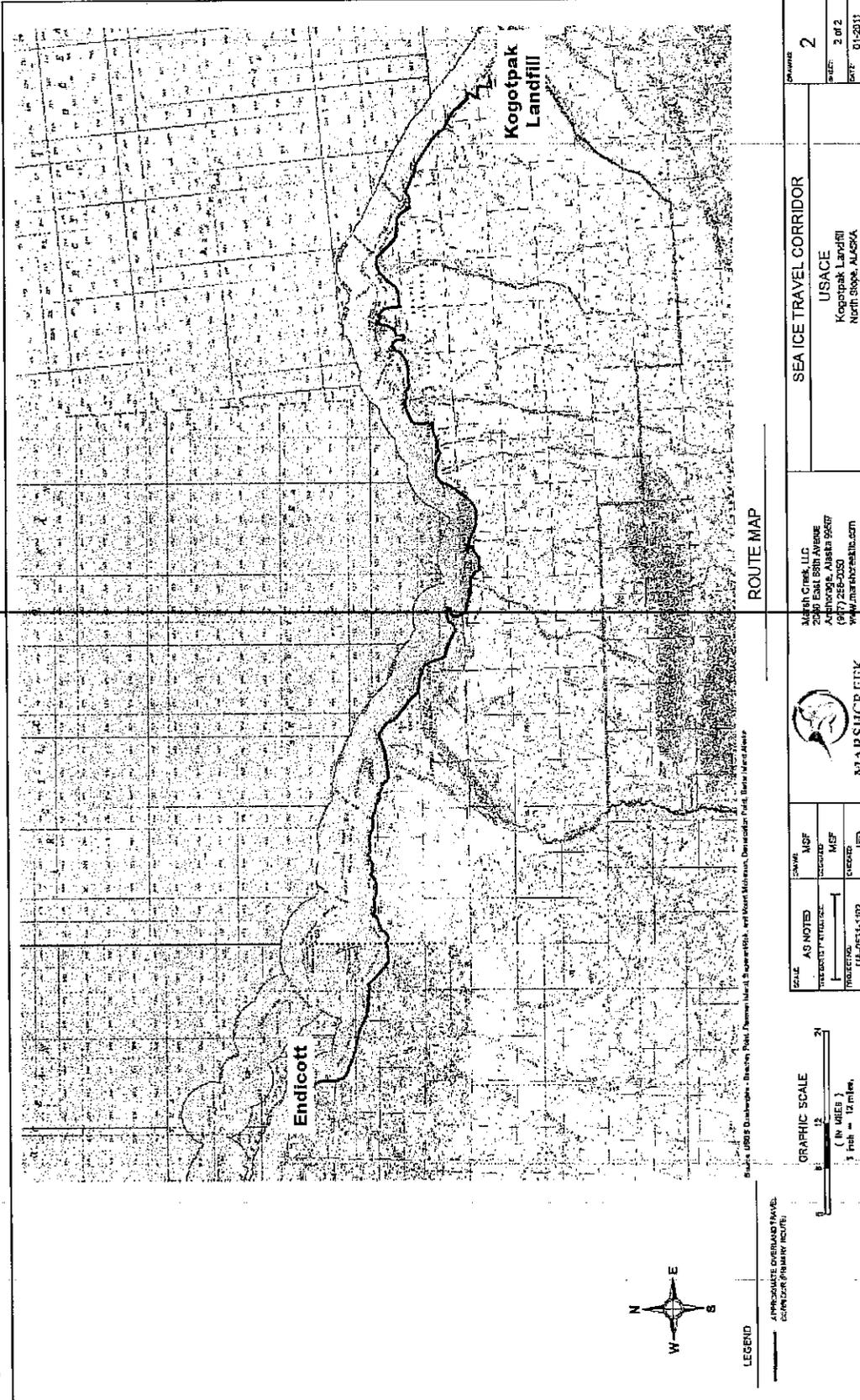
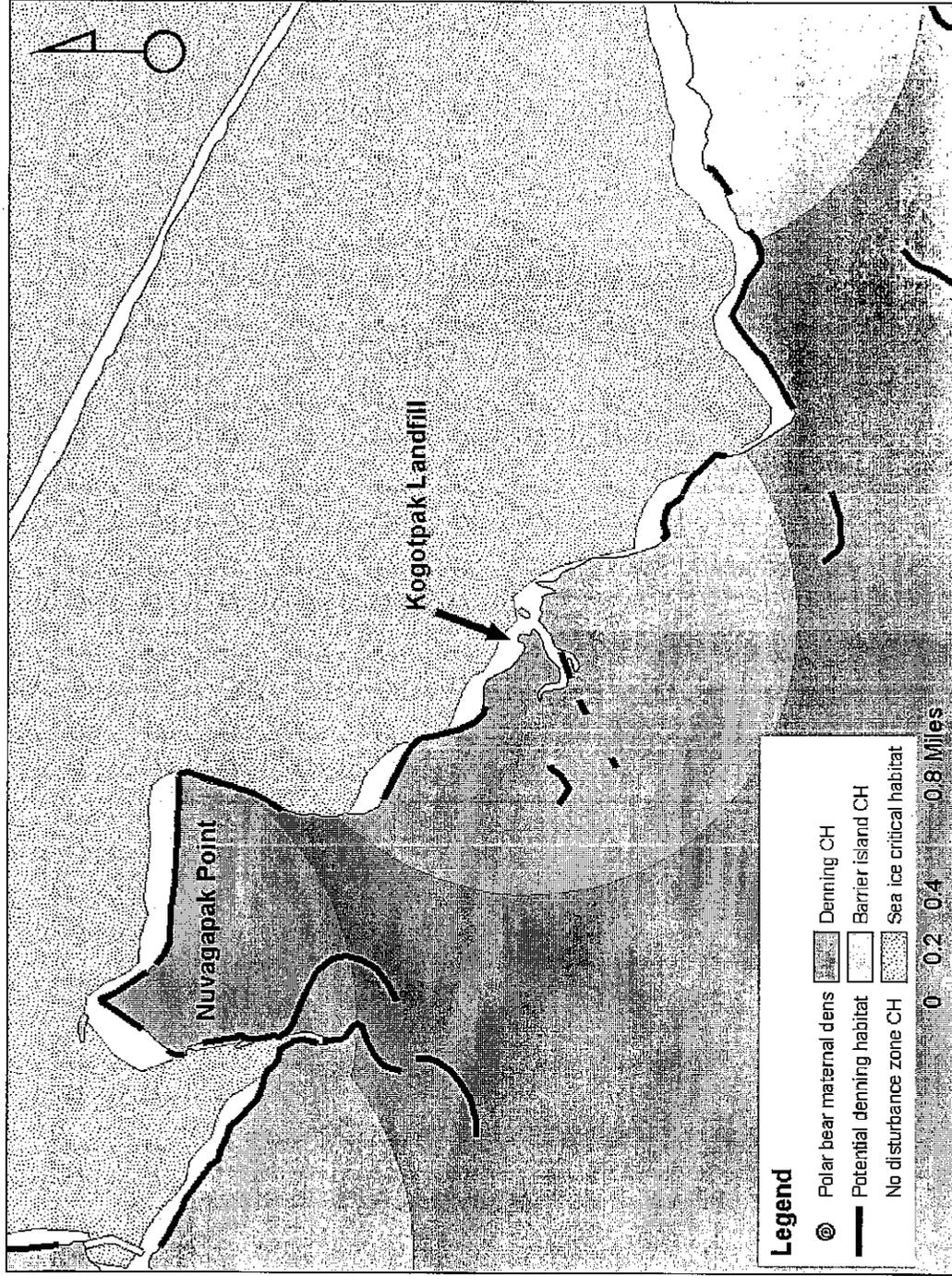


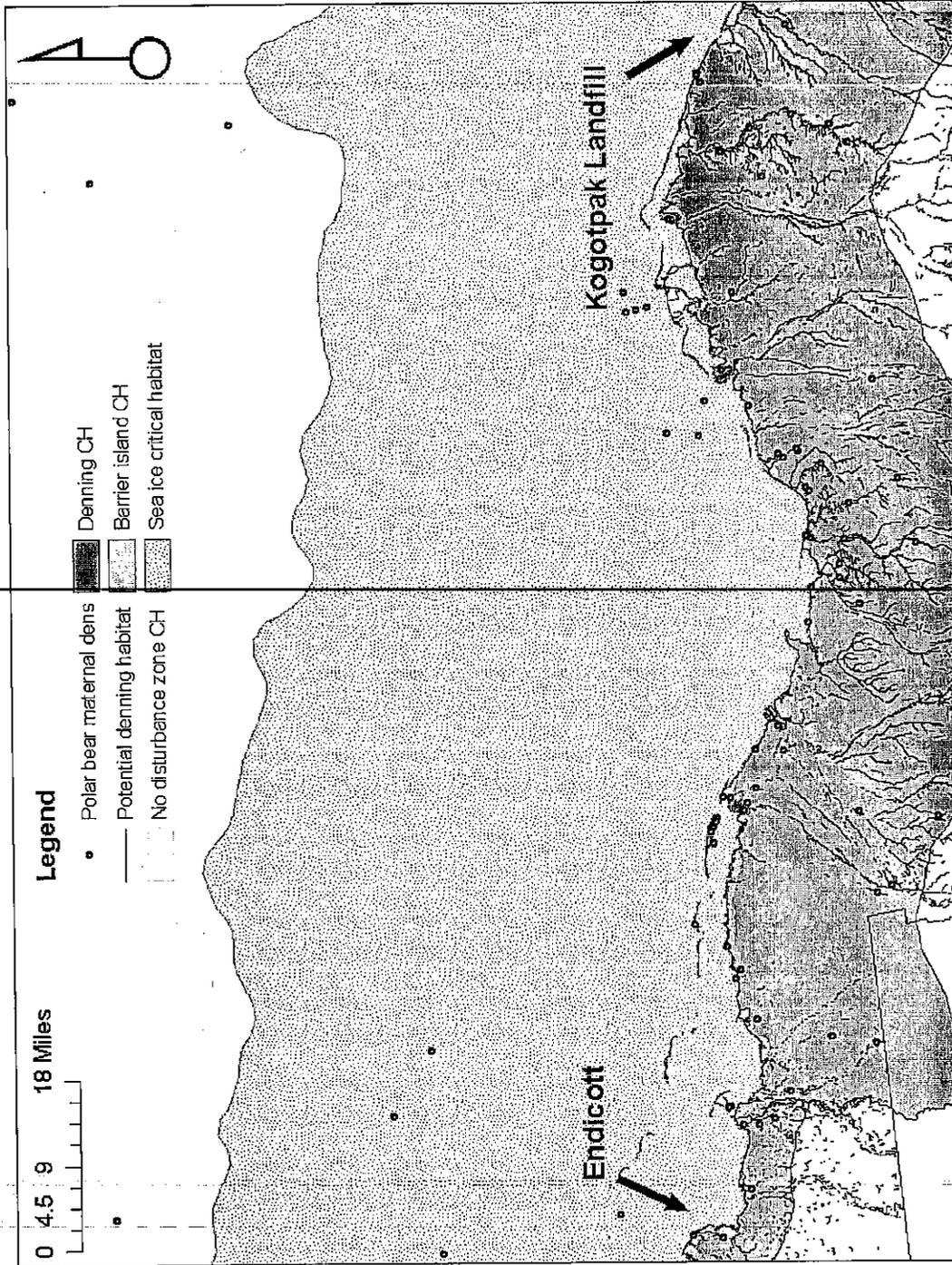
Figure 2. Aerial view of the FUD site (Kogotpak Landfill) and Nuvagaapak Point, the location of the proposed camp.



Map 1. Winter ice route of the proposed action.



Map 2. Polar bear past maternal dens (from 1910-2010; Durner et al. 2010), potential denning habitat (Durner et al. 2006), and critical habitat (CH) around Brownlow Point.



Map 3. Polar bear past maternal dens (from 1910-2010; Durner et al. 2010), potential denning habitat (Durner et al. 2006), and critical habitat (CH) in the action area.

