



# United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE  
Fairbanks Fish and Wildlife Field Office  
101 12<sup>th</sup> Avenue, Room 110  
Fairbanks, Alaska 99701

March 4, 2011



## MEMORANDUM

**To:** Richard Voss, Arctic National Wildlife Refuge Manager

**From:** Ted Swem, Fairbanks Endangered Species Branch Chief *Ted Swem*

**Subject:** Re-initiation of consultation for Brownlow Point FUDS cleanup by the USACE

**Cc:** Craig Perham, Marine Mammals Management  
Christopher Floyd, U.S. Army Corps of Engineers  
Bryan D. Lund, Marsh Creek, LLC

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion (BO) on our review of the proposed action located on the North Slope of Alaska in accordance with section 7 of the Endangered Species Act (Act), as amended (16 U.S.C. 1531 et seq.). A request for formal consultation was received from the Arctic NWR and Marsh Creek LLC (Marsh Creek) on January 21, 2011.

This BO is based on information provided by Marsh Creek on January 21, 2011, emails from this date to February 11, 2011, a meeting with Marsh Creek on February 9, 2011, peer-reviewed literature, and reports regarding the species and their habitat 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 the Arctic National Wildlife Refuge (Refuge) is amending the permit issued to the U.S. Army Corps of Engineers (Corps) to remediate a Formerly Used Defense Site (FUD) at Brownlow Point (70° 9' 50" N latitude, 145° 51' 11" W longitude) which is within the Refuge (Map 1). Some cleanup activities have already taken place under the existing permit. In August 2010, 62 abandoned drums were removed via helicopter to Kaktovik, barged to Deadhorse, and trucked to a recycling facility. Seventy-nine drums consolidated during the summer activities were not removed due to weather constraints and remain onsite. Additionally, approximately 10-20 drums were observed in a shallow shoreline lagoon area that could not be reached during summer activities. Marsh Creek, LCC, (Marsh Creek) plans to finish remediation of the site during winter and spring of 2011. Mobilization to the project site will be by cat-train across coastal shorefast ice and frozen lagoons between Endicott and Brownlow Point. Ice travel will be limited to a single roundtrip. Solid waste and graywater will be backhauled to Deadhorse for disposal at permitted facilities.

The cat-train will include the following equipment:

- 1 case Steiger tractor, rubber tracked
- 1 case 977 loader, steel tracked
- 1 cat D-7 dozer, steel tracked
- 1 Tucker or Mattrack-equipped Pickup
- 1 fuel sleigh (3,500 gallons)
- 8-person ski camp
- 2 Attaco freight sleds
- 2 side-dump trailers, rubber tracked

Winter project activities will include:

- Excavation of approximately 25 cubic yards of contaminated soil. The contaminated area is limited to surface and shallow subsurface soil (less than 2 feet below ground surface). Soil will be excavated using a 200 series excavator to allow removal during frozen conditions. Soil will be placed in lined Supersacks™. Bags will be transported on rubber-tracked trailers or in a rubber-tracked side dump trailer to Deadhorse for further trucking to a final approved disposal facility.
- Crushing and containerization of 79 abandoned drums. After crushing, drums will be placed in a 20-foot long metal scrap bin for transport to Deadhorse on rubber-tracked trailers for further trucking to a recycling facility.
- Conducting a gridline scan with metal detectors of the shoreline lagoon area identified during the summer 2010 activities to locate and remove approximately 10-20 drums. A 3-acre area will be investigated during site remediation.
- The excavated area will be smoothed to gently contour to the surrounding ground surface and will be allowed to naturally revegetate. Marsh Creek may place up to 25 cubic yards of mineral soil imported from an established borrow source in the Prudhoe Bay area (likely PUT23).

### **Schedule**

The winter/spring 2011 work is scheduled to take place in late March or early April after development of shorefast lagoon ice. A preliminary schedule is presented below (minor changes to the schedule may occur due to weather or ice conditions). Permit closeout letters and a corrective action report will be prepared summer/fall 2011.

- April 5 – 7 – Mobilize from Deadhorse to project site.
- April 8 – 13 – Onsite activities.
- April 14 – 16 – Demobilize from project site and head east to stage equipment at another FUD site at Nuvagapak Point, the Kogotpak Landfill (effects evaluated in a separate BO).

Marsh Creek will use hand-held Forward-looking Infrared Radar (FLIR) to look for maternal polar bear dens on Tigwarak Island and the west side of Brownlow Point prior to approaching the area. If a den is found, they will follow protocols (see numbered list below) to avoid impacting the den until the female and her cubs emerge naturally.

The Service's Marine Mammals Management office (MMM) in Anchorage, Alaska will issue Marsh Creek a 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). Use of these techniques should not cause the death or serious injury to polar bears.

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 as agreed to adhere to the minimization measures below. Marsh Creek will also follow the wildlife interaction plan developed by the Refuge.

1. The permittee and its contractor 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. The permittee and its 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 will be provided by the Refuge when the permit is issued).
4. All activities are prohibited within one 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.
5. All observed polar bear dens must be reported to the Fairbanks Fish and Wildlife Field Office (FFWFO) at 907-455-1871 or shannon\_torrence@fws.gov as soon as possible.
6. Should occupied dens be identified within one mile of activities, work in the immediate area will cease and the FFWFO 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.
7. The permittee or its contractor must designate a MMM-trained 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 shall also be reported.
8. Every polar bear observed shall be recorded on a polar bear observation form. The permittee and its contractor shall obtain this form from the Service.
9. The permittee or its contractor shall submit a polar bear observation report to the Refuge and the FFWFO within 60 days of completion of field operations. This report shall contain information on all evidence of polar bears observed during the project, including active den locations, and actions taken by the permittee to adhere to these stipulations.
10. 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 MMM Office allows for mitigation of this stipulation through a process similar to those used for obtaining an LOA under the Beaufort Sea ITRs.

#### 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 Brownlow Point.

## EFFECTS OF THE ACTION ON LISTED 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 Alaska-breeding population of 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. Because project effects are in winter when most eiders are not present, direct effects to eiders are not likely to occur and are discountable. Some minor impacts to vegetation and soil and thus nesting habitat to both species will occur from excavation at the contaminated site and may occur from winter trail use. Excavation activities will be confined to a small volume (25 cubic yards) and area required to smooth and contour around the excavation area. Additionally, Marsh Creek may use up to 25 cubic yards of mineral soil to aid in soil recovery. Most travel will occur on ice, which will limit possible effects of trailing on vegetation. Because impacts to eider nesting habitat will be very limited in extent and severity, project effects on listed eiders cannot be meaningfully measured and are therefore insignificant. Additionally, remediation of this site will reduce the risk of environmental impacts from contaminants. Therefore, project effects will 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.

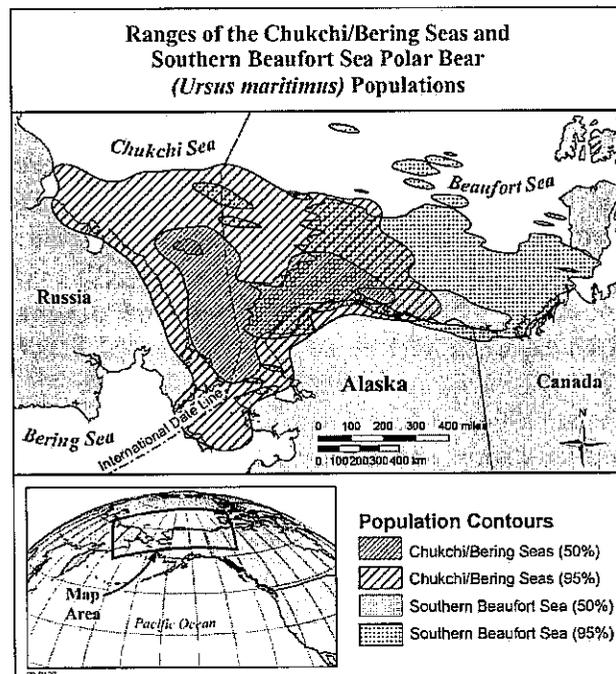


Figure 1. Ranges of Alaska polar bear populations (USFWS 2009)

### 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.

Because there are no nearby villages, the likelihood of polar bear harvest in the action area is low.

#### *Denning in the project area*

Given the timing of this project, denning polar bears may be present in the action area and may emerge from their dens and vacate the denning area as they travel to the coast to hunt during the proposed action. They occur at relatively low densities in most of the action area. However, the project site at Brownlow Point and nearby Flaxman Island provides polar bear denning habitat, and polar bears have denned in the area as recently as spring of 2010 (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 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 likely supports denning bears, and Brownlow Point and Flaxman Island could contain occupied dens. Additionally, sows with yearling or older cubs and transient bears may also be present in the action area. 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 and 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**

#### *Transient polar bears*

Noise from or visual stimuli of a tracked vehicles travelling across the ice could alter the behaviors of transient bears. Family groups may be more susceptible to disturbance than other demographic groups (Andersen and Aars 2008) and may be more likely to change their behavior in response to disturbance. Vehicular travel will be limited to a single roundtrip between the Endicott and the FUD site, which will limit disturbance during travel. If disturbances occur, they would likely result in short-term behavioral changes because cat-train vehicles will not pursue bears, even if bears retreat along the same directional heading as vehicles. The presence of humans and noise at the FUD site and camps may also temporarily change the travel routes of transient bears. If transient bears are encountered, they will most likely just move away from the disturbance, with minimal impacts to the affected individuals. We anticipate no more than five transient polar bears or sows with yearling or older cubs will be disturbed during the proposed action.

#### *Polar bears in or recently emerged from maternal dens*

The proposed action will occur towards the end of the maternal denning period (mid November to early April) for southern Beaufort Sea polar bears. The probability of encountering an active maternal den on the ice where most travel will occur is low (Map 3). If field crews knowingly discover a den, they will minimize impacts by retreating one mile away. While in transit, field crews may encounter post-emergent sows with cubs near the opening of dens or travelling to hunting grounds. These family groups may leave their dens or change their direction of travel and may experience stress as they move/run away. Because field crews will retreat from and will not pursue any observed polar bears during their round trip, disturbance while in transit will be temporary. We anticipate that no more than one sow with cubs of the year (coy) will be disturbed during the proposed action.

The probability of encountering a maternal den or newly-emerged family group is higher near Brownlow Point and Flaxman Island than other parts of the action area because crews will spend more time there, and the area contains suitable denning habitat and records of historical use (Durner et al. 2006; Map 2), and polar bears have denned in this area as recently as last spring (Durner et al. 2010; Map 2). Additionally, newly-emerged family group travelling from a den further inland may also experience disturbance if they encounter field crews. Post-emergent females with cubs are not as curious as other polar bear demographic groups; therefore, most females will avoid sites with humans as a protective measure. Because the proposed activity will occur towards the end of the emergence period, the likelihood that females will abandon their cubs if disturbance causes early emergence is lower than other times during the maternal denning period. As previously mentioned, the proposed action includes measures to minimize disturbance of all polar bear demographic groups. We anticipate that no more than two bear dens with one sow and two coys will be disturbed during the proposed action.

#### *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 if it can be avoided. 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 physical injury to polar bears. We anticipate that no more than three bears will be disturbed by hazing during the proposed action.

#### **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 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**

The proposed action may affect up to five transient polar bears and sows with yearling or older cubs by disturbance, but we expect these disturbances to result in minor behavioral changes. We also anticipate that the proposed action may adversely affect up to three (one sow and two coys) post-emergent and six denning (two dens with one sow and two cubs in each) bears near Brownlow Point. Field crews may also need to haze up to three polar bears away from work sites and camps for their own safety.

### 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 disturbance of polar bears may occur from residents on the North Slope incidental to activities such as hunting and travel within polar bear habitat. This amount, however, is difficult to estimate due to lack of information. However, because of the remoteness of the action area and its distance from villages, the effects from these activities are likely very low.

## 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 the number of polar bears disturbed. These measures will also reduce the severity of disturbance to the point where the impacts of disturbance is unlikely to affect their survival and reproduction.
2. Because very few bears are likely to be disturbed, and the disturbance will be minimized so that it is unlikely to affect polar bear survival and reproduction, we do not expect that the proposed action is likely to effect the polar bear population at the species level.

## 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, possibly exacerbated 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

#### **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.

Because the terrestrial denning and barrier island critical habitat units include lack of human disturbance within the PCE, the Service must separately analyze effects of disturbance on polar bears from its effects on critical habitat. The section *Effects of the Action on Polar Bears* included an analysis of possible effects of disturbance on polar bears and whether it rises to the level of take. In contrast, this section contains an analysis of disturbance effects on the ability of critical habitat to hold the value (e.g., lack of disturbance from humans) for which it was designated. Therefore, this section may reference disturbance of polar bears if it is meaningful to the discussion of the capability of critical habitat to support polar bears, but it is not a re-analysis of effects on polar bears and possible *take of polar bears* that may result from disturbance.

The proposed action may temporarily cause the loss of use of terrestrial denning habitat via disturbance at the FUD site and thus cause an adverse affect. The potentially affected area, Brownlow Point plus a small buffer around it, is estimated to be a **3 x 3 mile area surrounding the FUD site at Brownlow Point**. However, the proposed action includes several measures designed to avoid or minimize the potential for disturbance within denning habitat. These include, to the extent possible, avoiding areas and topographic features most likely to support denning bears such as coastal and inland lake/river bluffs; in situations where this is not possible, using FLIR or other methods to search for dens prior to accessing these areas; field crews will stay at least one mile from occupied den sites, including those serendipitously encountered in the field. These measures will significantly reduce the likelihood of disturbing denning bears or bears resting on or using barrier islands as a corridor. Although the proposed route will potentially cross routes used by bears moving between den sites and the coast or engaged in other movements, the infrequent use of the route from Endicott to Brownlow Point by vehicles and the relatively low density of bears in the region combine to make the likelihood of an encounter between vehicles and bears low. Compliance with the wildlife interaction plan will further reduce the likelihood of encounters, and reduce the potential for negative impacts to bears in the unlikely event that one or more encounters do occur.

Impacts to the physical PCEs from this proposed project will be limited in magnitude and extent. Surface disturbance associated with remediation of this site is limited to **25-30 cubic yards of soil** and the area immediately adjacent to the excavation site required to re-slope the site, **roughly 30 x 30 square feet**. Removal of contaminants further reduces the risk of environmental impacts from toxins, which will positively affect habitat quality.

#### **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 within polar bear critical habitat to occur only when field crews are present, 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. Because of the remoteness of the action area and its distance from villages, the cumulative effects from these activities are expected to be very low.

### **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 the 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

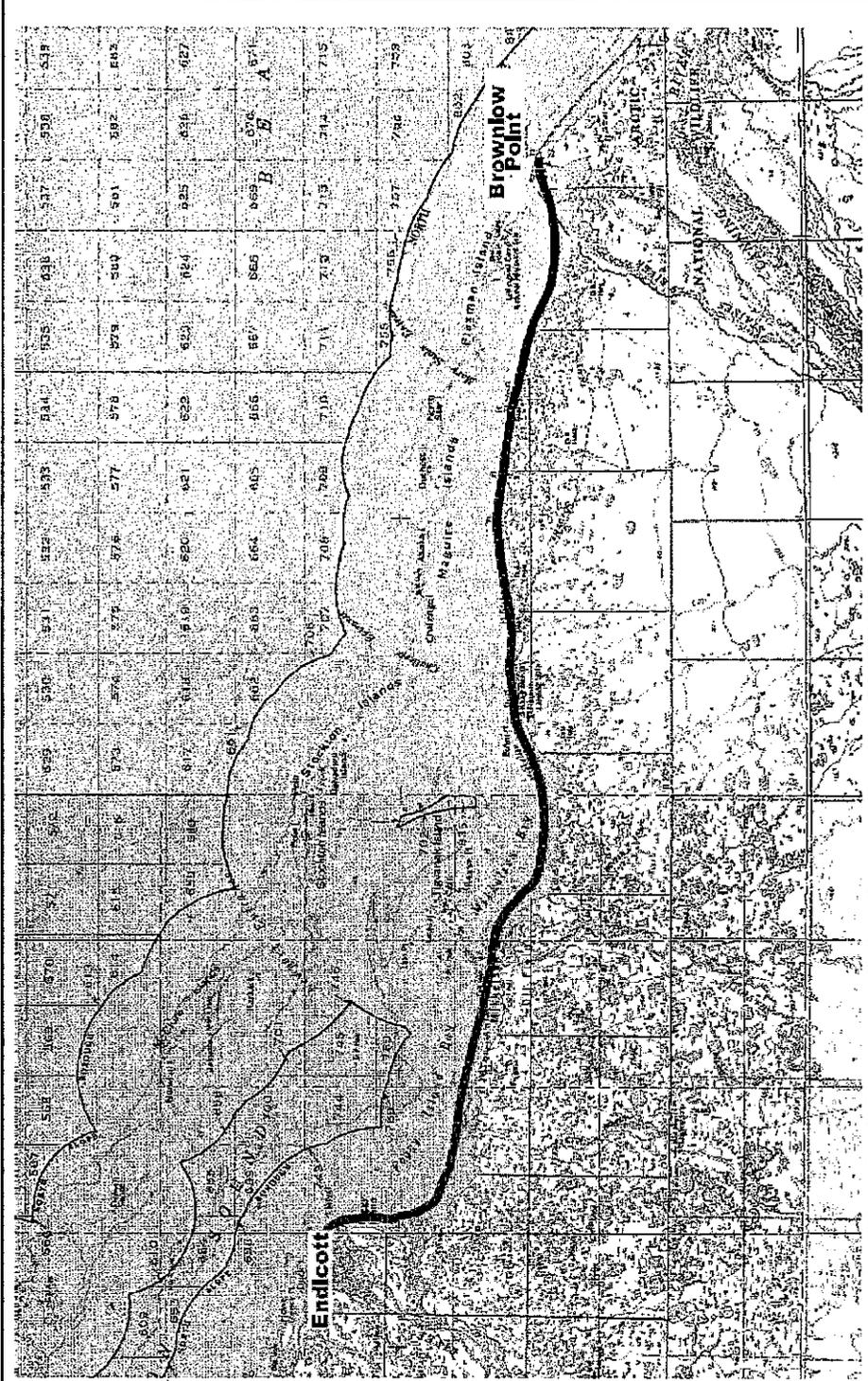
This concludes formal consultation on the actions outlined in this permit. As provided in 50 CFR 402.16, initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) if: 1) new information reveals effects of the action agency that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; 2) the action agency is subsequently modified in a manner that causes an effect to listed species or critical habitat not considered in this opinion; or 3) 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/Corps 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.

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ROUTE MAP

Source: USGS Quadrangle - Seward (1:250,000), Seward (1:250,000), and Seward (1:250,000), Alaska

**LEGEND**

APPROXIMATE OVERLAND TRAVEL CORRIDOR (PRIMARY ROUTE)

0 6 12  
SCALE IN MILES (APPROX.)

SCALE	AS NOTED	PIVOTAL	NSF
THIS SCALE IS FOR REFERENCE ONLY		BERNARD	NSF
PROJECT: 102	UA-DCS11-1002	CHUCK	JED

**MARSH CREEK**

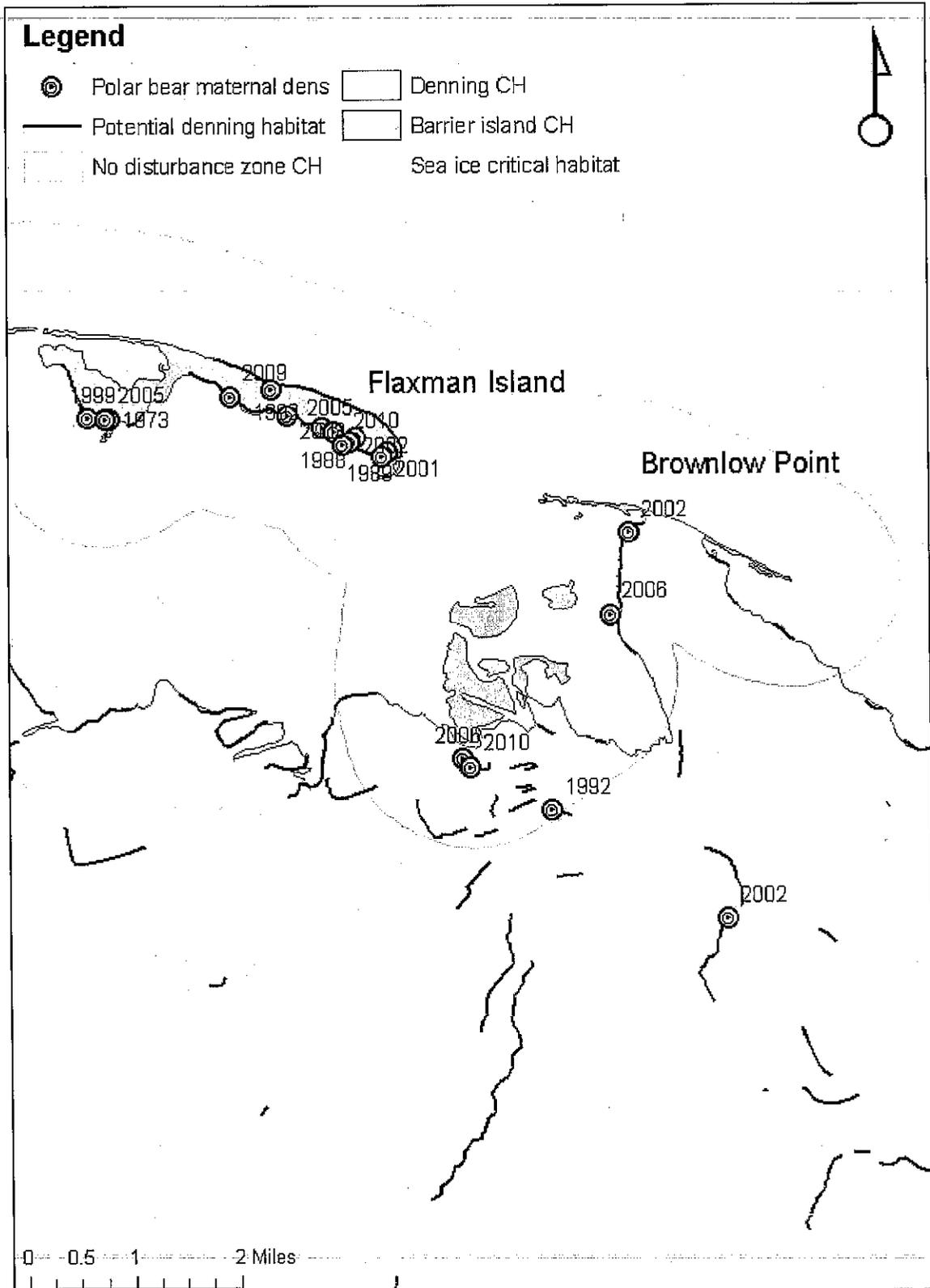
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**SEA ICE TRAVEL CORRIDOR**

USACE  
Brownlow Point  
North Slope, ALASKA

PAGE: 3  
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DATE: 12-2010

Map 1. Travel route and location of Brownlow Point FUD cleanup site within the Arctic NWR.



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.

