Federal Register

Tuesday,
December 7, 2010

# Part II

# Department of the Interior

## Fish and Wildlife Service

## 50 CFR Part 17

## Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Polar Bear (Ursus maritimus) in the United States; Final Rule

**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

**50 CFR Part 17**

**[Docket No. FWS–R7–ES–2009–0042; 92210–1117–0000–FY09–B4]**

**RIN 1018–AW56**

# Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Polar Bear (Ursus maritimus) in the United States

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), designate critical habitat for polar bear (*Ursus maritimus*) populations in the United States under the Endangered Species Act of 1973, as amended (Act). In total, approximately 484,734 square kilometers (km$^2$) (187,157 square miles (mi$^2$)) fall within the boundaries of the critical habitat designation. The critical habitat is located in Alaska and adjacent territorial and U.S. waters.

**DATES:** This rule becomes effective on January 6, 2011.

**ADDRESSES:** The final rule and final economic analysis are available for viewing at *http://www.regulations.gov.* You can view detailed, colored maps of critical habitat areas in this final rule at *http://alaska.fws.gov/fisheries/mmm/polarbear/criticalhabitat.htm.* Supporting documentation used in preparing this final rule is available for public inspection, by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Marine Mammals Management Office, 1011 East Tudor Road, Anchorage, AK 99503; telephone 907/786–3800; facsimile 907/78–3816.

**FOR FURTHER INFORMATION CONTACT:** Thomas J. Evans, Marine Mammals Management Office, U.S. Fish and Wildlife Service, 1011 East Tudor Road, Anchorage, AK 99503; telephone 907–786–3800. If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800–877–8339.

**SUPPLEMENTARY INFORMATION:**

## Background

It is our intent to discuss only those topics directly relevant to the designation of the critical habitat for the polar bear in the United States in this final rule. For more information on the polar bear, refer to the final listing rule published in the **Federal Register** on May 15, 2008 (73 FR 28212), the proposed rule to designate critical habitat published in the **Federal Register** on October 29, 2009 (74 FR 56058), and the document published on May 5, 2010 (75 FR 24545), that made available the draft economic analysis (DEA). Detailed information on polar bear biology and ecology relevant to designation of critical habitat is discussed under the Primary Constituent Elements section below.

### General Overview

Polar bears are distributed throughout the ice-covered waters of the circumpolar Arctic (Stirling 1988, p. 61). However, in accordance with the regulations at 50 CFR 424.12(h), we do not designate critical habitat within foreign countries or in other areas outside of U.S. jurisdiction. In the United States, polar bears occur in Alaska and adjacent State, Territorial, and U.S. waters. Therefore, these are the only areas we include in this critical habitat designation.

Delineation of critical habitat requires, within the geographical area occupied by the polar bear, identification of the physical and biological features essential to the conservation of the species that may require special management or protection. In general terms, physical and biological features essential to the conservation of the polar bear include: (1) Annual and perennial sea-ice habitats that serve as a platform for hunting, feeding, traveling, resting, and (to a limited extent) denning; and (2) terrestrial habitats used by polar bears for denning and reproduction, as well as for seasonal use in traveling or resting. The most important polar bear life functions that occur in these habitats are feeding and reproduction. Adult female polar bears are the most important reproductive cohort in the population.

Polar bears live in an extremely dynamic sea-ice environment. Much of polar bear range in the United States includes two major categories of sea ice: Land-fast ice and pack ice. When we refer to sea-ice habitat in this final rule, we are referring to both of these types of ice. Land-fast ice is either frozen to land or to the benthos (bottom of the sea) and is relatively immobile throughout the winter. Shore-fast ice, a type of land-fast ice also known as "fast ice," is defined by the *Arctic Climate Impact Assessment* (2005, p. 190) as ice that grows seaward from a coast and remains stationary throughout the winter and that is typically stabilized by grounded pressure ridges at its outer edge. Pack ice consists of annual and heavier multi-year ice that is in constant motion due to winds and currents. It is located in pelagic (open ocean) areas and, unlike land-fast ice, can be highly dynamic. The actions of winds, currents, and temperature result in the formation of leads (linear openings or cracks in the sea ice), pressure ridges, and ice floes of various sizes. While the composition of land-fast ice is uniform, regions of pack ice can consist of various ages and thicknesses, from new ice only days old that may be several centimeters (inches) thick, to multiyear ice that has survived several years and may be more than 2 meters (6.56 feet (ft)) thick. Polar bear use of these habitats may be influenced by several factors and the interaction among these factors, including: (1) Water depth; (2) atmospheric and oceanic currents or events; (3) climate phenomena such as temperature, winds, precipitation, and snowfall; (4) proximity to the continental shelf; (5) topographic relief (which influences accumulation of snow for denning); (6) presence of undisturbed habitats; (7) secure resting areas that provide refuge from extreme weather, other bears, or humans; and (8) prey availability.

Unlike some other marine mammal species, polar bears generally do not occur at high densities in specific areas such as rookeries and haulout sites. However, some denning areas, referred to as core denning areas, have a history of higher use by polar bears. In addition, terrestrial coastal areas are experiencing increasing use by polar bears for longer durations during the fall open-water period (the season when there is a minimum amount of ice present, which occurs during the period from when the sea ice melts and retreats during the summer, to the beginning of freeze-up during the fall) (Schliebe *et al.* 2008, p. 2).

As polar bears evolved from brown bears (*Ursus arctos*), they became increasingly specialized for hunting seals from the surface of the sea ice (Stirling 1974, p. 1,193; Smith 1980, p. 2,206; Stirling and Øritsland 1995, p. 2,595). Currently, little is known about the dynamics of ice seal populations (seals that rely on sea ice for their life-history functions) in the Arctic or threats to these populations. However, the status of the populations of the primary species of ice seals in the Arctic is currently being investigated by the National Oceanic and Atmospheric Administration, National Marine Fisheries Service. We do know, however, that polar bears require sea ice as a platform from which to search for and hunt these seals. Polar bear movements are influenced by the accessibility of seals, their primary prey. The formation and movement patterns

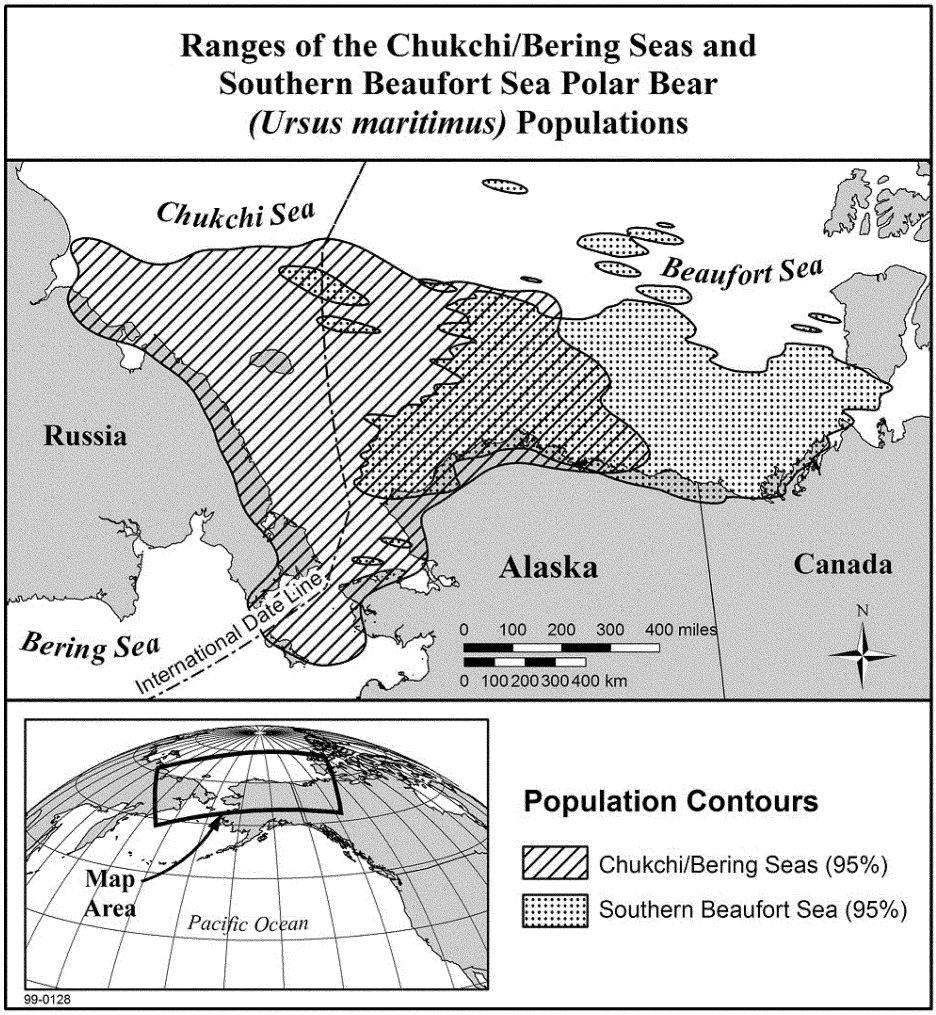
of sea ice strongly influence the distribution and accessibility of ringed seals (*Pusa hispida*), the main prey for polar bears, and bearded seals (*Erignathus barbatus*), a less-used prey species. When the annual sea ice begins to form in the shallower water over the continental shelf, polar bears that had retreated north of the continental shelf during the summer return to the shallower shelf waters where seal densities are higher (Durner *et al.* 2009a, p. 55). During the winter period, when energetic demands are the greatest, nearshore lead systems and ephemeral (may close during the winter) or recurrent (open throughout the winter) polynyas (areas of open sea surrounded by sea ice) are important for seals, and are thus important foraging habitat for polar bears. During the spring period, nearshore lead systems continue to be important hunting and foraging habitat for polar bears. The shore-fast ice zone, where ringed seals construct subnivean (in or under the snow) birth lairs for pupping, is also an important foraging habitat during the spring (Stirling *et al.* 1993, p. 20). Polar bears in the southern Beaufort Sea reach their peak weights during the fall and early winter period (Durner and Amstrup 1996, p. 483). Thus, availability and accessibility of prey during this time may be critical for survival through the winter.

In northern Alaska, denning habitat is more diffuse than in other areas where high-density denning by polar bears has been identified (Amstrup 2003, p. 595). Areas, such as barrier islands (linear features of low-elevation land adjacent to the main coastline that are separated from the mainland by bodies of water), river bank drainages, much of the North Slope coastal plain, and coastal bluffs that occur at the interface of mainland and marine habitat, receive proportionally greater use for denning than other areas (Durner *et al.* 2003, entire; Durner *et al.* 2006a, entire). Snow cover, both on land and on sea ice, is an important component of polar bear habitat in that it provides insulation and cover for polar bear dens (Durner *et al.* 2003, p. 60). Geographic areas containing physical features suitable for snow accumulation and denning by polar bears have been delineated on the North Slope for an area from the Colville River Delta at Prudhoe Bay, Alaska, to the Canadian border (Durner *et al.* 2001, p. 119; Durner *et al.* 2003, p. 60).

**Description and Taxonomy**

Polar bears are the largest of the living bear species (Demaster and Stirling 1981, p. 1; Stirling and Derocher 1990, p. 190) and are the only bear species that is evolutionarily adapted to the arctic sea-ice and marine habitat. Using movement patterns, tag returns from harvested animals, and, to a lesser degree, genetic analysis, Aars *et al.* (2006, pp. 33–47) determined that polar bears occur in 19 relatively discrete populations. Genetic analyses have reinforced the observed boundaries between some designated populations (Paetkau *et al.* 1999, p. 1,571; Amstrup 2003, p. 590), while confirming overlap among others (Paetkau et al. 1999, p. 1,571; Amstrup *et al.* 2004a, p. 676; Amstrup *et al.* 2005, p. 252; Cronin *et al.* 2006, p. 656). Currently, there are two polar bear populations in the United States: the southern Beaufort Sea population, which extends into Canada; and the Chukchi-Bering Seas population, which extends into the Russian Federation (Russia) (Figure 1) (Amstrup *et al.* 2004a, p. 670). Although the two U.S. populations are not distinguishable genetically (Paetkau *et al.* 1999, p. 1576; Cronin *et al.* 2006, p. 658), the population boundaries are thought to be ecologically meaningful and distinct enough to be used for management (Amstrup *et al.* 2004a, p. 670). The Service listed the polar bear as a threatened species throughout its range under the Act on May 15, 2008 (73 FR 28212; final rule available at *http://alaska.fws.gov/fisheries/mmm/polarbear/issues.htm*).

Figure 1. Approximate bounds (95 percent contour) for the southern Beaufort Sea and the Chukchi-Bering Seas polar bear populations based on satellite radio-telemetry locations from 1985 – 2003.




Polar bears are characterized by large body size, a stocky form, and fur color that varies from white to yellow. They are sexually dimorphic; females weigh 181 to 317 kilograms (kg) (400 to 700 pounds (lbs)), and males weigh up to 654 kg (1,440 lbs). Polar bears have a longer neck and a proportionally smaller head than other members of the bear family (Ursidae), and are missing the distinct shoulder hump common to brown bears. The nose, lips, and skin of polar bears are black (Demaster and Stirling 1981, p. 1; Amstrup 2003, p. 588).

Polar bears evolved in sea-ice habitats for over 200,000 years and as a result are evolutionarily adapted to this environment (Talbot and Shields 1996, p. 490). Adaptations unique to polar bears include: (1) White pelage with water-repellent guard hairs and dense under-fur; (2) a short, furred snout; (3) small ears with reduced surface area; (4) teeth specialized for a carnivorous rather than an omnivorous diet; and (5) feet with tiny papillae on the underside, which increase traction on ice (Stirling 1988, p. 24). Additional adaptations include large, paddle-like feet (Stirling 1988, p. 24), and claws that are shorter and more strongly curved than those of brown bears and that are larger and heavier than those of black bears (*Ursus americanus*) (Amstrup 2003, p. 589).

**Distribution and Habitat**

Polar bears are distributed throughout the ice-covered waters of the circumpolar Arctic (Stirling 1988, p. 61), and rely on sea ice as their primary habitat (Lentfer 1972, p. 169; Stirling and Lunn 1997, pp. 169–170; Amstrup 2003, p. 587). The distribution and movements of polar bears in the United States are closely tied to the seasonal dynamics of sea-ice extent as it retreats northward during summer melt and advances southward during autumn freeze. The southern Beaufort Sea population occurs south of Banks Island and east of the Baille Islands, Canada; ranges west to Point Hope, Alaska; and includes the coastline of Northern Alaska and Canada up to approximately 40 km (25 mi) inland (Figure 1). The Chukchi-Bering Seas population is widely distributed on the sea ice in the Chukchi Sea and northern Bering Sea and adjacent coastal areas in Alaska and Russia. The eastern boundary of the Chukchi-Bering Seas population is near Colville Delta (Arthur *et al.* 1996, p. 219; Amstrup *et al.* 2004a, p. 254), and the western boundary is near Chauniskaya Bay in the Eastern Siberian Sea. The boundary between the Eastern Siberian Sea population and the Chukchi-Bering Seas population was determined from movements of adult female polar bears captured in the Bering and Chukchi Seas region (Garner *et al.* 1990, p. 222) (Figure 1). The Chukchi-Bering Seas population extends into the Bering Sea, and its southern boundary is determined by the annual extent of pack ice (Garner *et al.* 1990, p. 224; Garner *et al.* 1994, p. 113; Amstrup *et al.* 2004a, p. 670). Historically polar bears have ranged as far south as St. Matthew Island (Hanna 1920, pp. 121–122) and the Pribilof Islands (Ray 1971, p. 13) in the Bering Sea. Adult female polar bears captured in the Beaufort Sea may make

seasonal movements into the Chukchi Sea in an area of overlap located between Point Hope and Colville Delta, centered near Point Lay (Amstrup *et al.* 2002, p. 114; Amstrup *et al.* 2005, p. 254). Distributions based on satellite radio-telemetry data show zones of overlap between the Chukchi-Bering Seas population and the southern Beaufort Sea population (Amstrup *et al.* 2004a, p. 670; Amstrup *et al.* 2005, p. 253). Telemetry data indicate that polar bears marked in the Beaufort Sea spend about 25 percent of their time in the northeastern Chukchi Sea, whereas females captured in the Chukchi Sea spend only 6 percent of their time in the Beaufort Sea (Amstrup 1995, pp. 72–73). Average activity areas of females in the Chukchi-Bering Seas population (244,463 $km^2$, range 144,659–351,369 $km^2$ (94,387 $mi^2$, range 55,852–135,664 $mi^2$)) (Garner *et al.* 1990, p. 222) were more extensive than those in the Beaufort Sea population (166,694 $km^2$, range 14,440–616,800 $km^2$ (64,360 $mi^2$, range 21,564–52,380 $mi^2$)) (Amstrup *et al.* 2000b, p. 960). Radio-collared adult females of the Chukchi-Bering Seas population (n = 20) spent 68 percent of their time in the Russian region and 32 percent in the American region (Garner *et al.* 1990, p. 224).

*Sea-Ice Habitat*

Polar bears depend on sea ice for a number of purposes, including as a platform from which to hunt and feed upon seals; as habitat on which to seek mates and breed; as a platform on which to travel to terrestrial maternity denning areas, and sometimes for maternity denning; and as a substrate on which to make long-distance movements (Stirling and Derocher 1993, p. 241). Mauritzen *et al.* (2003b, p. 123) indicated that habitat use by polar bears during certain seasons may involve a trade-off between selecting habitats with abundant prey availability versus the use of safer retreat habitats of higher ice concentrations with less prey. Their findings indicate that polar bear distribution may not be solely a reflection of prey availability, but that other factors such as energetic costs or risk may be involved.

Polar bears show a preference for certain sea-ice stages, concentrations, forms, and deformation types (Stirling *et al.* 1993, pp. 18–22; Arthur *et al.* 1996, p. 223; Ferguson *et al.* 2000b, pp. 770–771; Mauritzen *et al.* 2001, p. 1,711; Durner *et al.* 2004, pp. 16–20; Durner *et al.* 2009a, pp. 51–53). Using visual observations of bears or bear tracks, Stirling *et al.* (1993, p. 15) defined seven types of sea-ice habitat and determined habitat preferences. They suggested that the following are features that influenced polar bear distribution: (1) Stable shore-fast ice with drifts; (2) stable shore-fast ice without drifts; (3) floe edge ice; (4) moving ice; (5) continuous stable pressure ridges; (6) coastal low level pressure ridges; and (7) fiords and bays. Polar bears preferred the floe ice edge, stable shore-fast ice with drifts, and moving ice (Stirling 1990, p. 226; Stirling *et al.* 1993, p. 18). In another assessment, categories of sea-ice habitat included pack ice, shore-fast ice, transition zone (also known as the shear zone—the active area consisting of openings between the shore-fast ice and drifting pack ice), polynyas, and leads (USFWS 1995, p. 9).

Pack ice is the primary summer habitat for polar bears in the United States (Durner *et al.* 2004, pp. 16–20). Shore-fast ice is used by polar bears for feeding on seal pups, for movement, and occasionally for maternity denning (Stirling *et al.* 1993, p. 20). In protected bays and lagoons, the shore-fast ice typically forms in the fall and remains stationary throughout the winter. Along the open shorelines, the shore-fast ice consists of sea ice that freezes and eventually becomes grounded to the bottom, or develops from offshore ice that is pushed against the land by the wind and ocean currents (Lentfer 1972, p. 165). The shore-fast ice usually occurs in a narrow belt along the coast. Most shore-fast ice melts in the summer.

Open water at leads and polynyas attracts seals and other marine mammals and provides preferred hunting habitats during winter and spring. The shore system of leads and recurrent polynyas are productive areas and are kept at least partially open during the winter and spring by ocean currents and winds. The width of the leads ranges from several meters to tens of kilometers (Stirling *et al.* 1993, p. 17).

Polar bears must move throughout the year to adjust to the changing distribution of sea ice and seals (Stirling 1988, p. 63; USFWS 1995, p. 4). Although polar bears are generally limited to areas where the sea is ice-covered for much of the year, they are not evenly distributed throughout their range on sea ice. They show a preference for certain sea-ice stages and concentrations, and for specific sea-ice features (Stirling *et al.* 1993, pp. 18–22; Arthur *et al.* 1996, p. 223; Ferguson *et al.* 2000a, p. 1,125; Ferguson *et al.* 2000b, pp. 770–771; Mauritzen *et al.* 2001, p. 1,711; Durner *et al.* 2004, pp. 18–19; Durner *et al.* 2006a, pp. 34–35; Durner *et al.* 2009a, pp. 51–53). Sea-ice habitat quality varies temporally as well as geographically (Ferguson *et al.* 1997, p. 1,592; Ferguson *et al.* 1998, pp. 1,088–1,089; Ferguson *et al.* 2000a, p. 1,124; Ferguson *et al.* 2000b, pp. 770–771; Amstrup *et al.* 2000b, p. 962). Polar bears show a preference for sea ice located over and near the continental shelf (Derocher *et al.* 2004, p. 164; Durner *et al.* 2004, pp. 18–19; Durner *et al.* 2009a, p. 55). This is likely due to higher biological productivity in these areas (Dunton *et al.* 2005, pp. 3,467–3,468), and greater accessibility to prey in nearshore shear zones and polynyas compared to deep-water regions in the central polar basin (Stirling 1997, pp. 12–14). Bears are most abundant near the shore in shallow-water areas, and also in other areas where currents and ocean upwelling increase marine productivity and serve to keep the ice cover from becoming too consolidated in winter (Stirling and Smith 1975, p. 132; Stirling *et al.* 1981, p. 49; Amstrup and DeMaster 1988, p. 44; Stirling 1990, pp. 226–227; Stirling and Øritsland 1995, p. 2,607; Amstrup *et al.* 2000b, p. 960). Durner *et al.* (2004, pp. 18–19; Durner *et al.* 2009a, pp. 51–52) found that polar bears in the Arctic Basin prefer sea-ice concentrations (percent of ocean surface area covered by ice) greater than 50 percent, and located over continental shelf water, which in Alaska is at depths of 300 m (984 ft) or less.

Over most of their range, polar bears remain on the sea ice year-round or spend only short periods on land. In the Chukchi Sea and Beaufort Sea areas of Alaska and northwestern Canada, for example, less than 10 percent of the polar bear locations obtained via radio telemetry were on land (Amstrup 2000, p. 137; Amstrup, U.S. Geological Survey, unpublished data); the majority of land locations were of polar bears occupying maternal dens during the winter. However, some polar bear populations occur in seasonally ice-free environments and use land habitats for varying portions of the year.

Polar bear distribution in most areas varies seasonally with the extent of sea-ice cover and availability of prey (Stirling and Lunn 1997, p. 178). The seasonal movement patterns of polar bears emphasize the role of sea ice in their life cycle. During the winter in Alaska, sea ice may extend 400 kilometers km (248 mi) south of the Bering Strait, and polar bears will extend their range to the southernmost proximity of the ice (Ray 1971, p. 13; Garner *et al.* 1990, p. 222). Sea ice disappears from the Bering Sea and is greatly reduced in the Chukchi Sea in the summer, and polar bears occupying these areas move as much as 1,000 km (621 mi) to stay with the retreating pack ice (Garner *et al.* 1990, p. 222; Garner *et*

*al.* 1994, pp. 407–408). Throughout the Polar Basin during the summer, polar bears generally concentrate along the edge of or into the adjacent persistent pack ice (Durner *et al.* 2004; Durner *et al.* 2006a). Major northerly and southerly movements of polar bears appear to depend on distribution of sea ice, which, in turn, is determined by the seasonal melting and refreezing of sea ice (Amstrup 2000, p. 142).

In areas where sea-ice cover and character are seasonally dynamic, a large multi-year home range, of which only a portion may be used in any one season or year, is an important part of the polar bear life-history strategy. In other regions, where ice is less dynamic, home ranges are smaller and less variable (Ferguson *et al.* 2001, pp. 51–52). Data from telemetry studies of adult female polar bears show that they do not wander aimlessly on the ice, nor are they carried passively with the ocean currents as previously thought (Pedersen 1945 cited in Amstrup 2003, p. 587; Amstrup *et al.* 2000b, p. 956; Mauritzen *et al.* 2001, p. 1704; Mauritzen *et al.* 2003a, p. 111; Mauritzen *et al.* 2003b, p. 123). Results show strong fidelity to activity areas that are used over multiple years (Ferguson *et al.* 1997, p. 1,589). Not all geographic areas within an individual polar bear's home range are used each year. The distribution patterns of some polar bear populations during the open water and early fall seasons have changed in recent years (Durner *et al.* 2006, p. 30; Durner *et al.* 2009a, pp. 49, 53). In the Beaufort Sea, for example, greater numbers of polar bears are being found on shore during the fall than recorded at any previous time (Schliebe *et al.* 2006, p. 559).

*Terrestrial Denning Habitat*

Unlike brown bears and black bears, which hibernate in winter when food is unavailable, polar bears are able to forage for seals throughout the winter (Amstrup 2003, p. 593). Polar bears are highly evolved with respect to survival during periods of food deprivation. During food shortages, they are able to shift their metabolism into a hibernation-like pattern, but still remain active. Generally, only pregnant polar bears routinely enter dens in the fall for extended periods (however, *see* Messier *et al.* 1994 and Ferguson *et al.* 2000a). Typically, pregnant female polar bears go into the dens in November, give birth in late December, and emerge from their dens after the cubs have reached 9.1–11.4 kg (20–25 lbs) in March or April (Ramsay and Stirling 1988, p. 602). In Alaska, cubs stay with their mother for 2 years after departing the den (Amstrup 2003, p. 599).

Polar bears are particularly vulnerable to anthropogenic and natural disturbances during denning compared to other times in their life cycle (Amstrup 2003, p. 606) because they are more limited in their ability to safely move away from the disturbance. The cubs, which are born in mid-winter, weigh only 600–700 g (1.3–1.5 lbs), and are blind, lightly furred, and helpless (Blix and Lentfer 1979, p. R67). The maternal den provides a relatively warm, protected, and stable environment until they are large enough (approximately 11.4 kg (25 lbs)) to survive conditions outside the den in March or April. The dens provide thermal insulation, and if the family group abandons the den early, the cubs will die (Blix and Lentfer 1979, p. R67; Amstrup and Gardner 1994, p. 7). Throughout the species' range, most pregnant female polar bears excavate dens in snow located on land in the fall and early winter period (Harington 1968, p. 6; Lentfer and Hensel 1980, p. 102; Ramsay and Stirling 1990, p. 233; Amstrup and Gardner 1994, p. 5). The only known exceptions are in western and southern Hudson Bay, where polar bears first excavate earthen dens and later reposition into adjacent snow drifts (Jonkel *et al.* 1972, p. 146; Ramsay and Stirling 1990, p. 233), and in the southern Beaufort Sea, where a portion of the population dens in snow caves located on the drifting pack ice and shore-fast ice (Amstrup and Gardner 1994, p. 5). Successful denning by polar bears requires accumulation of sufficient snow for den construction and maintenance and insulation for the female and cubs. Adequate and timely snowfall combined with winds that cause snow accumulation leeward of requisite topographic features create denning habitat (Harington 1968, p. 12).

In addition, for bears moving from the sea ice to land, the timing of freeze-up and the distance from the pack ice are two factors that can affect when pregnant females enter dens. Access to terrestrial denning sites is dependent upon the location of the sea ice, amount of stable ice, ice consolidation, and the length of the melt season during the summer and fall (Fischbach *et al.* 2007, p. 1,395). The Alaskan southern Beaufort Sea and the Chukchi-Bering Seas polar bear populations typically remain with the sea ice throughout the year. During the fall, when the sea ice is at its minimum extent, the parturient females begin to look for suitable denning sites in relatively close proximity to the sea-ice edge. The closest terrestrial denning sites to the ice edge in the Chukchi Sea during the late fall are Wrangel Island, Russia, and the northern coastline of the Chukotka Peninsula, Russia. Polar bears from the Chukchi-Bering Seas population have typically used terrestrial den sites in Russia because accessibility to potential terrestrial denning habitat in western Alaska is not possible due to the great distance polar bears would have to swim. In the future the distance between the Chukchi Sea ice edge and western Alaska is expected to increase due to changes in the sea-ice characteristics (described below in the section *Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring*) from climate change.

A great amount of polar bear denning arctic-wide occurs in core areas, which show high use over time (Harington 1968, pp. 7–8). Examples include the west coast of Hudson Bay in Canada and Wrangel Island in Russia (Harrington 1968, p. 8; Ramsey and Stirling 1990, p. 233). In some portions of the species' range, polar bear dens are more dispersed, with dens scattered over larger areas at lower density (Lentfer and Hensel 1980, p. 102; Stirling and Andriashek 1992, p. 363; Amstrup 1993, p. 247; Amstrup and Gardner 1994, p. 5; Messier *et al.* 1994, p. 425; Born 1995, p. 84; Ferguson *et al.* 2000a, p. 1125; Durner *et al.* 2001, p. 117; Durner *et al.* 2003, p. 57). In northern Alaska, while denning habitat is more diffuse than in other areas, certain areas such as barrier islands, river banks, much of the North Slope coastal plain, and coastal bluffs that occur at the interface of mainland and marine habitat receive proportionally greater use for denning (Durner *et al.* 2004, entire; Durner *et al.* 2006a, entire).

The primary denning habitat for polar bears in the southern Beaufort Sea population is on the relatively flat topography of the coastal area on the North Slope of Alaska and the pack ice (Amstrup 1993, p. 247; Amstrup and Gardner 1994, p. 7; Durner *et al.* 2001, p. 119; Durner *et al.* 2003, p. 61; Fischbach *et al.* 2007, p. 1,400). Some of the habitat suitable for the accumulation of snow and use for denning has been mapped on the North Slope (Durner *et al.* 2001, entire; Durner *et al.* 2006a, entire). The primary denning areas for the Chukchi-Bering Seas population occur on Wrangel Island, Russia, where up to 200 bears per year have denned annually, and the northeastern coast of the Chukotka Peninsula, Russia (Stishov 1991a, p. 107; Stishov 1991b, p. 91; Ovsyanikov 2006, p. 169). The key characteristic of all denning habitat is topographic features that catch snow in

the autumn and early winter (Durner *et al.* 2003, p. 61). As in the Canadian arctic, Russia, and Svalbard, Norway (Harington 1968, p. 12; Larsen 1985, p. 322; Stishov 1991b, p. 91; Stirling and Andriashek 1992, p. 364), most polar bear dens in Alaska occur relatively near the coast along the coastal bluffs and river banks of the mainland and barrier islands and on the drifting pack ice (Amstrup and Gardner 1994, p. 5; Amstrup 2003, p. 596).

**Previous Federal Actions**

We listed the polar bear as a threatened species under the Act on May 15, 2008 (73 FR 28212). At the time of listing, we determined that critical habitat for the polar bear was prudent, but not determinable. We concluded that, given the complexity of determining which specific areas in the United States might contain physical and biological features essential to the conservation of the polar bear under rapidly changing environmental conditions, we required additional time to conduct a thorough evaluation and coordinate with species experts. Thus, we did not propose critical habitat for the polar bear at that time. We issued a final special rule for the polar bear under section 4(d) of the Act (16 U.S.C. 1531 *et seq.*) on December 16, 2008 (73 FR 76249). The special rule provides measures that are necessary and advisable to provide for the conservation of the polar bear.

On July 16, 2008, the Center for Biological Diversity, Natural Resources Defense Council, and, Greenpeace, Inc., filed an amended complaint against the Service for, in part, failing to designate critical habitat for the polar bear concurrently with the final listing rule [*Center for Biological Diversity et al.* v. *Kempthorne et al.,* No. 08–2113- D.D.C. (transferred from N.D. Cal.)]. On October 7, 2008, the U.S. District Court for the Northern District of California entered an order approving a stipulated settlement of the parties. The stipulated settlement, in part, required the Service, on or before June 30, 2010, to submit to the **Federal Register** a final critical habitat determination for the polar bear. On March 24, 2010, the U.S. District Court for District of Columbia approved the stipulation extending the deadline for submission of the final critical habitat designation to the **Federal Register** to November 23, 2010. The Service issued the proposed rule for the designation of critical habitat for the polar bear in the United States on October 29, 2009 (74 FR 56058). We also published a document making available the draft economic analysis of the proposed critical habitat designation on May 5, 2010 (75 FR 24545). For more information on previous Federal actions concerning the polar bear, refer to the final listing rule and final special rule published in the **Federal Register** on May 15, 2008 (73 FR 28212), and December 16, 2008 (73 FR 76249), respectively.

**Summary of Comments and Recommendations**

We requested written comments from the public during two comment periods on the proposed rule to designate critical habitat for the polar bear in the United States. The first comment period, which was associated with the publication of the proposed rule (74 FR 56058), opened on October 29, 2009. That comment period was open for 60 days, closing on December 28, 2009. We also requested comments on the proposed critical habitat designation and associated draft economic analysis (DEA) during a 60-day comment period that opened May 5, 2010, and closed on July 6, 2010 (75 FR 24545). During the comment periods we also contacted appropriate Federal, State, and local agencies; Alaska Native organizations; and other interested parties and invited them to comment on the proposed rule to designate critical habitat for the polar bear in Alaska and the associated DEA.

In response to requests from the public, public hearings were held in Anchorage, Alaska on June 15, 2010, and Barrow, Alaska on June 17, 2010. These hearings were announced in the **Federal Register** on May 5, 2010 (75 FR 24545), and a legal notice of the hearings was published in the Legal Section of the Anchorage Daily News (June 1, 2010). Three display ads announcing the hearings on proposed critical habitat were published on June 10, 2010, in the Arctic Sounder (Barrow, Alaska), Nome Nugget (Nome, Alaska), and Anchorage Daily News (Anchorage, Alaska). A fourth display ad was published in the Anchorage Daily News on June 14, 2010. We established teleconferencing capabilities for the Barrow, Alaska, public hearing to allow outlying villages the opportunity to provide oral testimony. The communities of Kotzebue and Little Diomede participated in this public hearing via teleconference. The public hearings were attended by approximately 73 people.

In addition, information on the proposed critical habitat was presented at the Inuvialuit Game Council and North Slope Borough meeting on April 29, 2009, in Barrow, Alaska; the Alaska Nanuuq Commission Meeting on August 25–26, 2009, in Nome, Alaska; and the North Slope Borough on March 1, 2010, in Barrow, Alaska.

During the public comment periods, we received approximately 111,690 comments, including letters and post cards, citizen petitions, e-mail or web messages, and public hearing testimony. We received comments from Federal agencies, Alaska Native Tribes and tribal organizations, Federal commissions, State and local governments, commercial and trade organizations, conservation organizations, non-governmental organizations, and private citizens.

A majority of the comments received (99 percent) supported the proposed designation of critical habitat for polar bears in Alaska. The range of comments varied from those that provided general supporting or opposing statements with no additional explanatory information to those that provided extensive comments and information supporting or opposing the proposed designation. All substantive information provided during both comment periods has been considered in this final determination and, where appropriate, has been incorporated directly either into this final rule or the final economic analysis, or is addressed below.

Comments on the October 29, 2009, proposed rule (74 FR 56058) and subsequently on the DEA varied considerably, from those that questioned the need for the critical habitat designation to those that stated the proposed critical habitat designation did not provide enough protection for the polar bear. Many of the comments focused on the need to include or exclude additional habitat from the proposed critical habitat designation.

Some comments suggested that the Service should increase the proposed designated critical habitat to include: (1) Areas currently unoccupied or marginal, as they may become more important as habitat is lost due to climate change; (2) large areas required to maintain connectivity between essential habitats; or (3) increased terrestrial denning habitat required due to the loss of suitable sea-ice denning habitat.

Other comments suggested that our proposed critical habitat designation was too large, and that specific areas should be excluded: (1) For economic reasons; (2) for reasons of national security; (3) due to the presence of existing management plans that adequately protect polar bears and their habitat; or (4) because the designated critical habitat areas did not contain the primary constituent elements (PCEs) required for polar bear survival and recovery.

All substantive information provided during the comment periods on the proposed rule has either been incorporated directly into this final determination, incorporated into the final economic analysis, or addressed below. Comments received were grouped into general issues specifically relating to the proposed critical habitat designation for the polar bear, and are addressed in the following summary and incorporated into the final rule as appropriate.

*Peer Review*

In accordance with our peer review policy published in the **Federal Register** on July 1, 1994 (59 FR 34270), we solicited expert opinions from four knowledgeable individuals with scientific expertise that included familiarity with polar bear, the geographic region in which it occurs, conservation biology principles, and the subsistence and cultural needs of Alaska Native people. We received responses from two of the peer reviewers. We reviewed all comments we received from the peer reviewers for substantive issues and new information regarding critical habitat for the polar bear. These comments, which were aggregated by subject matter, are summarized and addressed below and are incorporated into the final rule as appropriate.

*Peer Reviewer Comments*

*Comment 1:* One peer reviewer commented that the list of eight factors influencing polar bear use of habitats is appropriate and covers the main points. Missing from the discussion is the issue that age, sex, and reproductive status may also affect polar bear use of habitats. Evidence of spatial segregation and habitat preference for bears of different groups is available in the literature, although it is not well studied.

*Our response:* We agree and have acknowledged in this final rule that habitat use can vary with respect to age, sex, and reproductive status.

*Comment 2:* One peer reviewer suggested the Service should change the scientific name of the ringed seal to *Pusa hispida,* from the more commonly used name *Phoca hispida.*

*Our response:* We concur. The generic name for the ringed seal has been moved back and forth between the genus *Pusa* and *Phoca* in recent decades. Although the designation of *Pusa hispida* is not universal, we defer to the classification of the species as found in the Integrated Taxonomic Information System, which places this species in the genus *Pusa.*

*Comment 3:* One peer reviewer suggested the Service provide supporting documentation for the statement that the energetic demands of polar bears are the greatest during the winter season.

*Our response:* We agree and have removed the statement from the rule, as there is no scientific information to support our assumption.

*Comment 4:* One peer reviewer noted that the more recent studies on polar bear evolution in sea-ice habitats push the divergence date between brown (grizzly) bears and polar bears to somewhere between 1.3–2.3 million years (Yu *et al.* 2007, p. 8; Arnason et *al.* 2007, p. 870), although the reviewer recognized that Krause *et al.* (2008, p. 4) urged caution on the time of divergence.

*Our response:* We disagree, as the most recently reported date of divergence for the brown bear and polar bear lineage is estimated to be between 110,000 and 130,000 years before present (Lindqvist *et al.* 2010, p. 5,053).

*Comment 5:* In the section regarding adaptations unique to polar bears, one peer reviewer suggested that the Service should mention polar bear behavioral and physiological adaptations such as their walking hibernation (serum urea to creatinine ratio) and winter activity. These adaptations allow polar bears to remain active in winter, unlike, for instance, Grizzly bears in Alaska, which all hibernate in winter.

*Our response:* We agree and have acknowledged in the Background section of this rule that among bear species in the United States that occur in Alaska, winter activity and walking hibernation are unique to polar bears. Polar bears are highly evolved with respect to survival during periods of food deprivation. Polar bears are able to alter their metabolism by shifting into a hibernation-like metabolic pattern during food shortages. During these periods, active polar bears are able to metabolize their fat similar to hibernating polar bears.

*Comment 6:* One peer reviewer suggested the Service note that sea ice can also "form over" the shallower waters of the continental shelf due to freezing temperatures, and it is not necessary that the ice must be transported to the location as a naïve interpretation may suggest.

*Our response:* We agree and have made the necessary changes to the text of this final rule.

*Comment 7:* One peer reviewer noted that the only issue of critical habitat not explicitly addressed is the use of areas farther offshore than the 300 m (984 ft) bathymetric contour. Also, some commenters noted that offshore areas in deeper waters are currently used by polar bears in the southern Beaufort Sea and are increasing in importance as summer refugia. Thus, inclusion of these areas should be considered. The reviewer also noted that data on the use of these areas are available and in the context that polar bears can be considered a migratory species, it is important to consider the connectivity of all habitats used by the species.

*Our response:* While we acknowledge polar bears temporarily use ice over deeper waters when ice is absent from the shallower waters over the continental shelf, we believe the ice over deeper waters does not contain the biological features of the sea ice that are essential to the conservation of the polar bear, such as access to ice seals, to be considered critical habitat. We base this on the work of Durner *et al.* (2004, p. 17), which shows that polar bears stay almost entirely over the shallower waters of the continental shelf. In terms of providing a migratory corridor, see our response to comment 28 of the public comments below.

*Comment 8:* One peer reviewer suggested that the statement, "typically, polar bears tend to avoid humans," should include some reference to polar bear use of human refuse dumps and attraction to camps due to attractants (*e.g.,* food smells).

*Our response:* We agree and changed the statement to reflect potential anthropogenic attractants (*e.g.,* subsistence-harvested whale carcasses, landfills).

*Comment 9:* One peer reviewer questioned the statement that ice-breaking activities may favorably alter essential features and in turn allow easier access to ringed seals by polar bears. The reviewer said that the statement is speculative and, without a reference, is unwarranted. There is no literature supporting ice breaking as allowing easier access, and access is only important if it allows an increase in kill rate. This is an unsubstantiated claim of benefit.

*Our response:* We agree that there is no literature supporting ice breaking as allowing easier access to seals. We base our statement on our observation of polar bears investigating the broken ice path behind a U.S. Coast Guard icebreaker. In addition, we feel we have qualified the statement by the use of the word "may".

*Comment 10:* One peer reviewer noted that the term Chukchi and Bering Seas population is used in the text, but the Chukchi and Bering Seas population is named the Chukchi Sea (or Alaska and Chukotka) population according to the IUCN Polar Bear Specialist Group.

*Our response:* We agree that differing terms may cause confusion and will use the term Chukchi-Bering Seas population to describe this population consistently throughout the text of this final rule. Using the names of the seas where the population resides has been a common naming convention used for the Arctic polar bear populations.

*Comment 11:* With regard to the statement in the proposed rule, "As the summer sea ice edge retracts to deeper, less productive Polar Basin waters, polar bears will face increasing competition for limited food resources, increasing distances to swim with increased energetic demands * * *", one peer reviewer suggested the Service provide clarification as to the reason why polar bears need to swim.

*Our response:* We added text where appropriate to provide clarification on the reason polar bears will likely encounter increasing distances over which they will need to swim as the summer sea-ice edge recedes beyond the continental shelf.

*Comment 12:* One peer reviewer stated that the following assertion we made needs further documentation: that shelter den importance may increase in the future if polar bears, experiencing nutritional stress as a result of loss of optimal sea-ice habitat and access to prey, need to minimize nonessential activities to conserve energy.

*Our response:* We believe it is reasonable to infer that a potential increase in nutritional stress may lead to an increase in the importance of shelter dens to the species. In addition, we believe we have sufficiently qualified the statement and provided appropriate support for our assertion (see Physical and Biological Features section of this final rule for a further discussion of this).

**Public Comments**

*Comments Related to the Need To Designate Critical Habitat and the Primary Constituent Elements (PCEs)*

*Comment 13:* Many commenters questioned the need to designate critical habitat for the polar bear. One commenter asserted that the Service did not adequately document or explain the basis for its assumption that the polar bear critical habitat designation is "not expected to result in additional significant conservation measures." The commenter asserted that if this is the case, then there is no need to designate critical habitat for the polar bear.

Another commenter stated that if the Department of the Interior's projection of climatic warming is accurate, then the areas essential for polar bear conservation would be outside the United States (*i.e.,* the Canadian Archipelago). They stated that polar bears will likely be gone from Alaska in 50 years, and, as a result, designation of critical habitat areas in Alaska is not essential to the survival and future conservation of polar bears.

*Our response:* According to section 4(a)(3)(A) of the Act, the Service has a statutory obligation to designate critical habitat for endangered and threatened species to the maximum extent prudent and determinable. Further, as a result of a lawsuit filed by the Center for Biological Diversity, Natural Resources Defense Council, and Greenpeace, Inc., we were ordered by the court to designate critical habitat if prudent for the polar bear. In the final rule listing the polar bear as a threatened species (May 15, 2008, 73 FR 28212) and our proposed rule to designate critical habitat (October 29, 2009, 74 FR 56058), we determined that the designation of critical habitat for the polar bear is prudent. Therefore, we are required to designate critical habitat for the polar bear to fulfill our legal and statutory obligations.

Given the current conservation measures under section 7 of the Act and the Marine Mammal Protection Act (MMPA), we believe that the designation will not result in significant additional conservation measures. However, critical habitat designation increases the protections afforded a listed species by focusing attention on the species' habitat needs, and by ensuring that Federal agency actions do not destroy or adversely modify designated areas.

Although the Alaska populations are predicted to decline by mid-century due to loss of sea ice habitat from climate change, polar bears are expected to exist in Alaska in reduced numbers. In addition, it is possible that actions taken now to reduce the anthropogenic contribution of greenhouse gases could slow the current trend in sea ice decline, particularly during the second half of the century. Therefore, it is important to protect the essential polar bear habitats in Alaska.

*Comment 14:* Several commenters suggested that the following PCE should be added: unobstructed access to, and absence of disturbance from humans and human activity on the sea ice and barrier islands.

*Our response:* We believe that the barrier island PCE as described in this critical habitat designation adequately provides polar bears unimpeded access to sea ice and barrier islands. We base our assertion on our experience that a 1.6 km (1 mi) buffer has provided adequate protection for known dens from human activities, and the study (Anderson and Aars 2008, p. 503) that indicated that females with cubs are sensitive to noise disturbance at distances of approximately 1.6 km (1 mi). Thus, the no-disturbance zone surrounding the barrier islands should adequately protect polar bears denning, resting, or moving along the coastal barrier islands from human disturbance. With respect to the sea-ice habitat, we believe that the overall level of human disturbance would be very low, especially given the remoteness, relatively low level of human activity, and extent of the designated sea-ice habitat (over 400,000 $km^2$ (154,000 $mi^2$)).

*Comment 15:* Several commenters suggested that the sea ice PCE is too narrowly defined as simply the ice itself and currently omits biological features essential to the conservation of polar bears. They suggest the Service consider including in the PCE: the ice seals (primarily ringed and bearded seals) upon which polar bears prey, the quality of the water column under the ice, and the biotic community in the water column that supports the relatively short Arctic food chain. They note that declines in seal pupping have resulted in well-documented declines in polar bears.

*Our response:* Section 3(5)(A)(i) of the Act defines critical habitat to include areas within the geographical area occupied by the species on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection. Throughout our discussion of critical habitat, we have highlighted the importance of ice-dependent seals to polar bears and the importance of sea ice to polar bears for normal feeding behavior. The sea ice PCE is intended, in part, to identify habitat that supports polar bear prey and normal feeding behavior. Therefore, we have added text to the sea ice PCE stating that the sea-ice habitat includes adequate prey resources (primarily ringed and bearded seals) to support polar bears. We believe that the ability of sea-ice habitat to support polar bear prey and normal feeding behavior reflects the quality of the water column under the sea ice and the quality of the biotic community that supports the Arctic food chain.

*Comment 16:* One commenter recommended that we conduct additional research and denning surveys along the Chukchi Sea coast to reassess the coastal region for its potential as critical habitat and determine the effects

on the population as habitat loss issues arise.

Another commenter suggested the Service should include terrestrial denning areas along the Chukchi Sea coast in western Alaska to protect occupied and unoccupied denning habitat that may become more important with the predicted loss of sea-ice habitat and the stress of over-hunting.

*Our response:* The Service acknowledges that terrestrial denning habitat containing the appropriate topographic, and some macrohabitat, features occur in areas west of Barrow, Alaska. However, we have added access via sea ice to the terrestrial denning habitat PCE because large expanses of open water and the timing of ice freeze-up can prohibit polar bear access to den sites. For example, denning does not occur on Hopen Island, the southernmost island of Svalbard, Norway, when freezing of the sea ice occurs too late, which precludes access to den sites (Derocher *et al.* 2004, p. 166). In addition, Fischbach *et al.* (2007, p. 1,402) concluded that terrestrial denning is restricted by greater open water fetch. Few bears have been documented to den in areas west of Barrow, Alaska (U.S. Geological Survey unpublished data). Historically, polar bears from the Chukchi/Bering Seas population have not had access to denning habitat in western Alaska because at the end of the summer sea melt season large expanses of open water separate the bears from western Alaska. Thus, they have used terrestrial denning sites on Wrangel Island and the Chukotka Peninsula, areas that are in proximity to the sea-ice edge, when the sea ice is at its minimum extent in the fall. Presumably, energetic demands limit the ability of pregnant polar bears to swim great distances. Therefore, access from summer foraging habitats to available terrestrial denning habitats would be limited to areas with fall sea-ice access. Thus, we added access to suitable terrestrial denning habitat to the terrestrial denning habitat PCE. Consequently, we have determined that the areas in western Alaska do not contain the specific features essential to the conservation of polar bears for terrestrial denning habitat and did not designate critical habitat in western Alaska.

The Service is currently conducting research on the Chukchi-Bering Seas polar bear population. We will continue to evaluate the importance of these areas in the future as new information becomes available.

*Comment 17:* Many commenters, including the State of Alaska, indicated that the area proposed for critical habitat designation is too large and should be reduced based on a spatial-temporal analysis and designated on a seasonal basis or should be dynamic to reflect the changing ice conditions throughout the year or even between years. They stated that areas with less than 15 percent sea-ice concentration do not contain the physical and biological features essential for the conservation of polar bears, and that the Service doesn't explain why special management measures may be needed for sea-ice habitat, as that area is basically uninhabited and inhospitable to humans. They added that most of the area is currently unmanaged. Another commenter suggested that the Service should develop a system for determining when sea-ice conditions meet the three criteria of (a) greater than 50 percent ice concentration, (b) near leads, open water, or ephemeral polynyas, and (c) water depths less than 300 m (984 ft).

*Our response:* The Service evaluated the potential for incorporating specific seasonal and geographical parameters when designating the sea-ice critical habitat, but we determined that the extreme variability and dynamic nature of the sea ice, especially in the face of climate change, made it difficult and impractical to partition the sea-ice habitat into meaningful seasonal and geographic units. In addition, according to our implementing regulations (50 CFR 424.12(c)), critical habitat boundaries should be clearly defined for the public. A changeable boundary that was defined based on the seasonal presence of sea-ice would not provide the clarity or certainty to the public and stakeholders as to which areas are included in critical habitat. It also may be in conflict with our regulations which state that we are to define the specific areas, and then delineate and describe those areas in the regulation of the rule-making. Further, specific case law has clarified that the critical habitat need not contain the essential features at all times or be used consistently by the species, but rather can be used temporally during migration, movement, denning, or other life history functions (*Arizona Cattle Grower's Ass'n* v. *Salazar,* 606 F. 3d 1160 (9th Cir. 2010)). We believe that spatial-temporal considerations can be evaluated as appropriate for individual projects on a case-by-case basis. In addition, Federal agencies and potential stakeholders, such as the oil and gas industry, that may need to consult based on the designation of critical habitat, need well-defined boundaries for planning purposes. Planning projects and assessing impacts would be very difficult if the boundaries of critical habitat were constantly changing. One of the educational benefits of a critical habitat designation is that it provides certainty to consulting agencies on the location and extent of critical habitat.

In response to the second comment on the potential need for special management considerations, section 3(5)(A)(i) of the Act states that the physical and biological features essential to the conservation of the species "may" require special management considerations or protections. The Act does not state that those features *must* require such management or protection. Nonetheless, the Service believes that special management considerations may be necessary due to the expansion of offshore oil and gas operations and the absence of the following: updated oil spill response plans that adequately deal with polar bears and their habitat; demonstrated methods for effective oil spill clean up in the broken sea-ice conditions in the Arctic; and adequate quantities of oil spill equipment to protect critical habitat. An oil spill in Alaska similar to the recent catastrophic oil spill from the Deepwater Horizon rig in the Gulf of Mexico would be even more difficult to control and clean up effectively due to the extreme Arctic conditions, limited resources available locally, and the difficulty of accessing these very remote areas particularly during winter.

*Comment 18:* One commenter suggested that the Service should create an adaptive framework to incorporate a rolling inland boundary for the terrestrial critical habitat to account for any Beaufort Sea coastal erosion caused by climate change.

*Our response:* Jones *et al.* (2009, p. 2) determined that coastal erosion along a 64-km (40-mi) stretch of the Beaufort Sea has more than doubled since the mid-1950s to a rate of 13.7 meters per year (m/yr) (45 feet per year(ft/yr)) between 2002 and 2007. In our assessment of the foreseeable future in the 2008 polar bear listing rule, we determined that 45 years was a reasonable timeframe based on the reliability of data to assess the threats of climate change and the ability to assess the impact of these threats on polar bear populations. Using 2050 as the foreseeable future based on the predicted loss of sea-ice habitat for the Chukchi-Bering Seas and the southern Beaufort Sea populations (Amstrup *et al.* 2008, p. 231) and assuming the rate of coastal erosion (14 m/yr, 46 ft/yr) in the Beaufort Sea between 2002 and 2007 (Jones *et al.* 2009, p. 2) did not change,

we determined that approximately 0.545 km (0.3 mi) of the coast would be lost by 2050. Following further evaluation based on the public comment, we decided that the method we used to determine the inland boundary of the terrestrial denning habitat provides a zone wide enough to compensate for changes due to coastal erosion. As new information becomes available, we will continue to monitor the situation to determine if additional special management considerations are needed.

In addition, according to our implementing regulations (50 CFR 424.12(c)), critical habitat boundaries should be clearly defined for the public. A changeable boundary that was defined based on extent of coastal sea erosion at any particular point in time would not provide the clarity or certainty to the public and stakeholders as to which areas are included in the critical habitat designation at that time. It also may be in conflict with our regulations which state that we are to define specific areas, and then delineate and describe those areas in the regulation of the rule-making.

*Comment 19:* One commenter thought that the proposed critical habitat designation is based on the premise that polar bears need vast areas of solitude. The commenter further stated that polar bears do not need vast areas of solitude as evidenced by congregations around whale carcasses.

*Our response:* Although polar bears may opportunistically feed on whale carcasses, as stated in the proposed rule, their primary prey is ice-dependent seals, which are widely distributed in sea ice covering the continental shelf. The distribution and movements of polar bears in the United States are closely tied to the seasonal dynamics of sea-ice extent as it retreats northward during summer melt and advances southward during autumn freeze. Sea ice disappears from the Bering Sea and is greatly reduced in the Chukchi Sea in the summer, and polar bears occupying these areas move as much as 1,000 km (621 mi) to stay with the retreating pack ice (Garner *et al.* 1990, p. 222; Garner *et al.* 1994, pp. 407–408). Average activity areas of females in the Chukchi-Bering Seas population (244,463 km$^2$, range 144,659–351,369 km$^2$ (94,387 mi$^2$, range 55,852–135,664 mi$^2$)) (Garner *et al.* 1990, p. 222) were more extensive than those in the Beaufort Sea population (166,694 km$^2$, range 14,440–616,800 km$^2$ (64,360 mi$^2$, range 21,564–52,380 mi$^2$)) (Amstrup *et al.* 2000b, p. 960). These figures illustrate the large areas typically occupied by polar bears. Thus, the designation is based not on the need for solitude but on the activity patterns of polar bears, which demonstrate that they need vast areas of sea ice to pursue the prey upon which they depend.

*Comment 20:* One commenter mentioned that the details of the denning habitat in the Barrow area are not defined, so it is difficult to determine where the actual denning areas are.

*Our response:* The designation of critical habitat is not intended to identify actual denning sites but rather to offer protection to the essential features that support denning habitat. The U.S. Geological Survey (USGS) verified the denning habitat mapped between Barrow, Alaska, and the Kavik River, Alaska, during the fall of 2010. Once the detailed denning habitat has been field verified and peer reviewed, information on the detailed denning site habitat from Barrow, Alaska, to an area approximately 32.2 km (20 mi) east of the Colville River will be available to the public. This will not change the critical habitat designation, but rather will give the public more detailed information about the location of specific den site features within the habitat.

*Comment 21:* Two commenters suggested that the Service should discuss the potential for contaminants other than hydrocarbons, in particular persistent organic pollutants that may adversely affect polar bear habitat.

*Our response:* A summary of the persistent organic pollutants (POPs) is discussed in the final rule listing the polar bear as a threatened species under the Act (May 15, 2008, 73 FR 28290). In that rule, we stated that many of the POPs are transported to the Arctic via large rivers, air, and ocean currents from more southerly latitudes and end up in the Arctic marine environment, including the sea ice and adjacent terrestrial habitats. In that rule, we also determined that, although contaminants may become a more significant threat in the future for polar bear populations experiencing declines related to nutritional stress brought on by changes in the sea ice, contaminants did not currently threaten polar bears or their habitat in Alaska.

*Comment 22:* Several commenters indicated that the Service should consider the effects of habitat fragmentation and should keep large areas of protected habitat in the designation as these will provide the most valuable protection as polar bears try to adapt to the changing climate.

*Our response:* The designated critical habitat occurs as contiguous zones along the coastline in northern and western Alaska within the range of the southern Beaufort Sea and the Chukchi-Bering Seas populations. The area chosen maintains the connectivity of the habitat and accounts for the changes of the dynamic sea-ice habitat both in time and space. Therefore, we believe that we have adequately designated significantly large patches of habitat that will facilitate movements between feeding areas, den sites, and resting areas and that will support the survival and recovery of the species.

*Comments Requesting Inclusions to the Proposed Critical Habitat Designation*

*Comment 23:* The Service received numerous comments to protect all the areas that polar bears occupy in the United States. Commenters argued that areas currently unoccupied or marginal may take on greater importance in the future as prime habitat is lost.

*Our response:* Using the best scientific information available, we have determined that the critical habitat areas that we are designating are sufficient for the conservation of polar bears in Alaska. As stated in the final listing rule, further global warming is "largely set" through mid-century because of GHGs already present in the atmosphere, the GHGs likely to be emitted over the next several decades, and interaction among climate processes. With this warming the polar bear's sea-ice habitat will continue to decline. In the final listing rule, we predicted that the polar bear populations in Alaska likely will decline significantly by mid-century (May 15, 2008, 73 FR 28241). However, polar bears are expected to exist in Alaska in reduced numbers. It is our intent that the designation of critical habitat will protect the functional integrity of the features essential for polar bear life history requisites into the future.

*Comment 24:* Several commenters supported the inclusion of the large area currently proposed due to the extensive inter-annual variation in the distribution of the different sea ice habitat types and the large areas used by polar bears each year. They indicated that such areas are required to prevent polar bears themselves from becoming endangered and for recovery.

*Our response:* We agree. Polar bears have large home ranges, and although they may use only a portion of a home range in a given year, based on sea-ice cover, they show a strong fidelity to activity areas that are used over multiple years. There is also evidence that polar bears use the sea-ice habitat differently based on age, sex, and reproductive status (Stirling *et al.* 1993, p. 20). It is important that the connectivity of these habitats remain

intact to maintain the functional integrity of these habitats for polar bears (Webster *et al.* 2002, p. 77). In addition, the dynamic nature of the sea ice with respect to extent and quality necessitates that large areas of sea ice are required for the survival and recovery of the species. For example, the ice in the Chukchi and Bering seas may move over 1,287 km (800 mi) between the maximum and minimum extents each year.

*Comment 25:* The Service received comments that the area of no-disturbance should be increased to provide additional protection from human disturbance when these habitats are used for resting and denning around the barrier islands.

Other commenters suggested that the no-disturbance zone was not required because polar bears do not need these areas for resting or movement corridors as human activities have occurred in these areas without any discernable impacts and polar bears are capable of successfully denning in close proximity to human activity.

*Our response:* Polar bears may find the habitat conditions on Barrier Islands (Unit 3) suitable for denning or resting but are unlikely to use these habitats if disturbed by the presence of humans. Denning females typically seek secluded areas away from human activity. Thus, the functional usefulness of this habitat requires an area that is free from human disturbance. Based on the documented responses of polar bears to human disturbance, we believe that the proposed no-disturbance zone of 1.6 km (1 mi) as described in the proposed critical habitat rule (October 29, 2009, 74 FR 56058) is sufficient to maintain the functional integrity of the suitable barrier island habitat for resting, denning, and movements along the coast.

*Comment 26:* Several commenters recommended the Service should increase the terrestrial denning habitat adjacent to the Beaufort Sea inland for one or more of the following reasons: (1) To account for Beaufort Sea coast erosion by climate change; (2) because polar bears are increasingly using terrestrial versus sea-ice habitat for denning in response to climate change; and (3) to provide a greater buffer from disturbance. We received one recommendation to use the upper 95-percent confidence interval reported by Anderson and Aars (2008), which would extend the inland boundary of the terrestrial denning habitat 2.8 km (1.7 mi). In addition, we received many comments to include 100 percent of the den sites and the entire coastal plain of the Arctic National Wildlife Refuge in the terrestrial denning critical habitat.

*Our response:* We believe the method developed by USGS that we used to identify critical and essential maternal den habitat on the North Slope coastal plain of Alaska is valid, and the best available information, because it: (1) Is designed to capture a robust estimation of the inland extent of the den use; (2) is a straightforward, unbiased method for estimating the area in which 95 percent of the maternal dens are located inland perpendicular to the coastline; (3) accurately represents polar bear denning concentrations in the zone from the United States-Canadian border to the Kavik River and the zone from the Kavik River to Barrow, Alaska, along the northern coast of Alaska; and (4) uses an 8-km (5-mi) concentric band that functionally identified a zone wide enough to account for potential changes likely to occur to this area due to climate change, including coastal erosion. Polar bears have occasionally denned up to 80 km (50 mi) inland, but this is a relatively rare occurrence as a majority of the bears have been documented to den relatively close to the coast (further explanation included in response to comment 42). We wanted to capture the areas where polar bears actually den and believe that the methods used, including the use of 95 percent of maternal dens located by telemetry and verified as confirmed or probable (Durner *et al.* 2009b, p. 4), accurately capture the major denning areas and, therefore, the features essential to polar bear denning habitat.

*Comment 27:* Several commenters suggested the Service should include areas outside the United States that polar bears currently occupy based on what scientific data indicate may be necessary to facilitate the species' adaptation to climate change.

*Our response:* Although the Service recognizes that terrestrial denning habitat on Wrangel Island and the Chukotka Peninsula, Russia, exist, we lack the legal authority to designate critical habitat outside the United States and its territories. According to our implementing regulations at 50 CFR 424.12(h), "Critical habitat shall not be designated within foreign countries or in other areas outside of United States jurisdiction."

*Comment 28:* The Service received several comments suggesting that areas proposed for extension should include sea-ice habitat beyond the 300-m (984-ft) isobath out to 321 km (200 mi) or up to the U.S. Exclusive Economic Zone (EEZ) zone in northern Alaska. They suggest that the Service increase the sea-ice habitat designated as critical habitat to acknowledge that these areas are likely to be important to the movements and migration of polar bears and that in the future these areas are likely to shift significantly in response to changing sea-ice availability.

*Our response:* We do not anticipate that polar bears would remain long in the ice-covered areas over deep water of the central basin in the southern Beaufort Sea. This is based on the premise that ringed and bearded seals, the species on which polar bears primarily feed, would not remain in these areas but rather would remain primarily in the shallower waters over the continental shelf in the absence of nearshore sea ice (Stirling *et al.* 1982, p. 13; Kingsley *et al.* 1985, p. 1,209). Also, designating sea ice beyond the 300-m (984-ft) isobath up to the EEZ zone in northern Alaska is not necessary to protect polar bears' ability to disperse to new habitats via the sea ice over the central basin in the southern Beaufort Sea.

*Comments Requesting Exclusions to the Proposed Critical Habitat Designation*

*Comment 29:* Several commenters suggested exclusion of areas outside of the proposed designated critical habitat.

*Our response:* Requests for exclusion of areas that occur outside the boundaries proposed for designation as critical habitat were not considered further, because these areas were not covered by the designation as they were determined not to contain the essential features or be essential themselves.

*Comment 30:* Several commenters indicated that there is no information that would justify excluding any proposed areas from the final critical habitat designation under section 4(b)(2) of the Act.

*Our response:* We do not agree with this hypothesis. The Secretary has exerted his discretion, under section 4(b)(2) of the Act, to exclude the Native communities of Barrow and Kaktovik, located along the coast in northern Alaska adjacent to the Beaufort Sea, which are within the boundaries of the proposed critical habitat designation, because the benefits of exclusion outweigh the benefits of inclusion, and the failure to designate these areas will not result in extinction of the species. Please refer to the section below entitled Exclusions Under Section 4(b)(2) of the Act for a more detailed discussion of this exclusion.

*Comment 31:* One commenter noted that the proposed critical habitat included at least one island that no longer exists in one of the river deltas on the North Slope.

*Our response:* The Service's proposed critical habitat was drawn in part from USGS topographic maps that were produced in 1955, and some of the barrier islands present in 1955 have since eroded. The loss of this small island since 1955 illustrates the ephemeral nature of the barrier islands, particularly in river deltas, which are constantly moving due to erosion and deposition from winds, currents, and the ice. We expect some islands will disappear and others may form in response to the changing climate conditions. Because data indicate that polar bears will use these islands when present, for denning, refuge from human disturbance, and movements along the coast to access maternal den and optimal feeding habitat, we determined that they are an essential feature. Therefore, new barrier islands that form are considered an essential feature of critical habitat for the polar bear. Individual projects proposed on any barrier island 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, will be evaluated on a case-by-case basis with respect to section 7 of the Act.

*Comment 32:* The Service received comments to exclude areas in which oil and gas exploration, development, production, and transportation activities are occurring or are planned in the future.

*Our response:* The existing manmade structures within critical habitat, including those within oil fields, do not contain the essential features for polar bears, are not essential themselves, and therefore do not meet the definition of critical habitat. As a result these features are not included in the final designation of critical habitat; they have been textually excluded because of the mapping scale of the designation.

Because of the uncertainty of activities at the leasing stage, the lack of management plans in place to specifically protect polar bear habitat, and the potential for negative impacts to polar bear critical habitat in these extremely large areas, we believe that there may be conservation benefits to the polar bear if large areas such as the Beaufort Sea Proposed Program Area (2007–2012) and the Chukchi Sea Proposed Program Area (2007–2012) remain in the designation. Inclusion of the areas associated with the oil and gas industry as part of the polar bear critical habitat would allow for section 7 consultations to occur for both polar bears and polar bear critical habitat. Therefore, the Secretary has decided not to exercise his discretion to exclude from critical habitat the areas within the current and proposed lease sale areas. However, as noted above, existing manmade structures within the oil fields are not included within the critical habitat designation.

*Comment 33:* Several commenters requested that manmade structures (e.g., seawalls, docks, pipelines) be excluded, because they occur in very limited areas, and generally do not contain the physical or biological features essential to the conservation of the species.

*Our response:* We agree and are not including existing manmade structures in the final critical habitat designation, because these structures do not contain the essential features for polar bears, nor are they essential themselves. Examples of manmade structures not included are houses, gravel roads, airport runways and facilities, pipelines, central processing facilities, saltwater treatment plants, well heads, pump jacks, housing facilities or hotels, generator plants, construction camps, pump stations, stores, shops, piers, docks, jetties, seawalls, and breakwaters. Existing manmade structures are excluded wherever they occur within the critical habitat designation, regardless of landownership or whether these structures are on or off shore.

*Comment 34:* Several commenters, including the State of Alaska, suggested that town sites within communities (generally the core areas where people live) be excluded from critical habitat. Other commenters suggested that in addition to excluding the core areas of human habitation there should be adequate funding and cooperative plans to reduce human-bear interactions in these communities.

*Our response:* We recognize the perceived conflict in designating critical habitat in areas with ongoing programs to deter polar bears from the area based on safety concerns for both people and bears. The Secretary has exerted his discretion to exclude the communities of Barrow and Kaktovik, the only two Alaska communities, from the final critical habitat designation (see Exclusions under Section 4(b)(2) of the Act below). The North Slope Borough provided the village district boundaries and the legal descriptions of those boundaries for the North Slope communities of Barrow and Kaktovik.

In response to the second part of the comment, the Service has been actively working with the Arctic National Wildlife Refuge and local residents in the village of Kaktovik to reduce bear-human interactions. Accomplishments to date have included setting up a Kaktovik polar bear committee, acquiring funds through tribal grants, conducting bear patrols, conducting safety and bear deterrence training, developing safety guidelines, and the developing polar bear viewing guidelines. The Service is expanding this effort to more communities as resources allow.

*Comment 35:* Several comments requested that we exclude from the designation lands immediately surrounding the inhabited communities to allow for economic growth and expansion. One commenter suggested a 32-km (20-mi) radius around Barrow, and others suggested adding a buffer of a 1.6-km (1-mi) radius around all coastal villages and organized municipalities to account for the human disturbance. Specific communities mentioned in the comments include Barrow, Kivalina, Kotzebue, Nome, Wainwright, and Kaktovik.

*Our response:* Currently there is no overlap with the critical habitat designation and the communities west of Barrow. Consequently, there will be no conflicts with town expansion in these areas. Only the North Slope communities of Barrow and Kaktovik overlap with the proposed critical habitat designation, and these communities have been excluded from the final designation (see Exclusions under Section 4(b)(2) of the Act below). In addition, the legal boundaries that define Barrow are larger than the currently developed areas and thus provide for town expansion. New construction on private land outside the town boundaries would only require section 7 consultation with the Service if Federal funding or a Federal permit was required. However, consultation does not mean that new construction could not occur, but would mean that impacts to polar bear critical habitat would need to be considered. In addition, as explained in the Criteria Used to Identify Critical Habitat section below, existing manmade structures are not included in the critical habitat designation.

*Comment 36:* The Service received a few comments that suggested the industrial area of Deadhorse be excluded from critical habitat.

*Our response:* Deadhorse is treated differently than the Alaska Native communities with respect to exclusion for the following reasons: (1) Very few permanent residents live in Deadhorse and very few if any families live there; Deadhorse is primarily a staging area for materials and personnel working in activities associated with the oil and gas operations; (2) Deadhorse is not an incorporated city and thus has no legally delineated boundaries; (3) movements of personnel and equipment

are highly restricted, unlike residents in the villages; (4) polar bears are hazed from actively used areas but are allowed to exist in the areas between the widely dispersed network of roads, pipelines, well pads, and buildings; and (5) there is very little polar bear critical habitat in the vicinity of Deadhorse and the airport. Therefore, the Secretary has decided not to exercise his discretion to exclude Deadhorse from the polar bear critical habitat designation. However, removal of existing manmade structures from the designation will effectively remove most of the core human activity area of Deadhorse from the critical habitat designation.

*Comment 37:* We received comments that recommended the exclusion of all Native-owned lands (including those owned by Native and Village corporations, local governments, and Native allotments) from the critical habitat designation. The commenters also noted that the corporation lands are for the perpetual benefit of its shareholders.

*Our response:* The Secretary has exerted his discretion to exclude the town site areas of Barrow and Kaktovik (see Exclusions under Section 4(b)(2) of the Act below). In addition, any existing manmade physical structures, including those owned by the Native communities, are not included in the designation. However, with respect to the large areas of undeveloped land owned by the Native and Village corporations, because of the uncertainty of future development, we have determined that future activities are speculative at this time. Any future activities that may affect polar bears, and, if there is a Federal nexus, polar bear habitat, would be addressed through section 7 of the Act. In addition there are educational benefits of informing land managers of areas that are essential to polar bears for any projects that involved a Federal nexus. Therefore, the Secretary has decided not to exercise his discretion to exclude Native Village and Corporation lands that are not currently developed.

*Comment 38:* While there is currently no large-scale coal mining operations other than the Red Dog Mine in the proposed critical habitat, there is the potential for future operations in both northern and western Alaska. Several commenters stated that the economic limitations to potential future coal mining in these areas due to the designation of critical habitat should be justification to remove these areas from the critical habitat.

*Our response:* The designated polar bear critical habitat does not overlap with areas containing the coal deposits on the North Slope or the western coal fields in Alaska. Therefore, these lands are not being considered for exclusion from the designated polar bear critical habitat.

*Comment 39:* The U.S. Air Force (USAF) requested exemption of Department of Defense (DOD) lands from the critical habitat designation under section 4(a)(3)(B)(i) of the Act, specifically, radar sites that overlap with southern Beaufort Sea and the Chukchi-Bering Seas polar bear populations. These sites are: Wainwright Short Range Radar Site (SRRS); Point Barrow Long Range Radar Site (LRRS); Oliktok LRRS; Bullen Point SRRS; Barter Island LRRS; Cape Lisburne; Kotzebue LRRS; Tin City LRRS; Point Lonely (former SRRS); Point Lay (former LRRS); West Nome Tank Farm (former LRRS); and Cape Romanazof (LRRS). The USAF requested the exemption of these radar sites based in part on the critical role these sites play as part of the Alaska Radar System in support of the Alaska North American Aerospace Defense Command (NORAD) Region and Homeland Defense to detect, track, report, and respond to potentially hostile aircraft approaching our borders and entering our airspace.

*Our response:* There are two sections of the Act that provide mechanisms for evaluating DOD lands in relation to critical habitat: section 4(a)(3)(B)(i) and section 4(b)(2). Section 4(a)(3)(B)(i) of the Act states, "The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation." Section 4(b)(2) of the Act allows the Secretary to use his discretion to exclude areas from critical habitat for reasons of national security if the Secretary determines the benefits of such an exclusion exceed the benefits of designating the area as critical habitat. However, this exclusion cannot occur if it will result in the extinction of the species concerned.

The USAF has submitted two integrated natural resource management plans (INRMPs), one for the Inactive and one for the Active Radar Sites prepared under section 101 of the Sikes Act (16 U.S.C. 670a) for review. After careful review of the INRMPs, we find that the plans adequately address measures to protect polar bears and therefore provide a benefit to the species. As a result, the five sites that overlap with the proposed polar bear critical habitat designation, Point Lonely (former SRRS), Point Barrow LRRS, Oliktok LRRS, Bullen Point LRRS, and Barter Island LRRS, are exempt from the polar bear critical habitat designation pursuant to section 4(a)(3) of the Act (see Exemptions below).

*Comment 40:* The Bureau of Land Management (BLM) has requested the Secretary to exercise his authority under section 4(b)(2) of the Act to exclude the area within the National Petroleum Reserve—Alaska (NPR–A) based on increased agency costs without coincident increase to polar bear conservation or recovery.

*Our response:* The BLM's Alaska State Office proposes to lease tracts for oil and gas exploration and development during Fall of 2010. The BLM prepared two integrated activity plans (IAPs), one for the northeast planning area and the other for the northwest planning area of NPR–A. The NPR–A area overlaps with all three designated units of critical habitat for polar bears in Alaska. Each IAP has stipulations and required operating procedures (ROPs) that afford some protection to coastal areas, rivers, and barrier islands that contain the majority of the PCEs for polar bear critical habitat. Because the exact extent, location, and timing of developments, and their resulting effects, are not known, we are unable to determine if the stipulations and ROPs are adequate. In addition, there is an exception clause in both IAPs for the stipulations and ROPs. The exception clause states that exemptions could be granted if: (1) The alternative proposed by the lessee or permittee fully satisfies the objectives of the Lease Stipulation or ROP; (2) compliance with the stipulation or ROP would not be technically feasible; (3) compliance with the stipulation or ROP would be economically prohibitive; or (4) the proposed alternative is environmentally preferable. Because of the lack of specificity, and the exceptions, in the IAPs, the Secretary has decided not to exercise his discretion to exclude from critical habitat the areas within the current and proposed lease sales that are not currently developed. However, as discussed throughout this final rule, existing manmade structures are exempt from the final critical habitat designation because they do not contain features essential to polar bears, nor are they themselves essential to the species.

*Comment 41:* The State of Alaska and other commenters suggested that areas where polar bears occur infrequently should be excluded from the designated

critical habitat. Areas that have been suggested for exclusion are Norton Sound, Barrier Islands from Norton Sound to Hooper Bay, interior of St. Lawrence Island, and the Seward Peninsula.

*Our response:* Telemetry data and periodic polar bear sightings by coastal residents indicate that polar bears occur in all of these areas. For example, during the period from July to September 2001, 50 bears were stranded on St Lawrence Island during the summer and most were legally killed by local subsistence hunters. The fact that polar bears may use these areas infrequently does not mean that these areas do not contain the features essential to the conservation of polar bears. To the contrary, in the recent decision of *Arizona Cattle Grower's Assoc.* v. *Salazar,* 2009 U.S. App. Lexis 29107 (June 4, 2010), the Ninth Circuit affirmed that the Service has the authority to designate as "occupied" areas all areas used by a listed species with sufficient regularity that members of the species are likely to be present during any reasonable span of time. Therefore, the Secretary has decided not to exercise his discretion to exclude from critical habitat the areas where polar bears occur infrequently.

*Comment 42:* We received comments that the denning habitat was overly broad and should be limited to those areas that specifically provide suitable den site habitat. It was suggested that denning habitat be limited to just those areas that have the physical and biological features for den sites as indicated by USGS. Another comment questioned the need to designate critical habitat for denning 32 km (20 mi) inland east of the Canning River when 67 percent of denning occurred within 8 km (5 mi) of the coastline and 83 percent occurred within 16 km (10 mi) of the coast.

*Our response:* As indicated in the October 29, 2009, proposed rule, the denning habitat consists of more than just the physical characteristics that allow for construction of a den site. Polar bears need the ability to access potential den sites and areas to acclimate the cubs after den emergence in the spring. Pregnant females often inspect and partially excavate several den sites prior to choosing the one that they will ultimately use. If a female polar bear abandons her den due to disturbance prior to the cubs being old enough to survive outside the den, her cubs will die. Therefore, females often seek secluded denning areas to give birth and raise their cubs. There is considerable denning habitat on the North Slope but polar bears do not use this randomly. Polar bears prefer coastal bluffs and river banks within close proximity to the sea ice for den sites. Choosing den sites close to the coast allows females to access feeding areas before and after denning and reduces the energy expenditure and risks of predation on cubs by wolves (Ramsay and Stirling 1984, pp. 693–694) during long walks from den sites located further inland.

There are several factors that support the designation of the area in which 95 percent of denning occurs: (1) There is uncertainty associated with the fine-scale mapping of the potential den site areas based on the physical characteristics of the topography on the North Slope. For instance, verification of known den sites within the mapped denning habitat was more accurate for bluff habitat than in relatively flat tundra areas with low relief; (2) the terrestrial core denning area was based on the locations of a limited number of radio-collared female polar bears. In any given year approximately 20–40 dens are located via telemetry, but that is a small subset of the total number of females (approximately 240) thought to be denning in any one year from the southern Beaufort Sea population; (3) only a portion of the potential denning habitat on the North Slope has been mapped; and (4) additional benefits are provided through section 7 consultation on polar bear habitat as well as polar bears. Rather than designate the entire known denning habitat on the North Slope, we believe that the area encompassing 95 percent core denning areas as identified in this final rule best describes and contains the physical and biological features for polar bear denning that are essential to the conservation of the species.

*Comment 43:* Several commenters, including the State of Alaska, noted that not all barrier islands have suitable topography for denning or other essential polar bear habitat features or activities. They suggested that the Service evaluate the relative conservation value of each barrier island and include only those that are important.

*Our response:* We recognize that not all barrier islands have suitable denning habitat. However, barrier island habitat is not used just for denning; it is also important for other essential life history functions such as refuge from human disturbance and for movements along the coast to access dens and optimal feeding areas. As a consequence, we have determined that barrier islands are a physical feature essential to the conservation of the polar bear.

*Comments on the Effects of the Proposed Critical Habitat Designation*

*Comment 44:* Several commenters, including the State of Alaska, expressed concern that the designation of critical habitat will interfere with the subsistence harvest and the current practice of moving subsistence-harvested whales away from communities and hunting camps to reduce adverse bear-human interactions.

*Our response:* The designation of critical habitat for polar bears in Alaska will not affect subsistence harvest of polar bears or the movement of whale carcasses away from communities for safety reasons. Section 10(e) of the Act states, "Except as provided in paragraph (4) of this subsection the provisions of this Act shall not apply with respect to the taking of any endangered species or threatened species, or the importation of any such species taken pursuant to this section, by—(A) any * * * Alaskan Native who resides in Alaska * * * if such taking is primarily for subsistence purposes." Subsistence harvest is specifically exempt under the Act and the MMPA and, as such, will not be affected by the designation of critical habitat. The practice of moving whale carcasses taken for subsistence purposes away from the villages is in the best interest of both polar bears and humans. Further, there is no Federal nexus to these activities as described, and thus a section 7 consultation would not be required.

*Comment 45:* We received comments that the designation of critical habitat will adversely affect the Service's working relationship with the Alaska Native community, industry, and the State of Alaska. These comments also expressed concern about the effect from multiple layers of critical habitat designations (for different species) on the local people.

*Our response:* The Marine Mammals Management Office of the Service has worked closely with Alaska Native communities for many years through the Alaska Nanuuq Commission, North Slope Borough, and local communities to discuss management and conservation issues concerning polar bears and subsistence uses. The Native community has been instrumental in assisting us with scientific studies; contributing to the success of the Marking, Tagging and Reporting Program; managing the southern Beaufort Sea population through the Inuvialuit/Inupiat Agreement of 1988; and more recently in the formation and implementation of the U.S./Russia Bilateral Agreement for the Conservation of the Alaska/Chukotka

Polar Bear Population. The working relationships that we have developed over the past 20 plus years have often provided the framework for other Service field offices and other agencies wishing to work in Alaska Native communities.

The Service has also been working with the oil and gas industry for more than 20 years to minimize bear-human interactions through the Beaufort Sea and the Chukchi Sea Incidental Take Program.

The effects of a critical habitat designation are evaluated for each species and each designation on a case-by-case basis because of the conservation needs of different species, and geographic regions are subject to different baseline regulations and conservation requirements. As such, following compliance with Executive Order 12866 and the Regulatory Flexibility Act, we are to evaluate the effects of the individual designation alone to determine the incremental effect of that designation itself, not the cumulative effects of the designation in question and those already in place. However, the establishment of critical habitat does not, on its own, prohibit development of any kind. It simply ensures consultation with Federal action agencies on actions that may affect designated critical habitat if a Federal nexus in the project exists. Therefore, we do not expect that the designation of the critical habitat for polar bears in Alaska, as mandated by the Act, will jeopardize the working relationships that we have developed over the past 20 years.

*Comments on Special Management Considerations*

*Comment 46:* Several commenters recommended that the Service develop standards and guidelines for monitoring activities that potentially affect critical habitat, develop coordinated strategies to address the negative effects of climate change, and develop policies to assist polar bears responding to the predicted loss of sea-ice habitat.

Many of the comments supporting our polar bear critical habitat suggested that actions should not only be taken to reduce greenhouse gas emissions, but also to develop alternate sources of energy.

*Our response:* The Service is moving aggressively to address the challenges of climate change. We have drafted a Strategic Plan for Climate Change that focuses on adaptation, mitigation, and engagement with partners to seek solutions to the challenges to fish and wildlife. Created in concert with the strategic plan is a 5-year action plan that outlines tasks that the Service will pursue to address climate change. One way the Service is already taking action is through the creation of Landscape Conservation Cooperatives (LCCs). Polar bear habitat falls within the Arctic LCC. The LCCs are management-science partnerships that inform integrated resource-management actions addressing climate change and other stressors within and across landscapes. They will link science and conservation delivery. The LCCs are true cooperatives, formed and directed by land, water, wildlife, and cultural resource managers, and interested public and private organizations.

In concert with the LCCs are the establishment of Climate Science Centers (CSCs) that will deliver basic climate-change-impact science to LCCs within their respective regions, including physical and biological research, ecological forecasting, and multi-scale modeling. These CSCs will prioritize their delivery of fundamental science, data, and decision-support activities to meet the needs of the LCCs. This includes working with the LCCs to provide climate-change-impact information on natural and cultural resources and to develop adaptive management and other decision-support tools for managers. The Alaska Climate Science Center, located at the University of Alaska, Anchorage, was established in March 2010, and is one of the first in the nation. The Service is on the forefront in addressing the challenges of climate change and will be relying on the Arctic LCC and the Alaska Climate Science Center to inform the best conservation practices for polar bears in the future.

In response to the suggestion that the Service develop standards and guidelines for monitoring activities that potentially affect critical habitat, the Service has identified in general, and to the extent practicable, those actions that may require consultation under the Act. It is not possible at this time to forecast what specific activities will occur in, or the potential impact of these activities to, the critical habitat. The mechanism for evaluating effects of proposed actions is through section 7 consultation under the Act.

*Comment 47:* One commenter requested that the Service analyze whether special management measures or protections are needed, and was concerned that special management considerations and protections that may result from section 7 of the Act were omitted from the proposed rule.

*Our response:* The special management considerations and protections in the proposed rule were included for example purposes. The specific types of management actions, such as reasonable and prudent measures to minimize incidental take, will be determined on a case-by-case basis during the section 7 process. We have presented some potential special management measures or protections below in this final rule (see the Special Management Considerations or Protections section of this rule). The Service will continue to evaluate whether additional special management considerations and protections may be needed in the future.

*Comment 48:* The Service received numerous comments that the effects of oil and gas development throughout the Arctic are underestimated, and when combined with the loss of sea-ice habitat, the importance of terrestrial and nearshore habitat for resting and denning will increase. Commenters further suggested that there is a need for a moratorium on oil and gas activities until a comprehensive plan based on sound science and traditional knowledge, which addresses the full potential impact of industrial activities, is in place. They suggest these actions would minimize the potential negative impacts of oil and gas development on polar bear critical habitat. As an example, the commenters cited the decision by the North Pacific Fishery Management Council to prohibit fishing in the Arctic until more science can be gathered.

*Our response:* Although these comments are not directly applicable to the designation of critical habitat, the Service recognizes the importance of obtaining and using the best available science to make decisions regarding oil and gas development relative to management of polar bears. Under section 7(a)(2) of the Act, Federal agencies must consult with the Service on any action with a Federal nexus (an action authorized, funded, or carried out by any Federal agency) that may affect critical habitat, and must avoid destroying or adversely modifying critical habitat. The prohibition on adverse modification is designed to ensure that the conservation role and function of those areas that contain the physical and biological features essential to the conservation of the species, or of unoccupied areas that are essential for the conservation of the species, are not appreciably reduced. These actions may further be evaluated under the standards of the MMPA.

*Comment 49:* The Service received recommendations to establish guidelines for determining the types, proximity, level, and timing of activities and impacts that may adversely modify

critical habitat. They suggested that the proposed critical habitat determination takes an initial step in this direction by generally identifying activities that may affect critical habitat under three categories of actions: (1) Those that would reduce the availability or accessibility of polar bear prey species, (2) those that would directly impact a PCE, or (3) those that would render critical habitat areas unsuitable for use by polar bears. However, they suggest the very general discussion in the proposed designation is neither sufficient to assure the conservation of polar bears, nor helpful to those engaged in activities within or in proximity to designated critical habitat.

*Our response:* The Service has identified in general, and to the extent practicable, those actions that may require consultation under the Act (see Application of the "Adverse Modification" Standard section of this rule). It is not possible at this time to forecast what specific activities will occur and the potential impact of these activities to the critical habitat. The mechanism for evaluating effects of proposed actions is through section 7 consultation under the Act.

*Comments on Regulatory Mechanisms*

*Comment 50:* We received numerous comments that the MMPA; Clean Water Act (CWA) (33 U.S.C. 1271 *et seq.*); Clean Air Act (CAA) (42 U.S.C. 7401 *et seq.*); Outer Continental Shelf Lands Act (OCSLA) (43 U.S.C. 1331 *et seq.*); Coastal Zone Management Act (CZMA) (16 U.S.C. 1451 *et seq.*); Alaska Coast Management Plan (ACMP); Oil Pollution Act of 1990 (33 U.S.C. 2701 *et seq.*); Federal and State regulations; and North Slope Borough (NSB) statutes, regulations, and ordinances, (*see* EIS Lease Sale 193 for larger list) adequately address management of sea-ice habitat, and that, therefore, there is no need for the critical habitat designation.

*Our response:* The Service has reviewed the existing regulatory mechanisms at the international, national, State, and local level and has determined that there are no known regulatory mechanisms that are directly and effectively addressing reductions in the sea ice at this time. For example, regulations under the MMPA effectively deal with protection for polar bears but do not specifically protect polar bear habitat such as sea ice. Moreover, as affirmed by various courts (*e.g., Conservation Council for Hawaii* v. *Babbitt,* 24 F. Supp.2d 1074, 1078 (D. HI. 1998)), the Act imposes an independent statutory duty on the Service to designate critical habitat, regardless of how that habitat is managed under other statutory or regulatory regimes.

Additional discussion concerning the adequacy of regulatory mechanisms can be found in the final listing rule published in the **Federal Register** on May 15, 2008 (73 FR 28212).

*Comment 51:* The State of Alaska commented that some of the areas proposed for designation as critical habitat are currently managed effectively through land-use planning, permitting, and mitigation measures by the State, and thus do not meet the need of the second part of the definition of critical habitat, as they are already protected. They further commented that these areas, therefore, do not require additional special management considerations or protection. Another comment indicated the State regulatory mechanisms, specifically the CZMA and the Alaska Department of Natural Resources (ADNR) Area Plans, were adequate.

*Our response:* The definition of critical habitat in section 3(5)(A) of the Act specifies that we are to designate specific areas within the geographical area occupied by the species at the time it is listed on which are found those physical or biological features that are essential to the conservation of the species and which may require special management considerations or protection. The Act does not specify that the essential features require special management consideration or protections. In *Center for Biological Diversity et al.* v. *Norton* 240 F.Supp.2d 1090 (D. Ariz. 2003) the court determined that to exclude areas where adequate management or protections are already in place is arbitrary, and that the existence of other habitat protections does not relieve the Service from designating critical habitat. According to the Court, what is determinative is whether or not the habitat is essential to the conservation of the species and special management of that habitat is possibly necessary.

We acknowledge the efforts by the State to provide management protections that benefit listed species and their habitat in some of the areas proposed for critical habitat designation for polar bears. However, these areas meet the definition of critical habitat under the Act. Whether the habitat requires additional special management because some protections may already exist under State of Alaska law does not determine whether that habitat meets the definition of "critical habitat" under the Act. The protections provided under State law provide additional support to the Service's assertion that special management considerations or protections may be necessary (*see Center for Biological Diversity et al.* v. *Norton* 240 F.Supp.2d 1090 (D.Ariz. 2003)).

The CZMA was created to "preserve, protect, develop, and where possible restore or enhance the resources of the Nation's coastal zone." The CZMA provides for the submission of a State program subject to Federal approval. Under the CZMA in Alaska, there are four District Coastal Management Plans that apply to polar bears in northern and western Alaska (The North Slope Borough, Northwest Arctic Borough, City of Nome, and Bering Straits CRSA). Of these four Alaska Coastal Management Programs, only the City of Nome has an active plan in effect. The plans are not considered to be effective at this time for protecting polar bear habitat.

Under the Submerged Lands Act, the State of Alaska has authority over the submerged lands and resources therein, up to, but not above, the mean high tide line, and from the coast, extending seaward for 5.6 nautical-kilometers (3 nautical-miles (nm)). The ADNR Beaufort Sea Area-wide 10-year Best Interest Finding for sea ice and coastal waters within 4.8 km (3 mi) seems to be focused on the leasing phase and does not provide any site-specific analysis of the impacts of oil and gas exploration, development, and production and thus provides no meaningful protection to polar bears and their habitat. Therefore, ADNR Area Plans do not provide protections that are specifically designed to address degradation, loss, or disturbance to polar bear habitat.

In addition, polar bears and their habitat are not included in the State's Endangered Species Act and as such receive no protection under this statute. Thus, the designation of critical habitat under the Act provides for protection of critical habitat in the absence of adequate protection of habitat under State of Alaska statutes (State Endangered Species Act, ADNR Area Plans, and the CZMA).

Therefore, the areas managed by the State of Alaska qualify as critical habitat under the Act, and the existing management practices for these areas are not a substitute for Federal critical habitat designation. Because these areas contain the features essential to polar bear conservation, they meet the definition of critical habitat and we are required by statue to designate them as critical habitat.

*Comments on Procedural and Legal Compliance—Process of Designating Critical Habitat*

*Comment 52:* One commenter stated that: (1) The Alaska quota for parks, preserves, monuments, and wild and scenic rivers has been met under Alaska National Interest Lands Conservation Act (ANILCA) (16 U.S.C. 3101 *et seq.*); (2) section 1326(a) specifically states that administrative closures, including the Antiquities Act, of more than 2,023 hectares (ha) (5,000 acres (ac)) can no longer be used in Alaska and that if a larger area is administratively withdrawn: "Such withdrawal shall terminate unless Congress passes a joint resolution of approval within one year after the notice of such withdrawal has been submitted to Congress"; and (3) that under section 1326(b), "No further studies of Federal lands in the State of Alaska for the single purpose of considering the establishment of a conservation system unit, national recreation area, national conservation areas, or for related or similar purposes shall be conducted unless authorized by this Act or further Act of Congress."

*Our response:* The designation of critical habitat for polar bears does not increase the amount of land under Federal jurisdiction and does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area, nor does it allow the government or public to access private lands. Therefore, the designation of critical habitat is not in violation of any provision of ANILCA.

*Comment 53:* One commenter noted that portions of the terrestrial denning areas are designated as wilderness under Federal jurisdiction and as such do not need additional protection.

*Our response:* Although areas with wilderness status may afford some protection to endangered and threatened species, the purpose of designating these areas as "wilderness" is "to secure for the American people of present and future generations the benefits of an enduring resource of wilderness." The purpose of designating critical habitat for a particular species is to identify and provide Federal protection for features and areas essential to the conservation of that species, in order to facilitate its conservation. Designation of critical habitat would ensure any Federal actions not restricted in wilderness areas are evaluated under section 7 of the Act, so that if approved, they would not appreciably diminish the functionality of the habitat's essential features.

*Comment 54:* We received several comments that the Service should consult directly with all Native communities potentially affected by the critical habitat designation.

*Our response:* The Service has a history of coordinating with Native communities regarding polar bear management issues, and has conducted extensive outreach relative to this critical habitat designation with Alaska Native organizations and communities within the range of the polar bear in Alaska. Although the court-ordered deadline precluded extensive coordination with the Alaska Native community prior to proposing to designate critical habitat, we presented general information regarding the designation of polar bear critical habitat at the Inuvialuit Game Council and North Slope Borough meeting on April 29, 2009, in Barrow, Alaska, and at the Alaska Nanuuq Commission Meeting on August 25–26, 2009, in Nome, Alaska. Following the release of the proposed critical habitat designation on October 29, 2009 (74 FR 56058), we attempted to notify all potentially affected Native communities and local and regional governments, and we requested comments on the proposed rule. In response to a specific request by the North Slope Borough, we presented information on the polar bear critical habitat on March 1, 2010, in Barrow, Alaska. At that meeting, attendees were given the opportunity to comment on the proposal. As noted earlier, we published a document in the **Federal Register** on May 5, 2010 (75 FR 24545), announcing the proposed designation of critical habitat, the availability of the draft economic analysis, and another 60-day comment period. We also notified the primary communities located within the range of polar bear in Alaska by mail of the opportunity to provide oral or written comments prior to the public hearings in Anchorage on June 15, 2010, and Barrow on June 17, 2010. In addition, the Alaska Nanuuq Commission, which represents Alaska Native interests concerning the conservation and subsistence use of polar bears, assisted in notifying the villages about the proposed critical habitat designation through their village representatives. We responded to all requests for additional information from various organizations and communities before and after submitting the proposed rule to designate critical habitat to the **Federal Register**. The Service remains committed to working with Alaska Natives on this and other issues regarding conservation and subsistence use of polar bears in Alaska.

*Comment 55:* The Service received comments that we should hold public hearings in more than one community in northern and western Alaska.

*Our response:* Section 4(b)(5)(E) of the Act states that the Secretary shall "promptly hold one public hearing on the proposed regulation if any person files a request for such a hearing within 45 days after the date of publication of general notice." The Service offered multiple opportunities for people to participate in public hearings and meetings. We held two public hearings: one in Anchorage, Alaska, on June 15, 2010, and one in Barrow, Alaska, on June 17, 2010. These public hearings were announced in the **Federal Register** on May 5, 2010 (75 FR 24545) and in the Legal Section of the Anchorage Daily News (June 1, 2010). In addition, three display advertisements announcing the hearing on critical habitat were published on June 10, 2010, in the Arctic Sounder (Barrow, AK) and Nome Nugget (Nome, AK), and on June 10 and 14, 2010, in the Anchorage Daily News (Anchorage, AK). We established teleconferencing capabilities for the Barrow, Alaska, public hearing to provide an opportunity to receive oral testimony from outlying communities. The communities of Kotzebue and Little Diomede participated in this public hearing via teleconference. The public hearings were attended by approximately 73 people.

In addition, general information on critical habitat was presented at the Inuvialuit Game Council and North Slope Borough meeting on April 29, 2009, in Barrow, Alaska; the Alaska Nanuuq Commission Meeting in Nome, Alaska, in August 2009; and the North Slope Borough on March 1, 2010, in Barrow, Alaska. We believe these accommodations provided sufficient time and means for the public to comment on the proposed rule.

*Comment 56:* One commenter suggested the Service prepare an environmental impact statement (EIS) as part of National Environment Policy Act (NEPA) (42 U.S.C. 4321 *et seq.*) compliance.

*Our response:* It is our position that, outside the jurisdiction of the Circuit Court of the United States for the Tenth Circuit, we do not need to prepare environmental analyses as defined by NEPA (42 U.S.C. 4321 *et seq.*) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This assertion was upheld by the Circuit Court of the United States for the Ninth Circuit (*Douglas County* v. *Babbitt,* 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)). The opportunity

for public comments, one of the goals of NEPA, is provided for through section 4 rulemaking procedures.

*Comment 57:* A comment provided by the North Slope Borough states that critical habitat designation is subject to consistency determinations under the Coastal Zone Management Act.

*Our response:* Under the regulations implementing the Coastal Zone Management Act, agencies are to examine "reasonably foreseeable direct and indirect effects on any coastal use or resource" when determining whether or not a consistency determination is necessary (15 CFR 930.33(a)(1)). Because the designation of an area as critical habitat does not itself negatively impact the way in which the land is being utilized, nor does such a designation directly affect the coastal zone of Alaska, we conclude that a consistency determination is not required. Consistency determinations will continue to be required for specific Federal activities that use or impact the coastal zone in a reasonably foreseeable manner, such as construction projects, permitting, and other development.

*Comments on the Economic Analysis*

*General Comments on Methodology and Results*

*Comment 58:* Several commenters, including the State of Alaska, asserted that the Service did not adequately document or explain the basis for its assumption in the draft economic analysis (DEA) that the polar bear critical habitat designation is "not expected to result in additional significant conservation measures." The comment further states that the Service did not adequately consider the economic impacts of consultations, project requirements, and modifications that the adverse modification standard imposes.

*Our response:* Section 2.3 of the DEA describes the reasons the Service does not anticipate this critical habitat designation to result in significant additional polar bear conservation requirements above and beyond those currently in place under MMPA and through the species being listed under the Act. Additionally, Appendix C of the DEA includes a memorandum developed by the Service, titled, "Incremental Effects of Critical Habitat Designation for the Polar Bear," describing the Service's reasoning on this issue. In general, conservation measures being implemented for the polar bear and its habitat under the MMPA, along with the conservation resulting from the species' listing status under the Act, are expected to sufficiently avoid potential destruction or adverse modification of critical habitat.

*Comment 59:* One comment contends that the Service-provided assumptions that critical habitat will not change conservation requirements for the polar bear led to the finding in the DEA that there will be no incremental effects of the designation. The comment states that a lack of change in conservation requirements does not mean that the only added costs are administrative costs of consultations. In particular, litigation over critical habitat could lead to added costs.

*Our response:* Changes in conservation requirements following critical habitat designation for the polar bear represent only one of the categories of potential incremental effects considered in the DEA. The DEA recognizes the potential for other types of incremental impacts, such as project delay associated with litigation. Specifically, section 3.2.2 of the DEA focuses on potential "indirect" impacts of the designation, which are defined as the unintended consequences of the regulation. Forecasting specific variables needed to quantify indirect impacts, for example, the outcome of potential litigation and the frequency and timing of any project delays, is considered too speculative for the analysis. Information is therefore provided in the DEA regarding precedence for, and the potential magnitude of, such impacts using hypothetical examples. The potential for the designation to result in additional, indirect costs is highlighted throughout the DEA as the chief source of uncertainty in the analysis.

*Comment 60:* One comment states that the DEA incorrectly concludes that critical habitat designation will require no more mitigation than that required by the listing alone. The comment notes, for example, that additional measures to protect the cactus ferruginous pygmy-owl were required following critical habitat designation. The comment further provides examples of expenses being incurred for conservation of threatened species in the North Slope, including fencing to protect eiders, and utilization of polar bear-resistant dumpsters.

*Our response:* Conservation measures for species and habitats are determined by the Service on a case-by-case basis as different species and geographic regions are subject to different baseline regulations and conservation requirements. The question of whether the baseline regulatory environment sufficiently avoids destruction or adverse modification of critical habitat for the polar bear is independent of the same question for another species, such as the cactus ferruginous pygmy owl. Ongoing polar bear conservation measures, such as the utilization of polar bear-resistant dumpsters, are discussed in the DEA as baseline conservation measures, and are accordingly expected to continue regardless of critical habitat designation.

*Comment 61:* One commenter questioned why costs of compliance with baseline regulations are provided when the DEA acknowledges that they are not relevant to the evaluation of critical habitat.

*Our response:* The DEA does not explicitly quantify total costs of compliance with baseline regulations. The DEA does, however, include a discussion of the regulatory baseline in order to provide context for the incremental analysis. For example, the Service's determination that the regulatory baseline precludes the need for additional polar bear conservation measures following critical habitat designation is a major factor in the economic analysis.

*Comments on Section 7 Consultation Costs*

*Comment 62:* Multiple comments were received that assert that the DEA underestimates the administrative costs of consultation. In particular, these comments suggest that the estimated section 7 administrative costs to third parties are unreasonably low. These comments focus specifically on oil and gas-related consultations and provide a range of incremental costs that oil and gas companies are expected to bear for participating in consultation regarding polar bear critical habitat. One comment states that the Act requires demonstration that adverse modification or destruction of critical habitat would not occur, and that developing a factual record to demonstrate this could be costly. Multiple comments suggest that incremental administrative costs of consultation should include staff time, consultant fees, legal advice, and development of habitat-related studies for large-scale oil and gas projects. One commenter estimated third-party, incremental administrative costs of $10,000 per consultation where another commenter suggested it could be "millions of dollars" per consultation. Multiple comments provided on the DEA agree on an estimated $18,750 to $37,500 per consultation, and two other comments provide estimates within that range.

*Our response:* In response to these comments, third-party, incremental administrative costs of consultation are

revised in the final economic analysis (FEA). Specifically, section 1.3.2 of the FEA revises the estimates of administrative consultation costs for oil and gas projects and plans as follows: (1) To assume third parties do bear some administrative costs during programmatic consultation at the low end (the DEA originally assumed only the Service and Federal agencies participate in programmatic consultation); and (2) to incorporate a high-end estimate of $37,500 for costs to third parties for participation in formal and programmatic consultations. These changes result in the estimate of total incremental administrative costs of consultation being revised from $669,000 in the DEA to a range of $677,000 to $1.21 million in the FEA (present values assuming a 7 percent discount rate).

*Comment 63:* Two comments state that costs to oil and gas companies for biological assessments would be increased following critical habitat designation. One comment suggests this would result in incremental costs of $10,000 to $50,000 per biological assessment or, for large-scale projects, up to $1.5 million. This comment also suggests that, in addition to the increased biological assessment costs, each consultation effort would require a $300,000 study to determine that the primary constituent elements (PCEs) for polar bear critical habitat exist in the project area. Another commenter suggests that critical habitat designation will result in reinitiation of two past biological opinions related to oil and gas operations in order to consider impacts to critical habitat, and that the administrative costs of these reinitiations would result in an additional $156,000 for one biological opinion and $137,500 for another to determine and map the presence of PCEs. The commenter also asserts that oil and gas companies will bear incremental costs when developing biological assessments as designated non-Federal representatives in section 7 consultation. The commenter estimates these efforts will result in an additional $115,600 per biological assessment, and an additional $10,000 to $650,000 (depending on the project area) to document whether the PCEs are present and whether the project will destroy or adversely modify those PCEs.

*Our response:* Exhibit 1–2 of the FEA describes estimated incremental costs for biological assessments of $1,400 per consultation, or $2,800 for a consultation reinitiated to consider critical habitat. The expected level of effort for these studies in the DEA is based on a historical review of past consultations around the country, and is significantly less than the level of effort that these comments anticipate will be required. The Service does not ask that third parties identify or map the distribution of PCEs as part of section 7 consultations. The Service identifies as part of critical habitat designation where the PCEs for polar bear critical habitat exist. It is, therefore, unlikely that there would be a need for third parties to undertake duplicative efforts to map PCEs. The Service has in the past requested polar bear-related studies such as denning surveys; however, these studies are required under the MMPA and would be requested regardless of the designation of critical habitat. Costs of these polar bear studies are considered baseline impacts of polar bear conservation and are not included within the forecast of incremental impacts of critical habitat designation.

*Comment 64:* Two comments note that the estimated administrative consultation costs in the DEA rely on data from Service field offices around the country, and assert that the only consultations appropriate as indicators of future administrative costs are those which involve Alaska and the polar bear.

*Our response:* Exhibit 1–2 of the FEA summarizes the estimated administrative costs of consultation regarding polar bear critical habitat. The analysis does not rely on past consultations on polar bear in Alaska as indicators of future administrative costs because consultations that have occurred considered only the listing of the species (*i.e.,* the jeopardy standard). As critical habitat has not yet been designated for the polar bear in Alaska, historical data does not exist regarding administrative costs to specifically consider critical habitat for the species (*i.e.,* the adverse modification standard). The administrative cost estimates in the DEA therefore rely on the best available information. As described in the notes to Exhibit 1–2, the estimates of costs to the Service were provided by the Fairbanks Fish and Wildlife Field Office and are therefore specific to the polar bear in Alaska. The costs to Federal agencies are average estimates based on review of section 7 consultations around the country. The costs to third parties in the FEA are revised from the DEA estimates to incorporate information provided during public comment on expected administrative costs of consultations specifically regarding polar bear critical habitat.

*Comment 65:* One comment notes that, under the Cooperative Agreement Between United States Department of Interior and Alaska Department of Fish and Game for Conservation of Endangered and Threatened Animals (February 1979), the State of Alaska will participate at some level in all section 7 consultations concerning critical habitat. These costs should also be considered administrative impacts of the designation.

*Our response:* The Service has a record of working collaboratively with the State of Alaska on species and habitat conservation issues. The 1979 Cooperative Agreement with the State provides for the State and the Service to "…exchange biological and other data as necessary to facilitate such determination [of critical habitat] by the Director." As part of the process to designate critical habitat for the polar bear, the Service coordinated with the State to exchange information relevant to our decision-making process. The 1979 Cooperative Agreement does not state or imply that the State of Alaska will participate in all section 7 consultations concerning critical habitat and as such, it would not be appropriate to include administrative costs for these consultations as part of the potential incremental effects of critical habitat designation.

*Comment 66:* One comment states that the DEA underestimates the number of forecast consultations. Specifically, the DEA describes that, for large-scale projects and plans subject to programmatic biological opinions, there would be one large-scale consultation, as opposed to more frequent project-specific consultations. The comment suggests that individual applicants for projects under these plans will still have to undertake individual consultations, albeit on a smaller scale. The comment estimates that such consultations could number in the hundreds over the next 30 years. Another comment suggested that the assumption that not all individual projects covered by a programmatic consultation would require individual consultation could result in the Service not obtaining adequate funding to implement critical habitat.

*Our response:* Section 3.2 of the DEA estimates the number of future consultations on oil and gas activities. Approximately 39 formal and programmatic consultations are forecast over the 30-year timeframe of the analysis. This estimate captures both the programmatic consultations on large-scale plans and regulations, such as regular review of the incidental take regulations under the MMPA (50 CFR part 18), and formal consultations on individual projects that fall under these plans, such as specific pipeline and oil and gas field developments. This

estimate is based on the best available information from existing plans and programs regarding the number of potential future individual projects that will require consultation, and accounts for the major consultation efforts that the Service expects to undertake. While the Service also may consult on some smaller scale projects that fall under these plans, these efforts are anticipated to be relatively minor due to the existence of the programmatic consultations and biological opinions addressing the conservation needs for the species. The analysis does note, however, in section 3.2 that the scope and scale of oil and gas activities in the future is highly uncertain, regardless of the critical habitat designation; thus, estimates of the frequency of future consultation is likewise uncertain. In the case that the number of consultations for future oil and gas activities is greater than that estimated in the DEA, the analysis underestimates total administrative costs associated with the designation. The Service's funding is independent of the estimated frequency of future consultations provided in the DEA.

*Comment 67:* A separate economic analysis on the proposed designation submitted by commenters during the public comment period (see comment 70) asserts that the DEA inappropriately forecasts consultations based on the number of consultations occurring in the previous 2 years. The report states that the assumption that the post-designation consultation rate will be similar to the pre-designation consultation rate is doubtful based on past examples of critical habitat consultation rates.

*Our response:* As discussed in section 3.2 of the DEA, the number of future consultations on oil and gas activities is not based on a historical average rate of consultation on the polar bear, but instead on plans for specific, future developments and regular review of existing conservation programs. Future consultations for construction and development activities reference the consultation history for the polar bear, but also consider specific, planned projects based on communication with stakeholders and comments provided during the public comment periods on the proposed rule to designate critical habitat for the polar bear.

*Comments on Indirect Costs of Critical Habitat Designation*

*Comment 68:* Multiple comments state that the DEA marginalizes the indirect costs of the designation, such as litigation risk, uncertainty, project slippage, and delay. One comment recognizes these are difficult to quantify but asserts that they are real and significant and should be considered quantitatively or, in some cases, qualitatively, in the DEA. Multiple comments state that it is inappropriate for the DEA to dismiss these indirect costs as "too speculative." Many of these comments focus on the potential for project delays. One comment asserts that a one-year delay in construction to the natural gas pipeline project could cost over a billion dollars. Another comment estimates that, given the economic scale of the oil and gas projects, even minor delays could result in costs of hundreds of millions of dollars. ConocoPhillips estimates that a 2-year delay in its western expansion plans at Alpine would result in erosion of project value of between 9 and 23 percent. The comment further states that delays would also have ripple effects in the region, as delays in one project can result in similar delays at other projects. One comment states that each year of delays for construction projects on the North Slope would result in an additional 10 percent increase in construction costs.

In addition to project delay concerns, one comment asserts that the designation would chill the investment climate for economic activity in the Arctic. Multiple comments suggest critical habitat designation for the polar bear will stop new exploration and development and put oil and gas activities at a standstill. One comment estimates stopping oil and gas activity would mean an impact of hundreds of billions of dollars.

On the other hand, one comment questions why indirect costs are included if the DEA itself states that indirect costs should not be treated as part of the incremental economic impact of critical habitat because the estimates are too speculative.

*Our response:* As noted above, section 3.2.2 of the DEA focuses on potential indirect impacts of the designation. The DEA describes that indirect impacts may result from litigation surrounding critical habitat delaying lease sales or projects, or industry avoiding critical habitat due to regulatory uncertainty or stigma concerns. The DEA does not dismiss the potential for such indirect impacts, but recognizes that significant limitations exist with respect to a reliable calculation of the indirect impacts of critical habitat designation over the next 30 years.

As noted throughout the report, while the DEA highlights one potential scenario of future oil and gas development on the North Slope, this forecast of the scope and scale of the activity itself is subject to considerable uncertainty. In order to monetize indirect impacts, such as project delays, on these activities, additional assumptions would be required regarding: (1) *Which future projects* may experience delays over the next 30 years; (2) the *specific length of delay* that is attributable to the critical habitat designation (as opposed to delay resulting from the listing of the polar bear or other species, habitat, or broader environmental considerations); and (3) the *potential outcome of any litigation* regarding critical habitat.

Absent this information, the DEA provides examples of the potential magnitude and geographic distribution of indirect impacts using hypothetical examples of the costs of delay to representative projects on the North Slope (Exhibit 3–4), as well as information provided by stakeholders regarding expected costs of delay to their operations. Section 3.2.2 of the FEA additionally incorporates the examples of impacts of project delays provided in comments on the DEA. The Service does not consider only the monetized impacts reported in the DEA, but is also required to consider this qualitative discussion of potential impacts, and the accompanying quantitative examples.

*Comment 69:* Multiple comments state that the Service will most likely be sued over critical habitat, and that critical habitat will add an additional argument to existing lawsuits regarding proposed projects in these areas. For lawsuits in response to the designation, multiple comments assert that the entire cost of litigation in response to the critical habitat designation is attributable to the designation. Two comments state that costs of litigating over critical habitat designation as a whole can be based on current costs of litigation over the polar bear listing: $1 million for a single party, and up to $4 million for the entire cost of litigation, including the use of public resources. These comments additionally estimate that the incremental cost of responding to critical habitat issues as part of broader litigation on oil and gas projects would be $50,000 per project. Another comment estimates that the additional costs of critical habitat litigation regarding its proposed Alaska natural gas pipeline project would be at least $50,000, or up to $300,000 including costs to all parties. A comment from the State estimates that fees for a single party in particular litigation concerning the Act may be as high as $310,973 to $1,110,344. The comment further states that total litigation costs may be 2.5 to

3.5 times as high as this to include impacts to all parties.

*Our response:* The Service does not consider the costs of litigation surrounding the critical habitat rule itself when considering the economic impacts of the rule. The DEA does, however, discuss the potential for critical habitat to result in or add to litigation regarding specific projects. For example, section 3.2.2 of the DEA acknowledges the potential for critical habitat for the polar bear to result in litigation. Litigation concerning the listing of the polar bear, and multiple other environmental and industry-related issues, is ongoing in the North Slope of Alaska. The extent to which litigation specifically regarding critical habitat may add to the costs of this ongoing litigation is uncertain. While critical habitat designation may stimulate additional legal actions, data do not exist to reliably estimate impacts. That is, estimating the number, scope, and timing of potential legal challenges would require significant speculation. The DEA does describe, however, the potential for litigation surrounding critical habitat designation to result in delays to oil and gas lease sales and projects, and identifies potential impacts of such delays.

*Comment 70:* The State of Alaska and Arctic Slope Regional Corporation contracted an independent economic analysis of the proposed critical habitat designation. The analysis asserts that it is possible to quantify the indirect impacts of the designation, and that the DEA should incorporate this information. As an example, the analysis estimates the impacts of a delay in oil and gas development attributable to critical habitat for a hypothetical oil field. The analysis estimates that impacts may range from $202.8 million for a 1-year delay to $2.6 billion for a 5-year delay, depending on field size and production run of the oil field. These costs stem from additional resources required to complete the project due to delay, including litigation and inflation during the delay period, and reduced present value of the stream of benefits from the project. In addition to delay costs, the report estimates potential royalty losses associated with the delay, and regional economic impacts of a 1 percent, 5 percent, and 10 percent reduction in production from a hypothetical oil field. A 1 percent reduction in production, for example, reduces regional (North Slope Borough) economic output by $75.8 million per year, with 46 jobs lost. On a State level, the analysis estimates economic output is reduced by $98.8 million per year, with 214 jobs lost. Regarding delays to capital development projects, the report estimates regional economic impacts of $49.3 million in lost output and 199 lost jobs, or Statewide impacts of $81 million in lost output and 473 lost jobs.

*Our response:* Information provided in this comment and the accompanying analysis has been added to section 3.2.2 of the FEA (*see* Exhibit 3–5). This comment asserts that indirect impacts of critical habitat designation can be quantified and that the DEA fails to do this. To demonstrate this, however, the commenter provides examples of impacts to hypothetical projects using a series of assumptions regarding potential lengths of delay, production volumes, and production timing. In fact, this is the same type of analysis undertaken in section 3.2.2 of the DEA. The example provided in the comment estimates impacts of $202.8 million for a 1-year delay to a hypothetical, representative North Slope oil field development. The DEA likewise provides the example of a $200 million impact associated with a legal injunction delaying Shell's drilling program in the Beaufort Sea. In addition, Exhibit 3–4 of the DEA describes impacts to a hypothetical, representative oil field development (a smaller field than that described in the comment) of various impact scenarios (*e.g.,* assumed 1 percent or 4.75 percent increases in production costs, and assumed 1- or 2-year production delays after 4 years of production). Both the DEA and this comment provide information to the Service regarding the order of magnitude of potential project delays using examples that rely on layered assumptions. However, the actual number of projects that may experience delay due to critical habitat designation for the polar bear, and the specific length of that delay, remain uncertain.

The FEA does not include a regional economic impact analysis of reduced oil and gas activity due to the uncertainty in the project delay and production impact assumptions. Section 3.4 does, however, estimate total potential future oil and gas activity across the region. Specifically, section 3.4.3 describes the gross value of the mean resource estimates, including information on potential revenue to the State of Alaska and Federal government for leasing, taxes, and royalties. Exhibit 3–24 provides information on potential future oil and gas production and direct employment in the proposed critical habitat region. This information is included to provide the Service a sense of the value of the resources at risk.

*Comment 71:* One comment asserts that there is a real possibility that a number of oil and gas projects, particularly associated with leasing in the Chukchi and Beaufort Seas, will be foreclosed due to critical habitat. One comment states that the commenter is not aware of oil and gas leases in Alaska, or elsewhere on the Outer Continental Shelf (OCS), which have been authorized with existing critical habitats. The comment further states that the Minerals Management Service (MMS), now Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE), has twice deleted, or contemplated deletion of, areas within critical habitat from a proposed lease sale. The comment therefore argues it is a possibility that authorizing additional leases in polar bear critical habitat may be politically unpalatable in the future.

*Our response:* The BOEMRE has not indicated that it would delete critical habitat areas from future lease sales. The DEA does note, however, that regulatory uncertainty or stigma concerns may affect investment on oil and gas projects in the critical habitat area.

*Comment 72:* According to multiple comments, the increased cost of operating in polar bear habitat effectively places a risk premium on all existing and planned operations in critical habitat, and these increased risks of procedural or administrative project delay and litigation impose immediate costs on the leaseholder. The commenters state that this risk and uncertainty warrants discussion in the DEA.

*Our response:* Section 3.2.2 of the DEA discusses this issue, noting that uncertainty regarding the potential effects of critical habitat on projects may place a risk premium on project costs. The effect of this risk premium is to reduce the expected profitability of potential projects. Potential economic impacts of this effect are further explored in the section of the DEA titled, "Project Economics under Risk and Uncertainty." The extent to which specific projects across the critical habitat area may experience this effect, however, is uncertain.

*Comment 73:* Two commenters suggested that a project being proposed in designated critical habitat on existing oil and gas leases will trigger additional litigation regarding NEPA compliance issues, potentially requiring a new environmental impact statement (EIS), instead of an environmental assessment (EA), and causing project delays. The commenters estimated that the costs of producing an EIS are $4 million to $12 million greater than the costs of producing an EA.

*Our response:* Section 3.2.2 of the DEA focuses on potential "indirect" impacts of the designation, which are defined as the unintended consequences of the regulation. Forecasting specific variables needed to quantify indirect impacts, for example, the outcome of potential litigation, is considered too speculative for the analysis. Information is therefore provided in the DEA regarding precedence for, and the potential magnitude of, such impacts using hypothetical examples. The potential for the designation to result in additional, indirect costs is highlighted throughout the DEA as the chief source of uncertainty in the analysis. We agree that the designation may, in some circumstances, trigger re-initiation of section 7 consultation and review of NEPA compliance documents. Should this happen, we will work with Federal action agencies through this process.

*Comment 74:* One comment on the DEA recognizes the difficulty of assessing the uncertainty of indirect economic impacts but notes that it is only the magnitude of these impacts that is uncertain.

*Our response:* The DEA notes that the potential for indirect impacts, such as litigation, uncertainty, and project delays, is real. The magnitude of such indirect impacts, however, depends on a number of unknown variables, including: (1) The potential outcome of any litigation; (2) the frequency and timing of any project delays that result specifically from the designation; and (3) the number of projects experiencing litigation or delay. The specific extent to which critical habitat designation for the polar bear may add to litigation and delays is uncertain.

*Comments on the Oil and Gas Analysis*

*Comment 75:* According to one comment, the DEA should attempt to quantify the revenue lost by the State of Alaska resulting from the critical habitat designation. Limitations or effects on oil and gas development will negatively affect the State treasury as the industry is responsible for 90 percent of Alaska's unrestricted revenue. The State estimates, assuming taxes stay at current rates, that the State will lose roughly $14 per barrel of oil left in the ground as a result of the designation.

*Our response:* As noted above, section 3.4.3 of the DEA describes the gross value of estimated oil and gas production in the region, including information on potential revenue to the State of Alaska and Federal government for leasing, taxes, and royalties. Information provided by the State regarding lost revenue per barrel of oil left in the ground has been added to the FEA. How many, if any, barrels of oil may remain undeveloped due to critical habitat is, however, uncertain.

*Comment 76:* One comment corrects the DEA statement that only four Alaska Native Regional Corporations have the potential for economic losses, pointing out that all 12 land-owning Alaska Native Regional Corporations stand to lose revenue as a result of decreased payments to the 7(i) account, developed under the Alaska Native Claims Settlement Act (ANCSA) (943 U.S.C. 1601 *et seq.*). These funds also benefit village corporations and shareholders; thus, lost revenues to the 7(i) account affect the State and national economy.

*Our response:* We agree with this comment and the discussion is corrected in the FEA.

*Comment 77:* One comment states that Exhibit 3–3, which provides an example financial profile of a representative North Slope oil field with an optimal development scenario, is based on an old example (2000) and could be verified with more recent information. A comment on Exhibit 3–4 of the DEA asserts that the analysis contained in the exhibit is misleading as it is based on hypothetical scenarios.

*Our response:* Oil and gas interests contacted during the development of the DEA indicated that these examples were appropriately representative of potential impacts to their operations. Further, these examples were subject to technical review by the economist who authored the original report in which they appeared (Goldsmith 2000). The technical reviewer agreed that their inclusion as examples of the potential for project delays and production cost increases to result in economic impacts is appropriate. The DEA notes, however, that these are hypothetical examples, provided to give a sense of the potential magnitude of impacts. We do not have information to assert that the particular project delay and production cost increase assumptions used in these examples will result from critical habitat designation for the polar bear.

*Comment 78:* One comment suggests that the list of "technological advances" provided in section 3.3.4 of the DEA describing changes in oil and gas activity over time should be removed as it is irrelevant. Specifically, the comment states that Alpine does not provide "a model for roadless development," and there have not yet been any sub-sea completions for production in the Beaufort and Chukchi Seas.

*Our response:* The discussion of technological advances in oil and gas development is relevant to the discussion that oil and gas activities are increasingly able to minimize surface area disruption, thereby minimizing potential effects to polar bear critical habitat.

*Comment 79:* One comment suggests that the Service introduced bias into the DEA by contracting with Northern Economics, a firm that has previously produced economic reports for Shell. The comment asserts that the DEA should not rely on the oil and gas activity forecast produced by Northern Economics for Shell.

*Our response:* Northern Economics' experience forecasting oil and gas activities in the region provides them with expertise regarding this industry. The standard for the DEA is that it be based on the best available information. A chief concern of the DEA is to forecast the potential scope and scale of oil and gas activities in the region. The entities with the most knowledge on this subject are oil and gas companies operating in the region, and the regulating entities (*e.g.,* BOEMRE and the State of Alaska). Northern Economics thus relied on information provided by these entities to inform the DEA.

*Comment 80:* One comment states that the "volumetric analysis" of oil facilities on barrier islands should not be extrapolated across the entire proposed critical habitat area.

*Our response:* We agree that oil and gas production is unlikely to take place across the entirety of proposed critical habitat. It is not possible, however, to identify where yet-to-be-discovered oil and gas resources will be found. Thus, to estimate potential oil and gas production across the North Slope, the DEA relies on the assumption that the potential resources are equally distributed across the landscape. In other words, the estimate of future discoveries in the critical habitat units is a function of the areal extent of the unit.

*Comment 81:* A comment on Exhibit 3–23, which summarizes oil and gas production and employment in the North Slope, suggests that the chart does not add up, does not make sense, and is an inappropriate summary of the data because oil and gas production would not take place across the entirety of proposed critical habitat.

*Our response:* Exhibit 3–23 in the DEA is revised in the FEA (as Exhibit 3–24) for clarification. The table is provided to illustrate the relative importance of proposed critical habitat units in terms of potential production and employment in the oil and gas industry on the North Slope.

*Comments on Other Activities*

*Comment 82:* One comment asserts that the designation will have an economic impact on the North Slope by delaying capital improvement projects, such as sewer upgrades, power plant construction, sea wall construction, fuel pipeline construction, gas field drilling, and gravel mining.

*Our response:* Chapter 4 of the DEA discusses impacts to these activities. As with oil and gas activities, the analysis recognizes the potential for the designation to result in project delays but is unable to monetize specific impacts due to uncertainty regarding the potential frequency and timing of delays.

*Comment 83:* One comment states that the DEA should quantify costs to gravel mining operations, noting that if gravel cannot be secured from a local source for a project, it will need to be imported, increasing project costs. The comment states that the DEA should identify the cost differential between locally sourced materials and imported materials. Another comment describes that, while no large-scale coal mining operations other than the Red Dog Mine currently exist in proposed critical habitat, the potential exists for future operations. Limitations on potential future coal mining should be considered in the DEA. An additional comment questioned how the DEA forecast future mining projects.

*Our response:* Section 4.1.3 of the DEA discusses gravel and coal mining activities within the proposed critical habitat area, which does not include Red Dog Mine as it is located outside the critical habitat designation for polar bear. Future mining activities are forecast based on their historical frequency in the region, as well as communication with stakeholders and public comments provided on the proposed rule. As discussed in section 4.2 of the DEA, gravel mining, coal mining, and other construction and development activities with a Federal nexus may be subject to the following conservation measures for the polar bear due to the listing of the species: (1) Avoid all activities within 1.6 km (1 mi) of known polar bear dens; (2) develop operating procedures to avoid polar bears; and (3) ensure that personnel are trained in bear management activities. These conservation measures would be requested via the MMPA regardless of critical habitat designation and are therefore considered baseline impacts. Critical habitat designation is not expected to result in additional conservation measures for the polar bear with respect to mining activities. In the case that the number of future mines developed in the critical habitat area is greater than that estimated in the DEA, the analysis underestimates the administrative costs of consultation on these projects.

*Comment 84:* According to one comment, the DEA should address potential impacts on the future commercial harvest of seafood in the Arctic. Currently, salmon, crab, halibut, and other species are harvested in State waters. While the current Fisheries Management Plan in the Arctic prohibits commercial harvest of fish resources in the Arctic Management Area, the North Pacific Fisheries Management Council (NPFMC) will reconsider authorizing commercial fishing upon receiving a petition from the public, or a recommendation from National Marine Fisheries Service (NMFS) or the State of Alaska. Thus, potential for some commercial fisheries exists, although for what species is unknown.

*Our response:* In 2009, the NPFMC released its Fishery Management Plan for Fish Resources of the Arctic Management Area, covering all U.S. waters north of the Bering Strait. Management policy for this region is to prohibit all commercial harvest of fish until sufficient information is available to support the sustainable management of a commercial fishery. The future potential for commercial fishing in the Federal waters of the region is therefore highly uncertain. Ongoing harvest of fish and shellfish in State waters has continued following the listing of the polar bear under the Act, and is not expected to change following designation of critical habitat.

*Comments on Benefits*

*Comment 85:* Two comments suggest that the DEA does not sufficiently evaluate or quantify benefits, leading to an imbalance in the analysis. One comment questions the language on page 1–1 of the DEA, "[t]he U.S. Office of Management and Budget's (OMB) guidelines for conducting economic analysis of regulations direct Federal agencies to measure the costs of a regulatory action against a baseline * * *" The comment suggests that the statement should be inclusive of costs and benefits, rather than costs alone. Other comments assert that the only baseline benefits considered are use values (avoided attacks on humans, hunting, polar bear viewing, and improved water quality). The DEA does not discuss use of meta-analysis to quantify existence values of polar bears. The comments additionally state that the DEA includes estimates for speculative indirect costs, such as limits on oil and gas exploration, litigation costs, and reductions in regional economic activity, but does not acknowledge indirect ecosystem service benefits, such as water quality and carbon sequestration. One comment further states that the benefits estimates are not scaled up across the entire critical habitat area as are the costs in the DEA.

*Our response:* We agree with the comment that OMB's guidance to Federal agencies on the development of regulatory analysis (contained in Circular A–4, September 17, 2003) directs agencies to measure the costs and benefits of regulations against a baseline. Chapter 7 of the DEA discusses economic benefits of the critical habitat designation. As described on page 7–1, the Service "* * * does not anticipate that the designation of critical habitat will result in additional conservation requirements for the polar bear. As a result, no incremental conservation measures are anticipated in this analysis and, as such, no incremental economic benefits were forecast from a designation of critical habitat." Chapter 7 does include discussion of baseline benefits of polar bear conservation, however, and includes a specific section on non-use values. This section describes that no studies exist that attempt to estimate existence values for polar bear, but provides information from other potentially relevant studies, such as those regarding existences values for grizzly bears. All categories of benefits discussed in Chapter 7—use values, non-use values, and ecosystem service benefits—are relevant to the baseline and are not expected to be affected by critical habitat designation.

*Comment 86:* One comment states that the DEA downplays the importance of the Arctic National Wildlife Refuge (ANWR) and fails to acknowledge its economic benefits, as well as existing values to polar bear conservation. The comment states that the DEA fails to consider economic losses to tourism that could be avoided, and passive use values, such as were assessed after the Exxon Valdez oil spill.

*Our response:* The purpose of the DEA is to provide the best available information regarding where the benefits of excluding areas from critical habitat may outweigh the benefits of including those areas in critical habitat. Thus, evaluating the benefits of the existence of ANWR is not within the scope of this analysis.

*Comment 87:* One comment asserts that the key issues and conclusions of the report should provide the economic

benefits of subsistence to Alaska Native residents.

*Our response:* As described in section 2.2 of the DEA, subsistence activities are exempt from regulation under the Act and MMPA, unless the activities "materially and negatively" affect the species. In addition, critical habitat designation is not expected to result in additional conservation measures for the polar bear. Subsistence activities are therefore not expected to be affected positively or negatively by the designation of critical habitat for the polar bears.

*Comments on Distributional Analysis*

*Comment 88:* One comment asserts that the DEA does not include distributional effects of the designation on Inupiat Eskimos in the North Slope Borough. Another comment states that the DEA does not take into account the distributional and indirect impact on the Native people of Nuiqsut and the North Slope. An additional comment from the NANA Corporation suggests the DEA does not capture impacts to its economic and development projects. Another comment offers that the effects of the designation on the lifestyle, cultures, and economic activities of the villages within the proposed critical habitat area are not separable from subsistence activities.

*Our response:* Section 2.1 of the DEA provides a socioeconomic profile of the ANCSA Regional Corporation's location within the critical habitat region. As described above, critical habitat designation is not expected to result in additional conservation requirements for the polar bear. Thus, economic and development projects of Native Alaskan communities are not expected to experience further regulation with respect to polar bear conservation following the designation. Further, the DEA describes potential indirect impacts of the designation but does not explicitly quantify such impacts for the reasons described above.

*Other Comments on the DEA*

*Comment 89:* A comment on the DEA questions language on page 1–4, paragraph 9, that describes an example of how a regulation may result in economic efficiency impacts. The example provided notes, "if the set of activities that may take place on a parcel of land are limited as a result of the designation or presence of the species, and thus the market value of the land is reduced, this reduction in value represents one measure of opportunity cost or change in economic efficiency." Specifically, the comment states that, in many cases, the value of land increases if buyers are assured that they will continue to enjoy a scenic view or retain ecosystem services as a result of habitat conservation.

*Our response:* The language from the DEA that is cited in this comment provides one example of how critical habitat designation may result in economic impacts outside of section 7 of the Act. Based on our evaluation in the DEA, we do not expect land value impacts, positive or negative, associated specifically with the designation of critical habitat for polar bears.

*Comment 90:* One comment questions the language describing the treatment of benefits on page 1–15 of the DEA that states it will address benefits qualitatively because of the "lack of resources on the implementing agency's part to conduct new research." The comment asserts that the primary and secondary research should be done as part of the economic analysis.

*Our response:* The DEA is required to be based on the best available information. Primary research, such as design and implementation of original surveys, is outside of the scope of the analysis and this rule making.

*Comment 91:* Two comments state that the DEA should recognize Alaska Native-owned lands as private lands.

*Our response:* The FEA is revised to note that Alaska Native-owned lands should be considered private.

*Comment 92:* One comment states that the section of the DEA describing industry concern should not include opinions from oil companies that did not wish to be cited in the DEA. Similarly, the comment states that the economic analysis should not cite information obtained through interviews with stakeholders, such as the ASRC or BOEMRE, that cannot be verified or for which no factual economic evidence is provided.

*Our response:* The DEA relies on the best available information to quantify impacts of critical habitat designation. Permitting agencies and landowners and land managers frequently possess the most knowledge regarding future projects or plans within the proposed critical habitat area. It would therefore be inappropriate to exclude their input from consideration in the analysis. The DEA was subject to technical review by an economist from the University of Alaska with regional and industry expertise. In addition, a purpose of the public comment period is to solicit feedback regarding the facts and figures presented in the report.

**Summary of the Changes From the 2009 Proposed Rule**

After thorough evaluation of all the comments received on the proposed critical habitat designation and the DEA, we have made the following changes to our proposed designation.

(1) Based on the benefits of maintaining and sustaining conservation partnerships with Native communities, the Secretary has exercised his discretion, as authorized under section 4(b)(2) of the Act, to exclude the town sites for Barrow and Kaktovik, the only formally defined and recognized communities that overlap with the proposed critical habitat. The maps remain essentially unchanged with the exception of the addition of the boundaries for the exclusion of Barrow and Kaktovik. Detailed maps of areas excluded from the critical habitat designation can be found at *http://alaska.fws.gov/fisheries/mmm/polarbear/criticalhabitat.htm.*

(2) All existing manmade structures (on any land ownership) are not included in final critical habitat designation because these areas are not, nor do they contain, the features essential to the conservation of the polar bear.

(3) Radar Sites within the proposed polar bear critical habitat designation, which include one Inactive Radar Site (Point Lonely (former SRRS)) and four Active Radar Sites (Point Barrow LRRS, Oliktok LRRS, Bullen Point LRRS, and Barter Island LRRS), are exempted from this polar bear critical habitat designation under section 4(a)(3) of the Act because they are covered by an INRMP that provides a benefit to the species.

(4) The October 29, 2009, proposed rule (74 FR 56058) indicated a total proposed designation of approximately 519,403 square kilometers ($km^2$) (200,541 square miles ($mi^2$)). However, we incorrectly identified the extent of U.S. territorial waters in that proposal; thus, we reduced the critical habitat area in the final rule to accurately reflect the U.S. boundary for sea-ice critical habitat. With this change and the removal of the USAF Radar Sites and the communities of Barrow and Kaktovik, we are designating a total of approximately 484,734 $km^2$ (187,157 $mi^2$) of critical habitat for the polar bear. We updated the information on the maps and text in this rule to reflect these changes.

(5) We revised the preamble, including two PCEs (sea-ice habitat and denning habitat), to respond to peer review comments and to clarify our intent. We also made corrections to

ensure the consistent use of terms, citations, and grammar.

(6) We updated the references cited in light of new information received in response to the proposed rule.

(7) We finalized our economic analysis based on comments received in response to the proposed rule. The Secretary did not exercise his discretion under section 4(b)(2) of the Act to exclude any areas from the designation on the basis of potential economic impacts.

**Critical Habitat**

Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(a) essential to the conservation of the species and

(b) which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined under section 3 of the Act, means the use of all methods and procedures that are necessary to bring any endangered species or threatened species to the point at which the measures provided under the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management, such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot otherwise be relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the prohibition against Federal agencies carrying out, funding, or authorizing the destruction or adverse modification of critical habitat. Section 7 of the Act requires consultation on Federal actions that may affect critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area, nor does it allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by the landowner. Where the landowner seeks or requests Federal agency funding or authorization that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act would apply. However, even in the event of destruction or an adverse modification finding, the landowner's obligation is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

For inclusion in a critical habitat designation, habitat within the geographical area occupied by the species at the time it was listed must contain the physical and biological features essential to the conservation of the species, and be included only if those features may require special management considerations or protection. Critical habitat designations identify, to the extent known using the best scientific data available, habitat areas supporting the essential physical or biological features that provide essential life cycle needs of the species; that is, areas on which are found the primary constituent elements (PCEs) laid out in the appropriate quantity and spatial arrangement essential to the conservation of the species. Under the Act and regulations at 50 CFR 424.12, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed only when we determine that those areas are essential for the conservation of the species and that designation limited to the species' present range would be inadequate to ensure the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific and commercial data available. Further, our Policy on Information Standards under the Endangered Species Act (published in the **Federal Register** on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106–554; H.R. 5658)), and our associated Information Quality Guidelines provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, or other unpublished materials and expert opinion.

Habitat is often dynamic, and species may move from one area to another over time. Furthermore, we recognize that this critical habitat determination may not include all of the habitat areas that we may later determine, based on scientific data not now available to the Service, are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be required for the conservation or survival of the species.

Areas that support polar bear populations in the United States, but are outside the critical habitat designation, will continue to be subject to conservation actions we implement under section 7(a)(1) of the Act and our other wildlife authorities. They are also subject to the regulatory protections afforded by the section 7(a)(2) jeopardy standard, as determined on the basis of the best available scientific information at the time of the agency action. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may result in jeopardy findings in some cases. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if new information available to these planning efforts calls for a different outcome.

*Physical and Biological Features*

In accordance with section 3(5)(A)(i) and 4(b)(1)(A) of the Act and the regulations at 50 CFR 424.12, in determining which specific geographical areas occupied at the time of listing to designate as critical habitat, we considered areas containing the physical and biological features essential to the conservation of the species which may require special management considerations or protection. We consider the essential physical and biological features to be the PCEs laid out in the appropriate quantity and spatial arrangement essential to the conservation of the species. These include, but are not limited to:

(1) Space for individual and population growth and for normal behavior;

(2) Food, water, air, light, minerals, or other nutritional or physiological requirements;

(3) Cover or shelter;

(4) Sites for breeding, reproduction, or rearing (or development) of offspring; and

(5) Habitats that are protected from disturbance or are representative of the historic, geographical, and ecological distributions of a species.

We derive the specific PCEs for the polar bear in the United States based on its physical and biological needs, as described in the General Overview and Distribution and Habitat sections of the proposed rule to designate critical habitat for the polar bear published in the **Federal Register** on October 29, 2009 (74 FR 56058), and the following information.

*Space for Individual and Population Growth and for Normal Behavior*

Although home ranges can vary greatly among individuals (Garner *et al.* 1990, p. 224; Amstrup *et al.* 2000b, p. 956), the overall home range size for polar bears from the two U.S. populations is relatively large. The movement patterns and home ranges of polar bears are directly related to the seasonal and highly dynamic redistributions of sea ice (Garner *et al.* 1990, p. 224; Garner *et al.* 1994, pp. 112–113; Ferguson *et al.* 2001, pp. 51–52; Mauritzen *et al.* 2001, p. 1,709; Durner *et al.* 2004, pp. 16–20; Durner *et al.* 2006a, pp. 27–30). The movement patterns of the sea ice strongly influence the availability and accessibility of the preferred prey for polar bears, ringed (*Pusa hispida*) and bearded (*Erignathus barbatus*) seals (Stirling *et al.* 1993, p. 21).

Polar bears require sea ice as a platform for hunting and feeding on seals, seasonal and long-distance movements, travel to terrestrial maternal denning areas, resting, and mating (Stirling and Derocher 1993, p. 241). Moore and Huntington (2009, p. S159) classified polar bears as an ice-obligate (ice-restricted) species due to this dependence on sea ice as a platform for resting, breeding, and foraging. A majority of the polar bears in the U.S. populations remain with the sea ice year-round and prefer the annual sea ice located over the continental shelf, and areas near the southern ice edge, for foraging (Laidre *et al.* 2008, p. S105; Durner *et al.* 2009a, p. 39). Open water is not considered an essential feature for polar bears, because life functions such as feeding, reproduction, or resting do not occur in open water. However, open water is a fundamental part of the marine system that supports seal species, the principal prey of polar bears, and seasonally refreezes to form the ice needed by the bears. The interface of open water and sea ice is an important habitat used by polar bears (Stirling *et al.* 1993, pp. 18, 20–22; Stirling 1997, pp. 11, 15, 16; Durner *et al.* 2009a, p. 52). In addition, the extent of open water may play an integral role in the behavior patterns of polar bears because vast areas of open water may limit a bear's ability to access sea ice or land (Monnett and Gleason 2006, p. 5).

The optimal sea-ice habitat for polar bears varies both geographically and temporally, and the use of this area varies seasonally, with the greatest movements occurring during the advance of the sea ice in fall and early winter and retreat of the sea ice during spring and early summer. In winter, polar bears select areas of high sea-ice concentrations along the Alaska coast (Durner *et al.* 2009a, p. 52), with their preferred habitat being sea-ice habitat near the leads (linear openings or cracks in sea ice), polynyas (areas of open sea surrounded by sea ice), flaw zones (larger, semi-permanent polynyas), and shore leads that run parallel to the mainland coast of Alaska. During other times of the year, the marginal sea-ice zone near the sea-ice edge over the continental shelf is the optimal feeding habitat for polar bears because access and availability of ringed seals is greatest in this zone (Durner *et al.* 2004, pp. 18–19).

The dynamic nature of the sea ice in the Beaufort and Chukchi Seas, which changes continually within and among years, makes it difficult to predict the specific time or area where the optimal habitat occurs. However, the Resource Selection Function (RSF) models (Durner *et al.* 2004, pp. 16–19; Durner *et al.* 2006a, pp. 26–29; Durner *et al.* 2009a, p. 39) show that polar bears will select areas of sea-ice habitat with the following characteristics: (1) Sea-ice concentrations approximately 50 percent or greater that are adjacent to open water areas, leads, polynyas, and that are over the shallower, more productive waters over the continental shelf (waters 300 m (984.2 ft) or less in depth); and (2) flaw zones that are over the shallower, more productive waters over the continental shelf (waters 300 m (984.2 ft) or less in depth). In addition, there is evidence of spatial segregation and habitat preferences for different age/sex cohorts and reproductive status of the population, although this is not well studied. For example, in the southern Beaufort Sea, Stirling *et al.* (1993, pp. 20–21) found that following den emergence, females with cubs-of-the-year show a strong preference for stable, shore-fast ice.

Mauritzen *et al.* (2003b, p. 123) suggested that polar bears select habitat with sea-ice concentrations that are optimal for hunting seals, provide safety from ocean storms, and prevent them from becoming separated from the main pack ice. Although polar bears are most often found where sea-ice concentrations exceed 50 percent (Stirling *et al.* 1999, p. 295; Durner *et al.* 2004, pp. 18–19; Durner *et al.* 2006a, p. 24; Durner *et al.* 2009a, p. 51), they will use lower sea-ice concentrations if this is the only ice that is available over the shallower, more productive waters of the continental shelf. This was evident during the late-summer to early-fall open water period in August and September of 2008. During this time, most of the sea ice in the Beaufort Sea had receded beyond the edge of the continental shelf, except for a narrow tongue of sparse ice that extended over shelf waters in the eastern Beaufort Sea. Polar bears were documented using this marginal sea-ice habitat with sea-ice concentrations between 15 percent and 30 percent, presumably in an attempt to remain in the more productive feeding areas over the continental shelf (Steve Amstrup, U.S. Geological Survey, pers. comm.; USFWS, unpublished data).

Reductions in sea ice negatively impact polar bears by increasing the energetic demands of movement in seeking prey, causing seasonal redistribution of substantial portions of polar bear populations into marginal ice or terrestrial habitats with fewer opportunities for feeding, and increasing the susceptibility of bears to other stressors. As the summer sea ice edge retracts to deeper, less productive Polar Basin waters, polar bears will face increasing intraspecific competition for limited food resources, increasing distances to swim from the pack ice to the coast with increased risk of drowning, increasing interaction with humans in terrestrial or nearshore areas with negative consequences, and declining population (Amstrup *et al.* 2008, p. 236).

One of the expected outcomes from climate change in the Arctic is that the distance between the southern edge of the pack ice and coastal denning areas will increase during the summer. This is likely to result in an increase in use of terrestrial areas during the summer and early fall (Schliebe *et al.* 2008, p. 2). Should the distance become too great, it could reduce polar bears' access to, and hence the availability of, optimal feeding habitat and preferred terrestrial

denning locations during critical times of the year (Bergen *et al.* 2007, p. 6).

Based on the best information available and the dependence of polar bears on sea-ice habitat located over the continental shelf, we have determined that sea ice over the shallower waters of the continental shelf (waters of 300 m or less (984.2 ft or less)) is an essential physical feature for polar bears in the southern Beaufort, Chukchi, and Bering Seas for space for individual and population growth, and for normal behavior.

*Food, Water, Air, Light, Minerals, or Other Nutritional or Physiological Requirements*

Polar bears are carnivores that feed primarily on ice-dependent seals (frequently referred to as "ice seals") throughout their range. Although their primary prey is the ringed seal, polar bears also hunt, to a lesser extent, bearded seals (Stirling and Archibald 1977, p. 1,127; Smith 1980, p. 2,201). In some locales, other seal species are taken. On average, an adult polar bear needs approximately 2 kg (4.4 lbs) of seal fat per day to survive (Best 1985, p. 1,035). Sufficient nutrition is critical for survival in the arctic environment and may be obtained and stored as fat when prey is abundant.

Polar bear movements and distribution are strongly influenced by two factors: (1) The seasonal variations in the presence of the sea ice, and (2) the distribution, abundance, and accessibility of ringed and, to a lesser extent, bearded seals (Stirling *et al.* 1993, p. 18). For example, the anomalous heavy sea-ice conditions in the mid-1970s and mid-1980s caused significant declines in the productivity of ringed seals, which resulted in similar declines in the birth rate of polar bears and the survival of subadults (Stirling 2002, p. 68). The presence of and accessibility of ice seals in the sea-ice habitat are vital to the conservation of the species.

Although seals are their primary prey, polar bears occasionally take much larger animals, such as walruses (*Odobenus rosmarus*), narwhal (*Monodon monoceros*), and beluga whales (*Delphinapterus leucas*) (Kiliaan and Stirling 1978, p. 199; Smith 1980, p. 2,206; Smith 1985, pp. 72–73; Lowry *et al.* 1987, p. 141; Calvert and Stirling 1990, p. 352; Smith and Sjare 1990, p. 99). While these species are occasionally taken, they currently appear to be less important energy sources (Derocher *et al.* 2004, p. 163). In some areas and under some conditions, carrion or remains of subsistence-harvested bowhead whales (*Balaena mysticetus*) may be important to polar bear sustenance as short-term supplemental forms of nutrition. Stirling and Øritsland (1995, p. 2,609) suggested that in areas where ringed seal populations were reduced, other prey species were being substituted. For example, harp seals (*Pagophilus groenlandicus*) are the predominant prey species for polar bears from the Davis Strait population in Canada (Iverson *et al.* 2006, p. 110). Greater availability of harp seals due to a change in distribution may continue to support large numbers of polar bears from the Davis Strait population even if ringed seals become less available (Stirling and Parkinson 2006, p. 270; Iverson *et al.* 2006, p. 110).

Polar bears are very sensitive to changes in sea ice due to climate change because of the effects on the availability of ice seals and their specialized feeding requirements (Laidre *et al.* 2008, p. S112). The availability and accessibility of seals to polar bears, which often hunt at the seals' breathing holes, are likely to decrease with increasing amounts of open water or fragmented ice (Derocher *et al.* 2004, p. 167). Polar bears rarely capture ringed seals in the open water (Furnell and Oolooyuk 1980, p. 89), so it is unlikely that polar bears can survive in ice-free water. Although polar bears occasionally take harbor seals (*Phoca vitulina*), bearded seals, and walrus when they are hauled out on land, it is unlikely, if those species were available, that this would compensate for the reduced availability of ringed seals (Derocher *et al.* 2004, p. 167).

Pregnant polar bear females with insufficient fat stores prior to denning, or in poor hunting condition in the early spring after den emergence, may lead to increased cub mortality (Atkinson and Ramsay 1995, pp. 565–566; Derocher *et al.* 2004, p. 170). Regehr *et al.* (2007b, pp. 17–18) suggested that the increase in the duration of the open water period in fall was a contributing factor to the decrease in the productivity of polar bears in the southern Beaufort Sea population and to the population decline in the Western Hudson Bay population (Stirling *et al.* 1999, p. 304; Regehr *et al.* 2007a, p. 2,673). In the southern Beaufort Sea, the decline in the survival rate of cubs may be directly linked to the inability of females to obtain sufficient nutrition prior to denning (Regehr *et al.* 2006, p. 11; Amstrup *et al.* 2008, p. 236). The inability to obtain sufficient food resources may be due to increases in the length of the fall open water period, which reduces the amount of time available for feeding prior to denning. Polar bears in the southern Beaufort Sea typically reach their maximum weight in fall. Fall, therefore, may be a critical period for winter survival for this population (Garner *et al.* 1994, p. 117; Durner and Amstrup 1996, p. 483). In Alaska, it is not unusual for females in poor condition after den emergence to lose their cubs (Amstrup 2003, p. 601).

During the spring, ringed seals give birth to pups in subnivean (in or under the snow layer) lairs on top of the sea ice. The availability of these seal pups to adult female polar bears with cubs-of-the-year in the spring following den emergence may be critical (Garner *et al.* 1994, p. 117; Stirling and Lunn 1997, p. 177). Atkinson and Ramsay (1995, p. 565) and Derocher and Stirling (1996, p. 1,249; 1998, pp. 255–256) found that heavier cubs have a higher survival rate, and that declines in fat reserves in females during critical periods can negatively affect denning success and cub survival.

Reductions in sea ice will likely reduce productivity of most ice seal species as well, resulting in changes in composition and decrease in abundance of seal species indigenous to some areas (Derocher *et al.* 2004. pp. 167–169). These changes will likely decrease availability, or the timing of availability, of seals as food for polar bears. Ringed seals will likely remain distributed in shallower, more productive southerly areas that are losing their seasonal sea ice and becoming characterized by vast expanses of open water in the spring–summer and fall periods (Harwood and Stirling 1992, pp. 897–898). As a result, the seals will remain unavailable as prey to polar bears during critical times of the year. These factors may, in turn, result in a steady decline in the physical condition of polar bears, which precedes population-level demographic declines in reproduction and survival (Stirling and Parkinson 2006, pp. 266–267; Regehr *et al.* 2007a, pp. 2,679–2,681).

Based on the information presented above, we conclude that the accessibility and availability of sufficient food resources is dependent upon availability of suitable sea-ice habitat over the shallower waters of the Chukchi and Bering Seas and southern Beaufort Sea. Therefore, we have determined that sea ice that moves or forms over the shallower waters of the continental shelf (300 m (984.2 ft) or less), and that contains adequate prey resources (primarily ringed and bearded seals) to support polar bears, is an essential physical feature for polar bears in the southern Beaufort, Chukchi, and Bering Seas for food and physiological requirements.

*Cover or Shelter*

Polar bears from the U.S. populations generally remain with the sea ice for most of the year, and, except for maternal denning, only spend short periods of time on land. Polar bears from U.S. populations take advantage of logs, ocean bluffs, and stream and river drainages to seek shelter from the wind (Lentfer 1976, p. 9). Messier *et al.* (1994, p. 425), Ferguson *et al.* (2000a, p. 1,122), and Omi *et al.* (2003, p. 195) found that polar bears of all ages and both sexes from more northerly populations in Canada may remain in temporary shelter dens in snow drifts on the ice for up to 2 months, presumably to avoid storms, periods of intense cold, and food shortages. The lack of documented use of shelter dens for extended periods by polar bears in Alaska is probably due to the availability of ice seals throughout the winter and less severe weather conditions compared to more northerly latitudes. Occasionally polar bears in the United States, particularly females with small cubs, will dig temporary shelter dens to avoid severe winter storms (Lentfer 1976, p. 9; Amstrup, unpublished data). Information from Native hunters in Alaska suggests that, except for pregnant females and females with young cubs, polar bears do not require additional cover or shelter for survival throughout the year (Lentfer 1976, p. 9). However, the importance of these shelter dens may increase in the future if polar bears, experiencing nutritional stress as a result of loss of optimal sea-ice habitat and access to prey, need to minimize nonessential activities to conserve energy.

Currently, cover and shelter are not considered to be limiting factors for the conservation of polar bears in the United States. The needs of parturient females and cubs for cover and shelter are satisfied through denning behavior and discussed below.

*Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring*

One of the most critical periods for polar bears occurs during denning because the newborn cubs are completely helpless and must remain in the maternal den for protection and growth until they are able, at approximately 3 months of age, to survive the outside elements (Blix and Lentfer 1979, p. R70; Amstrup 2003, p. 596; Durner *et al.* 2006b, p. 31). Den disturbances from human activities have caused den abandonment and cub mortality in the past (Amstrup 1993, p. 249).

The majority of polar bears that den in the United States are from the southern Beaufort Sea population. Unlike the high density of dens that occur on Wrangel Island, Russia (one of the principal denning areas of the Chukchi-Bering Seas population), individual polar bear dens in northern Alaska are widely dispersed over large areas. Within this region, barrier islands, river bank drainages, and coastal bluffs that occur at the interface of mainland and marine habitat receive proportionally greater use for denning than other areas (Amstrup 2003, pp. 596–597; Durner *et al.* 2006b, p. 34). We applied the criteria developed by Durner *et al.* (2009, p. 4–5) to the potential denning areas in Alaska and determined that only the denning habitat from Barrow to the United States-Canada border was considered essential.

Polar bears from the southern Beaufort Sea population den on drifting pack ice, shore-fast ice, and land (Amstrup and Gardner 1994, pp. 4–5), while most other polar bear populations den only on land or shore-fast ice (Amstrup 2003, p. 596). The distribution of maternal denning in the southern Beaufort Sea appears to have changed in recent years. While Amstrup and Gardner (1994) observed that approximately 50 percent of maternal dens occurred on the pack ice, Fischbach *et al.* (2007, p. 1,399) documented a decrease in pack ice denning over 2 decades, from 62 percent (1985–1994) to 37 percent (1998–2004). Fischbach *et al.* (2007, p. 1,403) concluded that the changes in the den distribution were in response to delays in the autumn freeze-up and a reduction in availability and quality of the more stable pack ice suitable for denning, due to increasingly thinner and less stable ice in fall. It is expected that the number of polar bears denning on land in northern Alaska east of Barrow will continue to increase, if the predictions of the continued loss of arctic sea ice due to climate change occur (Schliebe *et al.* 2008, p. 2).

Polar bears in the Beaufort Sea exhibit fidelity to denning areas but not specific den sites (Amstrup and Gardner 1994, p. 7). The location of terrestrial maternal dens is dependent upon a variety of factors, such as sea-ice conditions, prey availability, and weather, all of which vary seasonally and annually. Stirling and Andriashek (1992, p. 364) found that dens often occurred on land adjacent to areas that developed sea ice early in the autumn. Only 4 percent of the polar bear dens from the southern Beaufort Sea population were found on the shore–fast ice adjacent to the mainland coast of Alaska during the 1990s. Thus, the shore–fast ice was not a major denning habitat even during the period when approximately 60 percent of the polar bears dens occurred on the ice.

Polar bears typically choose terrestrial den sites that are near the coast. Amstrup *et al.* (2003, p. 596) determined that 80 percent of all the terrestrial maternal dens located by radio-telemetry were found within 10 km (6.2 mi) of the coast, and over 60 percent were on the coast or on barrier islands. Polar bears frequently use the larger tundra-covered barrier islands that have sufficient relief to accumulate enough snow for denning (Amstrup and Gardner 1994, p. 7). Specific topographic features, such as coastal bluffs and river banks, with suitable macrohabitat characteristics are used as den sites. Suitable macrohabitat characteristics include: (a) Steep, stable slopes (mean = 40°, SD = 13.5°, range 15.5–50.0°), with heights ranging from 1.3 to 34 m (mean = 5.4 m, SD = 7.4) (4.3 to 111.6 ft, mean = 17.7 ft, SD = 24.3), 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; and (c) the absence of disturbance from humans and human activities that might attract other polar bears.

Using high-resolution photographs, Durner *et al.* (2001, p. 119; 2006b, p. 33) mapped suitable denning habitat based on the physical characteristics described above for polar bears from the Colville Delta to the United States-Canada border. They determined there were 1,782 km (1,107 mi) of suitable bank habitat for denning by polar bears between the Colville River and the Tamayariak River (Durner *et al.* 2001, p. 119) and an additional 3,621 km (2,250 mi) between the Canning River and the United States-Canada border in northern Alaska (Durner *et al.* 2006b, p. 33). It should be noted that the areas included in these calculations only include those areas from the Colville River to the United States-Canada border and do not include denning habitat from the Colville River to Barrow or denning habitat located farther inland.

Great distances of open water and delayed freeze-up can prohibit polar bear terrestrial denning. On Hopen, the most southern island of Svalbard, Norway, polar bears do not den when sea ice freezes too late (Derocher *et al.* 2004, p. 166), and terrestrial denning by polar bears is also restricted by greater distances of open water (Fischbach *et al.* 2007, p. 1,402). In the southern Beaufort Sea, changes in polar bear habitat use

have been associated with declines in sea-ice extent (Fischbach *et al.* 2007, p. 1,402; Durner *et al.* 2009a, pp. 55). Fischbach *et al.* (2007, p. 1403–1404) concluded that female polar bear denning distribution changes in response to the changing nature of sea ice (*e.g.,* amount of stable ice, ice consolidation, and a longer open-water period).

In recent years, the East Siberian and Chukchi Seas have exhibited some of the most significant changes in the Arctic, including pronounced warming and thinning of the sea ice (Rigor *et al.* 2002, p. 2,660; Rodrigues 2008, p. 141; Durner *et al.* 2009a, p. 49; Markus *et al.* 2009, pp. 12–13). Scientific data (Rigor and Wallace 2004, p. 3) and local observations suggest that reductions in sea ice in the Chukchi Sea became significant starting at the end of the 1980s. Rodrigues (2008, p. 141) documented declines in both sea-ice extent and area for all Russian Arctic seas between 1979 and 2007. Loss was particularly high along the Alaskan and Chukotkan coasts. Markus *et al.* (2009, p. 9) observed trends of earlier melt onset and later freeze up to be stronger in the Chukchi and Beaufort Seas than any other region in the Arctic. These ice variables have been shown to be the primary drivers of reduced summer sea ice and, therefore, likely reflect changes in a number of sea-ice characteristics. The Chukchi Sea many be particularly vulnerable to rapid sea-ice loss due to the influence of warmer waters of the Pacific Ocean (Woodgate *et al.* 2006, p. 3), as well as regional effects of atmospheric circulation (Rigor *et al.* 2002, p. 2,658; Maslanik *et al.* 2007, p. 3).

Although suitable topography exists on land in western Alaska along the Chukchi Sea coast (USFWS 1995, pp. A19–A33), most of the polar bears from the Chukchi-Bering Seas population currently and historically denned on Wrangel Island and the Chukotka Peninsula, Russia (Stishov 1991b, pp. 90–92). Polar bears likely denned on Wrangel Island and the Chukotka Peninsula because of the proximity of these terrestrial denning areas to the sea-ice edge in the fall. The Service believes that the lengthening of the open-water season and declines in the minimum sea-ice extent coupled with later freeze-up of sea ice in the past 10 years further accentuates the lack of access to terrestrial denning habitat on the coast of western Alaska. The fall sea-ice extent in the Chukchi Sea has declined in recent years (Rodrigues 2008, p. 141; Comiso *et al.* 2008, p. 6; Durner *et al.* 2009a, p. 46; Markus *et al.* 2009, p. 1). The Arctic sea ice this year (2010) receded to the third lowest extent since satellite tracking began in 1979, and during 3 of the past 4 years has record minimum areas have been documented (2007 (lowest), 2009 (second-lowest) and 2010 (third-lowest)) (*http://nsidc.org/arcticseaicenews/* viewed on September 21, 2010). Thus, the distances between the summer foraging habitats and the terrestrial denning habitat in western Alaska have increased and are expected to continue to increase.

In 2008, the Service and the USGS initiated a polar bear study in the Chukchi Sea. An objective of the study is to examine and assess seasonal distribution and habitat use of polar bears in response to environmental changes. During field work, between March and May from 2008–2009, 37 radio collars were deployed on adult female polar bears captured on the sea ice between Point Hope and Kotzebue in the Alaskan Chukchi Sea. Locations of collared female polar bears indicated that of 13 potentially parturient females none denned on the coast of western Alaska. Three did not enter dens and, of the 10 denning occurrences, 8 occurred on Wrangel Island, Russia; 1 on Herald Island Russia; and 1 on sea ice that drifted over 1,287 km (800 mi) north of Wrangel Island, Russia (USFWS unpublished data).

Based on our evaluation of the available information, we believe it is reasonable to assume that the increase in both distance from shore and duration of the fall minimum ice extent in the Chukchi Sea prevents parturient females from reaching the western coast of Alaska prior to denning. Thus, terrestrial denning habitat in western Alaska lacks the "access via sea-ice" component of the terrestrial denning habitat PCE that is necessary for inclusion in critical habitat.

Sea-ice conditions after den emergence can also be important for cub survival (Stirling *et al.* 1993, pp. 20–21; Stirling and Lunn 1997, p. 177), as females typically take their cubs out on the sea ice as soon as the cubs can travel. Small size, limited mobility, and susceptibility to hypothermia from swimming in the cold arctic waters limit the ability of cubs-of-the-year to traverse extensive areas of broken ice and open water immediately following den emergence. If sea-ice conditions become increasingly unstable and fragmented, and large areas of open water develop between the shore-fast ice and the drifting pack ice, females with cubs-of-the-year may have to rely more heavily on shore-fast ice to prevent cub mortality from hypothermia (Larsen 1985, p. 325; Blix and Lentfer 1979, p. R70). Norwegian polar bear researchers (Aars, unpublished data) found that females with small cubs swim much less than lone females in the spring. In the southern Beaufort Sea, females with cubs-of-the-year show a strong preference, following den emergence, for stable, shore-fast ice presumably to protect the cubs from adverse sea and ice conditions and adult male polar bears (Stirling *et al.* 1993, pp. 20–21; Stirling and Lunn 1997, p. 177; Amstrup *et al.* 2006b, p. 1,000). Adult females with cubs-of-the-year overall have smaller annual activity areas than do single females (Amstrup *et al.* 2000b, p. 960; Mauritzen *et al.* 2001, p. 1,710).

Pregnant females select den locations that have access to adequate prey before and after denning and that will provide a safe environment from adult males (which occasionally kill cubs (Derocher and Wiig 1999, p. 308) and females (Amstrup *et al.* 2006b, p. 998)), human disturbance, and adverse weather conditions for their cubs. Consequently, we have determined that terrestrial denning habitat includes the following features essential to the conservation of the species: coastal bluffs and river banks with (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 of 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 may attract other bears.

*Habitats Protected From Disturbance or Representative of the Historic, Geographical, and Ecological Distributions of the Species*

Coastal barrier islands and spits off the Alaska coast provide areas free from human disturbance and are important for denning, resting, and migration along the coast. During fall surveys along the northern coast of Alaska from Barrow to the United States-Canada border (2000–2007), 82 percent of the bears detected have occurred on the barrier islands, 11 percent on the mainland, 6 percent on the shore-fast ice, and 1 percent in the water (USFWS, unpublished data). Polar bears regularly use barrier islands to move along the Alaska coast as they traverse across the open water, ice, and shallow sand bars between the islands. Barrier islands that have been used multiple times for denning include Flaxman Island, Pingok Island, Cottle Island, Thetis Island, and

Cross Island (Amstrup, unpublished data; USFWS 1995, p. 27). Historically, except for denning, polar bears in the United States spend almost the entire year on the sea ice and very little time on land. However, in recent years, the number of bears using the coastal areas, particularly during the summer and fall, has increased (Schliebe *et al.* 2008, p. 2). This may reflect the increase of the open-water period during the summer and early fall in addition to the retreat of the sea ice beyond the continental shelf (Zhang and Walsh 2006, pp. 1,745–1,746; Serreze *et al.* 2007, pp. 1,533–1,536; Stroeve *et al.* 2007, pp. 1–5). Thus, the importance of barrier island habitat, particularly during the summer and fall, is likely to increase.

Typically, polar bears avoid humans. This is demonstrated by the areas where they choose to rest, their den site locations, and their avoidance of snow machines (Anderson and Aars 2008, p. 503). For example, polar bears attracted to subsistence-harvested bowhead whale carcasses on Barter Island, Alaska, swim across the lagoon and rest on Bernard and Jago spits during the day (Miller *et al.* 2006, p. 9) rather than resting on Barter Island closer to the food resource. Also, polar bears tend to avoid denning in areas where active oil and gas exploration, development, and production activities are occurring. In addition, Anderson and Aars (2008, p. 503) report that polar bear females and cubs at Svalbard react to snowmobiles at a mean distance of 1,534 m (5,033 ft).

Within the range of the polar bear population, barrier islands are currently used for denning by parturient females, as a place to avoid human disturbance, and to move along the coast to access den sites or preferred feeding locations. We define barrier island habitat as the barrier islands off the coast of Alaska, their associated spits, and the no-disturbance zone (area extending out 1.6 km (1 mi) from the barrier island mean high tide line). A 1.6-km (1-mi) distance was chosen because this distance approximates the mean distance females and cubs reacted to snowmobiles at Svalbard (Andersen and Aars 2008, p. 503), and because adult females are the most important age and sex class in the population. We conclude that barrier island habitat, as undisturbed areas for resting, denning, and movement along the coast, is a physical feature essential to the conservation of polar bears in the United States.

*Primary Constituent Elements for Polar Bear in the United States*

Based on the needs identified above and our current knowledge of the life history, biology, and ecology of the species, we have determined that the primary constituent elements (PCEs) for the polar bear in the United States 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 suitable macrohabitat characteristics. Suitable macrohabitat characteristics are: (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 of 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. This 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).

We are designating three critical habitat units based on the three PCEs described above. We designate these units based on sufficient PCEs being present to support at least one of the species' essential life-history functions. Each unit contains at least one of the three PCEs.

*Special Management Considerations or Protection*

When designating critical habitat within the geographical area occupied by the species, we assess whether the physical and biological features essential to the conservation of the species may require special management considerations or protection. Potential impacts that could harm the identified essential physical and biological features include reductions in the extent of arctic sea ice due to climate change; oil and gas exploration, development, and production; human disturbance; and commercial shipping. We discuss some of these threats to the essential features below.

Reduction in Sea Ice Due to Climate Change

Sea ice is rapidly diminishing throughout the Arctic, and declines in optimal polar bear sea-ice habitat have already been documented in the southern Beaufort and Chukchi Seas between 1985–1995 and 1996–2006 (Durner *et al.* 2009a, p. 45). In addition, it is predicted that some of the largest declines in optimal polar bear sea-ice habitat in the 21st century will occur in the Chukchi and southern Beaufort Seas (Durner *et al.* 2009a, p. 45). Patterns of increased temperatures, earlier onset of thawing and longer melting periods, later onset of freeze-up, increased rain-on-snow events (rain in late winter which may cause snow dens to collapse and result in mortality of the denning bears (adults and cubs)), and potential reductions in snowfall are occurring. Further, positive feedback systems (i.e., the sea-ice albedo feedback mechanism, described below) and changing ocean and atmospheric circulation patterns can operate to amplify the warming trend. The sea-ice albedo feedback effect is the result of a reduction in the extent of brighter, more reflective sea ice or snow, which reflects solar energy back into the atmosphere, and a corresponding increase in the extent of darker, more heat-absorbing water or land that absorbs more of the sun's energy. This greater absorption of energy causes faster melting of ice and snow, which in turn causes more warming, and thus creates a self-reinforcing cycle or feedback loop that becomes amplified and accelerates with time. Lindsay and Zhang (2005, p. 4,892) suggest that the sea-ice albedo feedback mechanism caused a tipping point in arctic sea ice thinning in the late 1980s, sustaining a continual decline in sea-ice cover that cannot be easily reversed. As a result of changes to the sea-ice habitat due to climate change, there is fragmentation of sea ice, a dramatic increase in the extent of open water areas seasonally, a reduction in the extent and area of sea ice in all seasons, a retraction of sea ice away from productive continental shelf areas throughout the Polar Basin, a reduction of the amount of thicker and more stable multi-year ice, and declining thickness and quality of shore-fast ice (Parkinson *et al.* 1999, pp. 20,840, 20,849; Rothrock *et al.* 1999, p. 3,469; Comiso 2003, p. 3,506; Fowler *et al.* 2004, pp. 71–74; Lindsay and Zhang 2005, p. 4,892; Holland *et al.* 2006, pp. 1–5; Comiso 2006, p. 72; Serreze *et al.* 2007, pp. 1,533–1,536; Stroeve *et al.* 2008, p. 13). These events are interrelated and combine to decrease the extent and

quality of sea ice as polar bear habitat during all seasons, and particularly during the spring–summer period. Lastly, it is predicted that Arctic sea ice will likely continue to be affected by climate change for the foreseeable future (IPCC 2007, p. 49; J. Overland, NOAA, in comments to the USFWS, 2007; May 18, 2008, 73 FR 28239).

Polar bear populations in the Chukchi Sea, Barents Sea, southern Beaufort Sea, Kara Sea, and Laptev Sea (the Divergent Ice Ecoregion) will, or are currently, experiencing the initial effects of changes in sea ice (Rode *et al.* 2007, p. 12; Regehr *et al.* 2007b, pp. 18–19; Hunter *et al.* 2007, p. 19; Amstrup *et al.* 2008, pp. 239–240). These populations are vulnerable to large-scale dramatic seasonal fluctuations in ice movements, decreased access to abundant prey, and increased energetic costs of hunting. These concerns were punctuated by the record minimum summer ice conditions in September 2007, when vast ice-free areas encroached into the central Arctic Basin, and the Northwest Passage was open for the first time in recorded history. The record low sea-ice conditions of 2007, 2009, and 2010 extend an accelerating trend in habitat loss, and further support a concern that current sea-ice models may be conservative and underestimate the rate and level of sea-ice loss in the future (Stroeve *et al.* 2007, p. 9; Stroeve *et al.* 2006, p. 371,373; *http://nsidc.org/arcticseaicenews/* viewed on September 21, 2010).

While we recognize that climate change will negatively affect optimal sea-ice habitat for polar bears, the underlying causes of climate change are complex global issues that are beyond the scope of the Act. However, we will continue to evaluate any special management considerations or protection that may be needed for polar bears and their habitat.

Petroleum Hydrocarbons

Pollution from various potential sources, including oil spills from vessels, or discharges from oil and gas drilling and production, could render areas containing the identified physical and biological features unsuitable for use by polar bears, effectively negating the conservation value of these features. Because of the vulnerabilities to pollution sources, these features may require special management considerations or protection through such measures as placing conditions on Federal permits or authorizations to stimulate special operational restraints, mitigative measures, or technological changes.

Petroleum hydrocarbons come from both natural and anthropogenic sources. The primary natural source is oil seeps. The Arctic Monitoring and Assessment Programme (AMAP) (2007, p. 18) notes that "natural seeps are the major source of petroleum hydrocarbon contamination in the arctic environment." Anthropogenic sources include activities associated with exploration, development, and production of oil (well blowouts, operational discharges); ship- and land-based transportation of oil (oil spills from pipelines, accidents, leaks, and ballast washings); discharges from refineries and municipal waste water; and combustion of fossil fuels.

Polar bears' range overlaps with many active and planned oil and gas operations within 40 km (25 mi) of the coast. In the past, no major oil spills of more than 3,000 barrels have occurred in the marine environment within the range of polar bears. Oil spills associated with terrestrial pipelines have occurred in the vicinity of polar bear habitat, including denning areas (*e.g.,* Russian Federation, Komi Republic, 1994 oil spill, *http://www.american.edu/ted/KOMI.HTM*). Despite numerous safeguards to prevent spills, they do occur. An average of 70 oil and 234 waste product spills per year occurred between 1977 and 1999 in the North Slope oil fields (71 FR 14456; March 22, 2006). Many spills are small (less than 50 barrels) by oil and gas industry standards, but larger spills (greater than or equal to 500 barrels) account for much of the annual volume. The largest oil spill to date on the North Slope oil fields in Alaska (estimated volume of approximately 4,786 barrels [one barrel = approx. 42 gallons]) occurred on land in March 2006, and resulted from an undetected leak in a corroded pipeline (*see* State of Alaska Prevention and Emergency Response Web site at *http://www.dec.state.ak.us/spar/perp/response/sum_fy06/060302301/060302301_index.htm*).

The MMS (now BOEMRE) (2004, pp. 10, 127) estimated an 11 percent chance of a marine spill greater than 1,000 barrels in the Beaufort Sea from the Beaufort Sea Multiple Lease Sale in Alaska. The MMS prepared an environmental impact statement (EIS) on the *Chukchi Sea Planning Area; Oil and Gas Lease Sale 193 and Seismic Surveying Activities in the Chukchi Sea,* and MMS determined that polar bears and their habitat could be affected by both routine activities and a large oil spill (MMS 2007, pp. ES 1–10). Regarding routine activities, the EIS determined that small numbers of polar bears could be affected by "noise and other disturbance caused by exploration, development, and production activities" (MMS 2007, p. ES–4). Data provided by monitoring and reporting programs in the Beaufort Sea and in the Chukchi Sea, as required under the MMPA incidental take authorizations for oil and gas activities, have shown that mitigation measures have successfully minimized impacts to polar bears. For example, since the first incidental take regulations became effective in the Chukchi and Beaufort Seas (in 1991 and 1993, respectively), there has been no known instance of a polar bear being killed. The EIS also evaluated events that would be possible over the life of the hypothetical development and production that could follow the lease sale, and estimated that "the chance of a large spill greater than or equal to 1,000 barrels occurring and entering offshore waters is within a range of 33 to 51 percent." If a large spill were to occur, the analysis conducted as part of the EIS process identified potentially significant impacts to polar bears occurring in the area affected by the spill; the evaluation was done without regard to the effect of mitigating measures (MMS 2007, p. ES–4). An oil spill in the Arctic, similar to the recent catastrophic oil spill from the Deepwater Horizon rig in the Gulf of Mexico, would be more difficult to control and clean up effectively due to the extreme Arctic conditions, fewer resources available locally to respond to such a spill, and the difficulty accessing these very remote areas. The Deepwater Horizon spill demonstrates the importance for oil and gas operators working in the offshore environment to have an adequate quantity of resources on hand to respond to a potential large spill (*e.g.,* skimmers, oil booms, and updated oil spill response plans).

Oil spills in the fall or spring during the formation or break-up of sea ice present a greater risk to polar bear habitat because of difficulties associated with clean-up during these periods, and the presence of bears in the prime feeding areas over the continental shelf. Amstrup *et al.* (2000a, p. 5) concluded that the release of oil trapped under the ice from an underwater spill during the winter could be catastrophic during spring break-up if bears were present. During the autumn freeze-up and spring break-up periods, any oil spilled in the marine environment would likely concentrate and accumulate in open leads and polynyas, areas of high activity for both polar bears and seals (Neff 1990, p. 23). This would result in an oiling of both polar bears and seals

(Neff 1990, pp. 23–24; Amstrup *et al.* 2000a, p. 3; Amstrup *et al.* 2006a, p. 9).

Historically, oil and gas activities have resulted in little direct mortality to polar bears, and the mortality that has occurred has been associated with human-bear interactions rather than spill events. However, oil and gas activities are increasing as development continues to expand throughout the U.S. Arctic and internationally, including in polar bear terrestrial and marine habitats. Offshore oil and gas exploration, development, and production activities in Alaska and adjacent territorial and U.S. waters increase the potential for disturbance of polar bears, their nearshore sea-ice habitat, and the relatively pristine barrier islands used for refuge, denning, and movements. The greatest threat of future oil and gas development is the potential effect of an oil spill or discharges into the marine environment on polar bears or their habitat. In addition, disturbance from activities associated with oil and gas activities can result in direct or indirect effects on polar bear use of habitat. Direct disturbances include displacement of bears or their primary prey (ringed and bearded seals) due to the movement of equipment, personnel, and ships through polar bear habitat. Direct disturbance may cause abandonment of established dens before cubs are able to survive outside the den. Female polar bears tend to select secluded areas for denning, presumably to minimize disturbance during the critical period of cub development. Expansion of the network of roads, pipelines, well pads, and infrastructure associated with oil and gas activities may force pregnant females into marginal denning locations (Lentfer and Hensel 1980, p. 106; Amstrup *et al.* 1986, p. 242). The potential effects of human activities are much greater in areas where there is a high concentration of dens such as Wrangel Island, one of the principal denning areas for the Chukchi-Bering Seas population (Kochnev 2006, p. 163). Oil spills, however, are a concern for polar bears throughout their range.

The National Research Council (NRC 2003, p. 169) evaluated the cumulative effects of oil and gas development in Alaska and concluded the following related to polar bears and ringed seals:

- Industrial activity in the marine waters of the Beaufort Sea has been limited and sporadic and likely has not caused serious cumulative effects to ringed seals or polar bears.
- Careful mitigation can help to reduce the negative effects of oil and gas development, especially if there are no major oil spills. However, full-scale industrial development of waters off the North Slope would increase the negative effects to polar bears through the displacement of polar bears and ringed seals from their habitats, increased mortality, and decreased reproductive success.
- A major Beaufort Sea oil spill would have major effects on polar bears and ringed seals.
- Climatic warming at predicted rates in the Beaufort Sea region is likely to have serious consequences for ringed seals and polar bears, and those effects will increase with the effects of oil and gas activities in the region.
- Unless studies to address the potential increase of and cumulative effects of North Slope oil and gas activities on polar bears or ringed seals are designed, funded, and conducted over long periods of time, it will be impossible to verify whether such effects occur, to measure them, or to explain their causes.

Some alteration of polar bear habitat has occurred from oil and gas development, seismic exploration, or other activities in denning areas. Potential oil spills in the marine environment and expanded activities increase the potential for additional changes to polar bear habitat (Amstrup 2000, pp. 153–154). Any such impacts would be additive to other factors already or potentially affecting polar bears and their habitat.

Special management considerations and protection may be needed to minimize the risk of crude oil spills and human disturbance associated with oil and gas development and production, oil and gas tankers, and potential commercial shipping along the Northern Sea Route to polar bears and the habitat features essential to their conservation.

Shipping and Transportation

Observations over the past 50 years show a decline in arctic sea-ice extent in all seasons, with the most prominent retreat occurring in the summer (Stroeve *et al.* 2007, p. 1). Climate models project an acceleration of this trend with periods of extensive melting in spring and autumn, which would open new shipping routes and extend the period that shipping is feasible (ACIA 2005, p. 1,002). Notably, the navigation season for the Northern Sea Route (across northern Eurasia) is projected to increase from 20–30 days per year to 90–100 days per year. Russian scientists cite increasing use of the Northern Sea Route for transit and regional development as a major source of disturbance to polar bears in the Russian Arctic (Wiig *et al.* 1996, pp. 23–24; Belikov and Boltunov 1998, p. 113; Ovsyanikov 2005, p. 171). Commercial shipping using the Northern Sea Route, especially if it required the use of ice breakers to maintain open shipping lanes, could disturb polar bear feeding and other behaviors, increase the risk of oil spills (Belikov *et al.* 2002, p. 87), and potentially alter optimal polar bear sea-ice habitat.

Increased shipping activity may disturb polar bears in the marine environment, adding additional energetic stresses. If ice-breaking activities occur, these activities may alter essential features used by polar bears, possibly creating ephemeral lead systems and concentrating ringed seals within the refreezing leads. This, in turn, may allow for easier access to ringed seals and may have some beneficial value to polar bears. Conversely, this may cause polar bears to use areas that may have a higher likelihood of human encounters as well as increased likelihood of exposure to oil or waste products that are intentionally or accidentally released into the marine environment. If shipping involved the tanker transport of crude oil or oil products, there would be an increased likelihood of small- to large-volume spills and corresponding oiling of essential sea-ice and terrestrial habitat features, polar bears, and seal prey species (AMAP 2005, pp. 91, 127).

The Polar Bear Specialist Group (PBSG) recognized the potential for increased shipping and marine transportation in the Arctic with declining seasonal sea-ice conditions (Aars *et al.* 2006, pp. 22, 58, 171). The PBSG recommended that the parties to the 1973 *Agreement on the Conservation of Polar Bears* take appropriate measures to monitor, regulate, and mitigate shipping traffic impacts on polar bear populations and habitats (Aars *et al.* 2006, p. 58).

*Summary of Anthropogenic Threats to Features Essential to the Conservation of the Polar Bear Which May Require Special Management Considerations or Protection*

Increased human activities include an expansion of the level of oil and gas exploration, development, and production onshore and offshore, and potential increases in shipping. Individually as well as cumulatively, these activities may result in alteration of polar bear habitat and features essential to their conservation. Any potential impact from these activities would be additive to other factors already or potentially affecting polar bears and their habitat. We acknowledge that the sum total of documented direct impacts from these activities in the past

has been minimal. We also acknowledge that national and local concerns for these activities have resulted in the development and implementation of regulatory programs to monitor and reduce potential effects. For example, the MMPA allows for incidental, non-intentional take (harassment) of small numbers of polar bears during specific activities. Specifically, section 101(a)(5) of the MMPA gives the Service the authority to allow the incidental, but not intentional, taking of small numbers of marine mammals, in response to requests by U.S. citizens (as defined at 50 CFR 18.27(c)) engaged in a specified activity (other than commercial fishing) in a specified geographic region. Under the authority of this section of the MMPA, the Service administers an incidental take program that allows polar bear managers to work cooperatively with oil and gas operators to minimize impacts of their activities on polar bears. The Service evaluates each request for a Letter of Authorization (LOA) under the MMPA incidental take program with special attention to mitigating impacts to polar bears, such as limiting industrial activities around barrier island habitat, which is important for polar bear denning, feeding, resting, and seasonal movements. Incidental take cannot be authorized unless the Service finds that the total of such taking will have no more than a negligible impact on the species and, for species found in Alaska, will not have an unmitigable adverse impact on the availability of the species for taking for subsistence use by Alaska Natives.

If any take that is likely to occur will be limited to nonlethal harassment of the species, the Service may issue an incidental harassment authorization (IHA) under section 101(a)(5)(D) of the MMPA. The IHAs cannot be issued for a period longer than one year. If the taking may result in more than harassment, regulations under section 101(a)(5)(A) of the MMPA must be issued, which may be in place for no longer than 5 years. Once regulations making the required findings are in place, we issue LOAs that authorize the incidental take consistent with the provisions in the regulations. In either case, the IHA or the regulations must set forth: (1) Permissible methods of taking; (2) means of effecting the least practicable adverse impact on the species and their habitat and on the availability of the species for subsistence uses; and (3) requirements for monitoring and reporting.

These incidental take programs under the MMPA currently provide a greater level of protection for the polar bear than equivalent procedures under the Act. Negligible impact under the MMPA, as defined at 50 CFR 18.27(c), is an impact resulting from a specific activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species through effects on annual rates of recruitment or survival. This is a more protective standard than that afforded by the Act. In addition, the authorizations under the MMPA are limited to one year for IHAs and 5 years for regulations, thus ensuring that activities that are likely to cause incidental take are periodically reviewed and mitigation measures that ensure that take remains at the negligible level can be updated.

In the consideration of IHAs or the development of incidental take regulations, the Service conducts an intra-Service consultation under section 7(a)(2) of the Act to ensure that providing an MMPA incidental take authorization is not likely to jeopardize the continued existence of the polar bear. Because the standard for approval of an IHA or the development of incidental take regulations under the MMPA is no more than "negligible impact" to the affected marine mammal species, we expect that any MMPA-compliant authorization or regulation would meet the Act's section 7(a)(2) standards of ensuring that the action is not likely to jeopardize the continued existence of the species or result in the destruction or adverse modification of designated critical habitat. In addition, we anticipate that any proposed action(s) would augment protection and enhance agency management of the polar bear through the application of site-specific mitigation measures contained in authorization issued under the MMPA.

The incidental take regulations for polar bears are an example of an application of the MMPA associated with onshore and offshore oil and gas exploration, development, and production activities in Alaska. Since 1991, affiliates of the oil and gas industry have requested, and we have issued regulations for, incidental take authorization for activities in areas of polar bear habitat. This includes regulations issued for incidental take in the Chukchi Sea for the periods 1991–1996, and June 11, 2008–June 11, 2013 (73 FR 33212), and regulations issued for incidental take in the Beaufort Sea from 1993 to the present. A detailed history of our past regulations for the Beaufort Sea region can be found in our final rule published on August 2, 2006 (71 FR 43926).

The mitigation measures that we have required for all oil and gas projects include a site-specific plan of operation and a site-specific polar bear interaction plan. Site-specific plans outline the steps the applicant will take to minimize impacts on polar bears, such as garbage disposal and snow management procedures to reduce the attraction of polar bears, an outlined chain-of-command for responding to any polar bear sighting, and polar bear awareness training for employees. The training program is designed to educate field personnel about the dangers of bear encounters and to implement safety procedures in the event of a bear sighting. Most often, the appropriate response involves merely monitoring the animal's activities until it moves out of the area. However, personnel may be instructed to leave an area where bears are seen. If it is not possible to leave, the bears can be displaced by using forms of deterrents, such as a vehicle, vehicle horn, vehicle siren, vehicle lights, spot lights, or, if necessary, pyrotechnics (*e.g.,* cracker shells). The intent of the interaction plan and training activities is to allow for the early detection and appropriate response to polar bears that may be encountered during operations, which eliminates the potential for injury or lethal take of bears in defense of human life. By requiring such steps be taken, we ensure any impacts to polar bears will be minimized and will remain negligible.

Additional mitigation measures are also required on a case-by-case basis depending on the location, timing, and specific activity. The types of mitigation measures that we have required include: Trained marine mammal observers for offshore activities; pre-activity surveys (*e.g.,* aerial surveys, infra-red thermal aerial surveys, polar bear scent-trained dogs) to determine the presence or absence of dens or denning activity; measures to protect pregnant polar bears during denning activities (den selection, birthing, and maturation of cubs), including incorporation of a 1.6-km (1-mi) buffer surrounding known dens; and enhanced monitoring or flight restrictions. Detailed denning habitat maps, combined with information on denning chronology and remote den detection methods such as forward-looking infrared (FLIR) imagery, facilitate managing human activities associated with oil and gas operations to minimize disturbances to female polar bears during this critical denning period (Durner *et al.* 2001, p. 19; Amstrup *et al.* 2004b, p. 343; Durner *et al.* 2006b, p. 34). These mitigation measures are implemented to limit human-bear interactions and disturbances to bears and have ensured that industry effects

on polar bears have remained at the negligible level.

Incidental take regulations under the MMPA have been issued since 1991 and 1993 in the Chukchi and Beaufort Seas, respectively. The regulations typically extend for a 5-year period. The current regulatory period for the Beaufort Sea is August 2, 2006, to August 2, 2011, and for the Chukchi Sea is June 11, 2008, to June 11, 2013. The 5-year regulatory duration is to allow the Service (with public review) to periodically assess whether the level of activity continues to have a negligible impact on polar bears, their habitat, and their availability for subsistence uses.

*Criteria Used To Identify Critical Habitat*

As required by section 4(b) of the Act, we used the best scientific data available in determining areas within the geographical area occupied at the time of listing that contain the features essential to the conservation of polar bears in the United States, and areas outside of the geographical area occupied at the time of listing that are essential for the conservation of polar bears. Information sources included articles in peer-reviewed journals, scientific status surveys and studies, biological assessments, or other unpublished materials and expert opinion. We are not currently proposing any areas outside the geographical area presently occupied by the species because occupied areas are sufficient for the conservation of polar bears in the United States.

We have also reviewed available information that pertains to the habitat requirements of this species. During the process of preparing our critical habitat designation for polar bears in the United States, we reviewed the relevant information available, including peer-reviewed journal articles, the final listing rule, unpublished reports and materials (such as survey results and expert opinions), and regional maps that have been digitized in ArcGIS Geographic Information System (GIS) coverages.

We are designating critical habitat for polar bears in the United States in areas occupied at the time of listing that are defined by physical and biological features essential to the conservation of polar bears in the United States and which may require special management considerations or protection. We considered qualitative criteria in the selection of specific essential features for polar bear critical habitat in the United States. These criteria focused on: (1) Identifying specific areas where polar bears consistently occur, such as the ice edge near flaw zones, leads, or polynyas, or denning areas near the coast; and (2) identifying specific areas where polar bears are especially vulnerable to disturbance during denning and the open-water period.

When determining critical habitat boundaries within this final rule, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, and other structures because such lands lack the features essential for polar bear conservation. We are not including existing manmade structures in the final critical habitat designation because they generally do not contain the physical or biological features essential to the conservation of the species. Therefore, we have determined that manmade structures on all types of land ownership do not meet the criteria to be considered critical habitat for polar bears, or the definition of critical habitat in section 3(5)(a) of the Act, and should not be included in the final designation. Examples of structures that are not included as part of designated critical habitat include: Houses, gravel roads, airport runways and facilities, pipelines, central processing facilities, saltwater treatment plants, well heads, pump jacks, housing facilities or hotels, generator plants, construction camps, pump stations, stores, shops, piers, docks, jetties, seawalls, and breakwaters on the lands owned or leased by the oil and gas industry, USAF lands, and local communities that overlap with this final critical habitat designation for polar bears in Alaska.

The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect that such developed lands are not included in the final critical habitat designation. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this final rule have been removed by text in the final rule and are not designated as critical habitat. Therefore, a Federal action involving these lands would not trigger a section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the essential features in the adjacent critical habitat.

**Sea-Ice Habitat Criteria**

The sea-ice habitat considered essential for polar bear conservation is that which is located over the continental shelf at depths of 300 m (984.2 ft) or less. The location of this sea-ice habitat varies geographically, depending foremost on the time of year (season) and secondarily on regional or local weather and oceanographic conditions. During spring and summer, the essential sea-ice habitat follows the northward progression of the ice edge as it retreats northward. Conversely, during autumn, the essential sea-ice habitat follows the southward progression of the ice edge as it advances southward. Use by polar bears of specific areas of sea-ice habitat varies daily and seasonally with the advance and retreat of the sea ice over the continental shelf (Durner *et al.* 2004, pp. 16–20; Durner *et al.* 2006a, pp. 27–30). The duration that any given location maintains the sea-ice PCE varies annually, depending on the rate of ice melt (or freeze), as well as local wind and ocean current patterns that dictate the directions and rates of ice drift.

Mapping specific sea-ice habitat is impracticable because it is dynamic and highly variable on both temporal and spatial scales. Sea-ice distribution and composition vary within and among years. For example, sea-ice conditions that are characteristic of polar bear optimal feeding habitat vary depending on the wind, currents, weather, location, and season. Therefore, sea ice that was optimal at one time may not be at another, nor will it necessarily be the same from year-to-year during the same month.

We used the area occupied by the polar bear in the United States, and, within that area, the extent of the continental shelf, as criteria to identify critical habitat containing essential sea-ice features. Because we are limited to designating critical habitat to lands and waters within the jurisdiction of the United States, in some areas we also used the outer extent of the Exclusive Economic Zone of the United States and the International Date Line (the United States-Russia boundary) as the boundary of designated critical habitat.

**Terrestrial Denning Habitat Criteria**

Polar bears in the United States create maternal dens in snowdrifts. The northern coastal plain in Alaska is relatively flat, and thus any areas with sufficient relief, such as coastal bluffs, river banks, and even small cut banks and streams that catch the drifting snow, may provide suitable denning habitat. The most frequently used denning habitat on the coastal plain of Alaska is along coastal bluffs and river banks. Macrohabitat characteristics of the sites chosen for snow dens were steep, stable slopes (mean = 40°, SD = 13.5°, range 15.5–50.0°), with heights ranging from 1.3 to 34 m (mean = 5.4 m, SD = 7.4) (4.3 to 111.6 ft, mean = 17.7 ft, SD = 24.3), with water or relatively level ground below the slope and

relatively flat terrain above the slope (Durner *et al.* 2001, p. 118; Durner *et al.* 2003, p. 60). Although the river banks and coastal bluffs were most frequently used as denning habitat, more subtle microhabitat features such as deep narrow gullies, dry stream channels (usually some distance from an active stream channel), and broad vegetated seeps that occurred in relatively flat tundra are also used (Durner *et al.* 2001, p. 118; Durner *et al.* 2003, p. 61). Remarkably, banks with as little as 1.3 m (4.3 ft) of relief contained dens. The common features in many of the dens in these areas were the presence of sea ice within 16 km (10 mi) of the coast and the ability of the terrain to catch enough drifting snow to be suitable for den construction. Although polar bears from the Chukchi-Bering Seas population historically denned in Russia on Wrangel Island and the Chukotka Peninsula, recent changes in the sea-ice formation patterns (Rigor *et al.* 2002, p. 2,660; Rodrigues 2008, p. 141; Markus *et al.* 2009, p. C12023–C12024) have resulted in the sea ice receding even farther north during the fall, which further precludes access to coastal denning areas in Alaska prior to winter.

In northern Alaska from the United States-Canada border to Barrow, high-density terrestrial denning habitat up to about 40 km (25 mi) from the mainland coast has been identified (Durner *et al.* 2001, p. 119; Durner *et al.* 2003, p. 59; Durner *et al.* 2006b, p. 34; Durner *et al.* 2009b, p. 5). Detailed denning habitat data from the United States-Canada border to about 28.5 km (17.4 mi) southeast of Barrow, Alaska, has been mapped, but only data for the area from the United States-Canada border to the Colville River Delta has been field verified and peer reviewed. Denning habitat data on barrier islands is also available for this section of the coastline. The detailed denning habitat information in the area between the Colville River Delta to approximately 28.5 km (17.4 mi) southeast of Barrow, Alaska, will be available following field-verification and peer-review. Based on the habitat characteristics of the den sites (which we describe above), the North Slope contains large potential areas of denning habitat.

To determine high-use coastal denning areas in Alaska, we established selection criteria to determine the core denning areas. We defined the maximum inland extent of critical denning habitat to be the distance from the coast, measured in 8-km (5-mi) increments, in which 95 percent of all historical confirmed and probable dens have occurred east of Barrow, Alaska (Durner *et al.* 2009b, p. 5). We determined the inland extent of the terrestrial denning habitat from an analysis of confirmed and probable polar bear maternal dens by radio-telemetry between 1982 and 2009 (Durner *et al.* 2009b, p. 3). Based on the preference by pregnant females to select den sites relatively near the coast, we expect that polar bears from the Chukchi-Bering Seas population will continue their normal behavior of traveling with receding pack ice to den sites in Russia. We did not include potential terrestrial or barrier island denning habitat in western Alaska in this critical habitat designation for the polar bear. Access to coastal denning habitat areas is an essential feature of critical habitat because large expanses of open water and the timing of ice freeze-up can prohibit polar bear denning. On Hopen Island, the southernmost island of Svalbard, Norway, polar bears do not den when the sea ice freezes too late (Derocher *et al.* 2004, p. 166). Fischbach *et al.* (2007, p. 1,402) concluded that terrestrial denning is restricted by greater open-water fetch and Bergen *et al.* (2007, p. 5) predicted an increasing trend during the 21st century in the distances between the summer sea-ice habitat and terrestrial denning habitat in northeast Alaska. Historically polar bears from the Chukchi-Bering Seas population have not had access to denning habitat in western Alaska and thus have selected terrestrial denning sites on Wrangel Island and the Chukotka Peninsula when the sea ice is at its minimum extent in the fall. We assume that the energetic demands placed on pregnant polar bears having to swim great distances from summer foraging habitats to suitable terrestrial denning habitats in the fall precludes denning in western Alaska. While we recognize that the coastal areas from Barrow southward to the Seward Peninsula have characteristics that appear to allow for the formation of denning habitat, radio-telemetry data indicate that, historically, few bears have denned there. Therefore, we determined that coastal mainland and barrier island terrestrial habitat in western Alaska from Barrow southward to the Seward Peninsula is not accessible to pregnant polar bears from the Chukchi-Bering Seas population in the fall, whereas terrestrial habitats in northern Alaska have been historically, and currently are, available to pregnant polar bears from the southern Beaufort Sea population for denning.

**Barrier Island Habitat Criteria**

Barrier islands range from small sandy islands just above sea level to larger tundra-covered islands that can support polar bear dens. The distance between the barrier islands and the mainland can vary from 100 m to 50 km (328 ft (ft) to 31 mi). Although less dynamic than sea-ice habitat, barrier islands are constantly shifting due to erosion and deposition from wave action during storms, ice scouring, currents, and winds. The location of the barrier islands generally parallels the mainland coast of Alaska. However, the barrier islands are not evenly distributed along the coast. They often occur in relatively discrete island groups such as Jones Islands between Olitkok Point and Prudhoe Bay or the Plover Islands east of Point Barrow. Polar bears use barrier islands as migration corridors and move freely between the islands by swimming or walking on the ice or shallow sand bars. Since they also use barrier islands to avoid human disturbance, we have included the ice, marine waters, and terrestrial habitat within 1.6 km (1 mi) of the mean high tide line of the barrier islands as part of the barrier island habitat (no-disturbance zone).

We included spits of land in the barrier island habitat category. Spits are attached to the mainland but extend out into the ocean and often are an extension of the barrier islands themselves. These spits were included because they have the same characteristics of the main barrier islands with which they are associated.

**Final Critical Habitat Designation**

We are designating three critical habitat units for polar bear populations in the United States. You can view detailed, colored maps of areas designated as critical habitat in this final rule at *http://alaska.fws.gov/fisheries/mmm/polarbear/criticalhabitat.htm.* You can obtain hard copies of maps by contacting the Marine Mammals Management Office (*see* **FOR FURTHER INFORMATION CONTACT**).

The critical habitat units we describe below constitute our current assessment, based on the best available science, of areas that meet the definition of critical habitat for polar bears in the United States. Table 1 shows the occupied units. The three units we are designating as critical habitat are: (1) Sea-ice Habitat; (2) Terrestrial Denning Habitat; and (3) Barrier Island Habitat.

TABLE 1—OCCUPANCY OF DESIGNATED CRITICAL HABITAT UNITS BY POLAR BEARS

| Unit | Occupied at time of listing | Currently occupied | Estimated size of area in km[2] (mi[2]) | State/federal/native ownership ratio (percent)[2] |
|---|---|---|---|---|
| (1) Sea-ice Habitat | Yes | Yes | 464,924 (179,508) | 8/92/0 |
| (2) Terrestrial Denning Habitat | Yes | Yes | 14,652 (5,657) | 20/74/6 |
| (3) Barrier Island Habitat | Yes | Yes | 10,576 (4,083) | 64/18/18 |
| Total | | | 484,734[1] (187,157)[1] | 9/90/1 |

[1] The total acreage reported is less than the sum of the three units because Unit 3 slightly overlaps Units 1 and 2.
[2] State-selected and Native-selected lands are considered Federal lands. State and Native-selected lands are those lands that have been selected but not yet conveyed from the Federal Government.

Below, we present brief descriptions of all critical habitat units, and reasons why they meet the definition of critical habitat and are included in this final rule. Calculations of sea-ice habitat are from GIS data layers of hydrographic survey data compiled by the National Oceanic and Atmospheric Administration (NOAA), the U.S. Geological Survey, and the U.S. Fish and Wildlife Service.

With regard to ownership of the marine area covered by the sea-ice habitat, the waters of the State of Alaska extend seaward from the mean high tide line for 5.6 nautical-kilometers (3 nautical-miles (nm)) and have been mapped by NOAA (*http://www.nauticalcharts.noaa.gov/csdl/mbound.htm*). Federal waters extend from the 5.6 nautical-km (3 nm) State boundary out to the U.S. 370.7 nautical-km (200 nm) Exclusive Economic Zone (EEZ) (Table 2), and include the territorial waters of the United States (a subset of the EEZ, which extends from the State boundary to 22.2 nautical-km (12 nm) out).

TABLE 2—OWNERSHIP STATUS OF CRITICAL HABITAT UNITS FOR POLAR BEARS IN THE UNITED STATES

| Area | Federal[1] (percent) | State (percent) | Private (percent) | Alaska Native (percent) |
|---|---|---|---|---|
| (1) Sea-ice Habitat | 92.1 | 7.9 | 0.0 | 0.0 |
| (2) Terrestrial Denning Habitat | 74.0 | 20.0 | 0.0 | 6.0 |
| (3) Barrier Island Habitat | 17.6 | 64.3 | 0.0 | 18.1 |
| Total[2] | 91.0 | 8.2 | 0.0 | 0.58 |

[1] State-selected and Native-selected lands are considered Federal lands.
[2] The percentages do not add up to 100 percent due the slight overlap between Units 3 and Units 1 and 2.

Unit 1: Sea-Ice Habitat

Unit 1 consists of approximately 464,924 km[2] (179,508 mi[2]) of the sea-ice habitat ranging from the mean high tide line to the 300-m (984.2-ft) depth contour. Because we are limited by 50 CFR 424.12(h) to designating critical habitat only on lands and waters under U.S. jurisdiction, Unit 1 does not extend beyond the U.S. 370.7 nautical-km (200 nm) EEZ to the north, the International Date Line to the west, or the United States–Canada border to the east. To delineate the southern boundary, we used the southern extent of the Chukchi-Bering Seas population as determined by telemetry data (Garner *et al.* 1990, p. 223), because the 300-m (984.2-ft) depth contour extends beyond the southern extent of the polar bear population. The vast majority (92 percent) of Unit 1 is located within Federal waters.

Unit 1 contains PCE number 1, which is required for feeding, breeding, denning, and movements that are essential for the conservation of polar bear populations in the United States. Special management considerations and protection may be needed to minimize the risk of crude oil spills associated with oil and gas development and production, oil and gas tankers, and the risks associated with commercial shipping within this region and along the Northern Sea Route.

Unit 2: Terrestrial Denning Habitat

Unit 2 consists of an estimated 14,652 km[2] (5,657 mi[2]) of land, located along the northern coast of Alaska, with the appropriate denning macrohabitat and microhabitat characteristics (Durner *et al.* 2001, p. 118), as described under "Terrestrial Denning Habitat Criteria" above. The area designated as critical habitat contains approximately 95 percent of the known historical den sites from the southern Beaufort Sea population (Durner *et al.* 2009b, p. 3). The inland extent of denning distinctly varied between two longitudinal zones, with 95 percent of the polar bear dens between the Kavik River and the United States-Canada border occurring within 32 km (20 mi) of the mainland coast, and 95 percent of the dens between the Kavik River and Barrow occurring within 8 km (5 mi) of the mainland coast. We did not identify denning habitat for the Chukchi-Bering Seas population in western Alaska because coastal areas in western Alaska do not contain the "access via sea-ice" component of the terrestrial denning habitat PCE. Historically most of these polar bears den on Wrangel Island and Chukotka Peninsula, Russia. Typically polar bears follow the northerly retreat of the sea ice and are precluded from denning on the western coast of Alaska due to extreme open-water fetch and

late ice freeze-up. Increases in the length of the open-water season along with declines in the sea ice extent will likely exacerbate this phenomenon.

Twenty percent, 74 percent, and 6 percent of Unit 2 is located within State of Alaska land, Federal lands, and Native-owned lands, respectively. In addition, 53.3 percent of the land included within Unit 2 occurs within the boundaries of the Arctic National Wildlife Refuge.

Unit 2 contains the necessary topographic, macrohabitat, and microhabitat features identified in PCE 2 that are essential for the conservation of polar bears in the United States. Special management considerations and protection may be needed to minimize the risk of human disturbances and crude oil spills associated with oil and gas development and production, and the risk associated with commercial shipping.

Unit 3: Barrier Island Habitat

Unit 3 consists of an estimated 10,576 $km^2$ (4,083 $mi^2$) of barrier island habitat. Barrier island habitat includes the barrier islands themselves and associated spits, and the water, ice, and any other terrestrial habitat within 1.6 km (1 mi) of the islands. Approximately sixty-four percent of Unit 3 consists of State of Alaska owned land and jurisdictional waters; 18.1 percent consists of Alaska Native owned land, and 17.6 percent consists of Federal Government owned land.

Unit 3 contains PCE number 3, which is essential for the conservation of polar bear populations in the United States. Coastal barrier islands and spits off the Alaska coast provide areas free from human disturbance and are important for denning, resting, and movements along the coast to access maternal den and optimal feeding habitat. Special management considerations and protection may be needed to minimize the risk of human disturbances, shipping, and crude oil spills associated with oil and gas development and production, oil and gas tankers, and other marine vessels.

**Effects of Critical Habitat Designation**

*Section 7 Consultation*

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any "action" within the meaning of the regulations (50 CFR 402.02) that the agency authorizes, funds, or carries out is not likely to destroy or adversely modify designated critical habitat. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action that may result in destruction or adverse modification of proposed critical habitat.

Decisions by the 5th and 9th Circuit Courts of Appeals have invalidated our regulatory definition of "destruction or adverse modification" (50 CFR 402.02) (*see Gifford Pinchot Task Force* v. *U.S. Fish and Wildlife Service,* 378 F. 3d 1059 (9th Cir. 2004) and *Sierra Club* v. *U.S. Fish and Wildlife Service et al.,* 245 F.3d 434, 442F (5th Cir. 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify designated critical habitat. Under the statutory provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would remain functional (or retain the current ability for the PCEs to be functionally established) to serve its intended conservation role for the species.

If a Federal action may affect a species listed under the Act or its designated critical habitat, the responsible Federal agency (action agency) must enter into consultation with the Secretary of the Interior, who is generally responsible for terrestrial species (consulting agency). The Secretary has delegated his responsibilities to the Service in the case of Interior. The Secretary of the Interior has jurisdiction over the polar bear (50 CFR 402.01(b)).

Examples of actions that are subject to the section 7 consultation process are actions on State, Tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat, and actions on State, Tribal, local, or private lands that are not federally funded or authorized, do not require section 7 consultation.

As a result of section 7 consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of either:

(1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or

(2) A biological opinion for Federal actions that may affect, and are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify critical habitat, we provide reasonable and prudent alternatives to the project, if any are identifiable, that would avoid the likelihood of jeopardy and/or destruction or adverse modification of critical habitat. We define "reasonable and prudent alternatives" (at 50 CFR 402.02) as alternative actions identified during consultation that:

- Can be implemented in a manner consistent with the intended purpose of the action,
- Can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction,
- Are economically and technologically feasible, and
- Would, in the Director's opinion, avoid the likelihood of jeopardizing the continued existence of the listed species and/or avoid the likelihood of destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are also variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where we have listed a new species or have subsequently designated critical habitat that may be affected and the Federal agency has retained discretionary involvement or control over the action (or the agency's discretionary involvement or control is authorized by law). Consequently, Federal agencies sometimes may need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

Following the listing of the polar bear as a threatened species on May 15, 2008, the Service conducted an intra-Service consultation under section 7(a)(2) of the Act to ensure that the issuance of Incidental Take Regulations under the MMPA is not likely to jeopardize the continued existence of the polar bear. The Service issued its Programmatic Biological Opinion For Polar Bears (*Ursus maritimus*) On Chukchi Sea Incidental Take Regulations on June 3, 2008, concluding that regulations under

the MMPA will not appreciably reduce the likelihood of survival and recovery of the polar bear, and therefore are not likely to jeopardize the species' continued existence. On June 23, 2008, the Service issued its Programmatic Biological Opinion For Polar Bears On the Beaufort Sea incidental take regulations, similarly concluding that regulations under the MMPA will not appreciably reduce the likelihood of survival and recovery of the polar bear, and therefore are not likely to jeopardize the continued existence of the polar bear.

In issuing these opinions, the Service provided notice that re-initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if, among other things, a new species is listed or critical habitat is designated that may be affected by the action. Thus, designation of critical habitat for the polar bear would require the Service to re-initiate consultation on these MMPA incidental take regulations.

*Application of the "Adverse Modification" Standard*

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species, or would retain its current ability for the PCEs to be functionally established. Activities that may destroy or adversely modify critical habitat are those that alter the PCEs to an extent that appreciably reduces the conservation value of critical habitat for polar bear populations in the United States.

Section 4(b)(8) of the Act requires us to summarize the data relied upon in developing this rule and how the data relate to the rule. In addition, the summary must, to the maximum extent practicable, include a brief description and evaluation of activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation.

Examples of activities that, when authorized, funded, or carried out, or by a Federal agency, may affect critical habitat and therefore should result in consultation for the southern Beaufort Sea and the Chukchi-Bering Seas polar bear populations in the United States include, but are not limited to:

(1) Actions that would reduce the availability or accessibility of polar bear prey species. Such activities could include, but are not limited to, human disturbance when polar bears are foraging at the ice edge, and displacement of polar bears from optimal sea-ice habitat, particularly during critical feeding periods in the fall or following den emergence in the spring. Activities that reduce availability or accessibility of prey may cause polar bears to forage outside of optimal foraging areas, thus potentially reducing their fitness.

(2) Actions that would directly impact the PCEs. Such activities could include, but are not limited to: Seismic exploration; construction of ice and gravel roads; construction of drilling pads; development of new onshore and offshore production sites; use of helicopters, fixed wing aircraft, boats, snow machines, and vehicles by industry to access sites such as work sites; and increased year-round shipping.

(3) Actions that would render critical habitat areas unsuitable for use by polar bears. Such activities could include, but are not limited to, human disturbance or pollution from a variety of sources, including discharges from oil and gas drilling and production, or spills of crude oil, fuels, or other hazardous materials from vessels, primarily in harbors or other ports. While it is illegal to discharge fuel or other hazardous materials, it happens more often in ports and harbors than in other areas. Additionally, increased vessel traffic and associated ice-breaker activity could negatively affect optimal sea-ice habitat for polar bears. These activities could result in direct mortality or displace polar bears from, or adversely affect, essential sea-ice and denning habitat and habitat free from disturbance (such as barrier islands). Parturient polar bears must be free from disturbance during critical feeding periods prior to denning in the fall and following den emergence in the spring. Disturbance during the critical denning periods or destruction of the denning habitat could result in lower cub survival and recruitment into the population. Declines in recruitment and survival of polar bears, a K-selected species (long-lived species with low reproductive rates), could result in population declines and slow recovery, and could potentially affect the perpetuation of polar bears in the United States.

**Exemptions**

*Application of Section 4(a)(3) of the Act*

The Sikes Act Improvement Act of 1997 (Sikes Act) (16 U.S.C. 670a *et seq.*) required each military installation that includes land and water suitable for the conservation and management of natural resources to complete an integrated natural resources management plan (INRMP) by November 17, 2001. An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found on the base. Each INRMP includes:

- An assessment of the ecological needs on the installation, including the need to provide for the conservation of listed species;
- A statement of goals and priorities;
- A detailed description of management actions to be implemented to provide for these ecological needs; and
- A monitoring and adaptive management plan.

Among other things, each INRMP must, to the extent appropriate and applicable, provide for fish and wildlife management; fish and wildlife habitat enhancement or modification; wetland protection, enhancement, and restoration where necessary to support fish and wildlife; and enforcement of applicable natural resource laws.

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108–136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: "The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation."

We consulted with the military on the development and implementation of INRMPs for installations with federally listed species. The INRMPs developed by military installations located within the proposed critical habitat areas were analyzed for exemption under the authority of section 4(a)(3)(B) of the Act. Cooperation between the DOD installations and the Service on specific conservation measures relative to polar bears is ongoing.

*Approved Integrated Natural Resources Management Plans*

We examined the INRMPs for the military installations to determine whether they provide benefits to polar bears. The USAF submitted two INRMPs for review, one for the Inactive Radar Sites and one for the Active Radar Sites. Most of the radar sites that

overlap with the range of polar bears are located in relatively remote locations along the north and west coast of Alaska. These sites occupy relatively small areas and are maintained by a small staff of up to 20 individuals. The USAF lands covered by these INRMPS that overlap with the polar bear critical habitat designation are less than 1 percent of the total polar bear critical habitat designation.

*The INRMP for the Inactive Radar Sites, Integrated Natural Resources Management Plan, 2009 Revision—2009 Wetlands & Polar Bear Update, Inactive Sites, Alaska 611th Air Support Group,* includes 17 sites in Alaska, of which only Point Lay (former LRRS), Point Lonely (former SRRS), and the West Nome Tank Farm (former LRRS) overlap with the range of polar bears in Alaska. Point Lonely is the only Inactive Site that overlaps with the designated polar bear critical habitat. The Radar Site at Point Lonely is currently undergoing environmental restoration, and once the remedial actions are completed there are long-term plans (2009–2029) to continue monitoring this site.

The INRMP for the Active Radar Sites, *Integrated Natural Resources Management Plan, 2007 Revision—2009 Update, Annual Review, Alaska Radar System, Alaska Short and Long Range Radar Sites, Alaska 611th Air Support Group,* includes 16 radar sites in Alaska, of which 9, Wainwright Short Range Radar Site (SRRS), Point Barrow Long Range Radar Site (LRRS), Oliktok LRRS, Bullen Point SRRS, Barter Island LRRS, Cape Lisburne LRRS, Kotzebue LRRS, Tin City LRRS, and Cape Romanzof LRRS, overlap with the range of polar bears in Alaska. Only Point Barrow LRRS, Oliktok LRRS, Bullen Point LRRS, and Barter Island LRRS Radar Sites overlap with the polar bear critical habitat designation.

The INRMP for the Inactive and Active Sites includes several provisions to protect polar bears. The Base Operational Support (BOS) contractor, working for the Air Force, has requested a Letter of Authorization (LOA) under the MMPA incidental take regulations to allow for the intentional (non-lethal) take of polar bears on a yearly basis. This authorization is related to harassment activities only. This year ARCTEC, the BOS support contractor, requested an LOA for intentional take of polar bears at the USAF which expires December 31, 2010. The ability to haze problem bears from the radar sites helps protect polar bears, because polar bears learn to associate humans with negative consequences.

During the summer of 2009, the USAF developed hazing guidelines to discourage individuals employed by them from prematurely killing a polar bear. Because hunting is not permitted on USAF Short Range and Long Range Radar Sites and because of the additional protections for polar bears under the Act, USAF policy states that if someone shoots a polar bear and cannot present overwhelming evidence for the imminent necessity of lethal take, then that person will likely be liable for civil and criminal prosecution.

Deterring bears from areas of human activity also minimizes the chances of negative human-bear interactions. To meet this goal, the USAF incinerates all food waste and installs fences under buildings on stilts to reduce access to areas that might be attractive denning sites. The USAF has adopted the recommendations of the Polar Bear Interaction Management Plan, a plan that was developed in cooperation with the Service. The USAF uses the Polar Bear Interaction Management Plan as an educational tool to inform personnel and visitors of the appropriate behavior around bears (including deterrence methods, polar bear safety protocols, and appropriate food management). In addition, the USAF has stated that it "intends to maintain compliance with the requirements of applicable laws as well as continuing its responsibilities for stewardship of the natural resources found on lands under our control." We have also considered the current obligation of the USAF to consult with the Service on activities regardless of the designation of critical habitat in this final rule, minimal delays and costs associated with consultation relative to this polar bear critical habitat designation, and the educational benefits afforded by the designation of polar bear critical habitat in Alaska.

**Conclusion**

Habitat features essential to polar bear conservation are present on USAF lands, and each affected installation has an approved INRMP. Activities occurring on these installations are being conducted in a manner that provides a benefit to polar bear.

Based on the above considerations, and in accordance with section 4(a)(3)(B)(i) of the Act we have determined that the USAF lands that overlap with the designated polar bear critical habitat at Point Lonely (former SRRS), Point Barrow LRRS, Oliktok LRRS, Bullen Point LRRS, and Barter Island LRRS are subject to the approved INRMPs and that conservation efforts identified in the INRMPs provide a benefit to polar bears occurring in habitats within or adjacent to these facilities. Therefore, lands within these installations are exempt from critical habitat designation under section 4(a)(3) of the Act. As a result, we are not including a total of approximately 1,720 ha (4,250 ac) of habitat in these DOD installations in this final critical habitat designation because of these exemptions.

**Exclusions Under Section 4(b)(2) of the Act**

*Application of Section 4(b)(2) of the Act*

Section 4(b)(2) of the Act states that the Secretary must designate and revise critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, it is clear from the plain language, meaning, and context of the Act itself, as well as the legislative history, that Congress intended for the Secretary to have broad discretion regarding which factor(s) to use and how much weight to give to any factor.

When considering what benefits an area may receive from being included in the critical habitat designation, we consider the additional regulatory benefits under section 7 of the Act that the area would receive from the protection against adverse modification or destruction resulting from actions with a Federal nexus, the educational benefits of mapping essential habitat for recovery of the listed species, and any benefits that may result from a designation due to State or Federal laws that may apply to critical habitat.

When considering the benefits of exclusion, we consider, among other things, whether exclusion of a specific area is likely to result in conservation, the continuation, strengthening, or encouragement of partnerships, or implementation of a management plan that provides equal or more conservation than a critical habitat designation would provide.

After evaluating the benefits of inclusion and the benefits of exclusion, we carefully evaluate the two sides to determine whether the benefits of exclusion outweigh those of inclusion. If they do, we then determine whether exclusion of the particular area would

result in extinction of the species. If exclusion of an area from critical habitat will result in extinction, then it will not be excluded from the designation.

Based on the information provided by entities seeking exclusion, as well as any additional public comments we received, we evaluated whether certain lands in the proposed critical habitat were appropriate for exclusion from this final designation. We considered the areas discussed below for exclusion under section 4(b)(2) of the Act, and present our detailed analysis below. For those areas in which the Secretary has exerted his discretion to exclude, we believe that:

(1) Their value for conservation of the polar bear and its habitat will be preserved for the foreseeable future by existing protective actions, or

(2) The benefits of excluding the particular area outweigh the benefits of including it, based on a consideration of the "other relevant impact" provision of section 4(b)(2) of the Act, and the area's exclusion would not result in the extinction of polar bear.

A total of 5,698 ha (14,080 ac) of terrestrial coastal denning habitat (less than one percent of the area proposed as critical habitat) have been excluded from designation as critical habitat. No Sea-ice Habitat or Barrier Island Habitat was excluded. Maps showing excluded Terrestrial Denning Habitats are available upon request by contacting the Marine Mammals Management Office; *see* the **ADDRESSES** section.

In the following sections, we address a number of general issues that are relevant to our analysis under section 4(b)(2) of the Act. In addition, we conducted an economic analysis of the impacts of the proposed critical habitat designation and related factors, which we made available for public review and comment on May 5, 2010 (75 FR 24545). Based on public comment on that document, the proposed designation itself, and the information in the final economic analysis, the Secretary may exclude from critical habitat additional areas beyond those identified in this assessment under the provisions of section 4(b)(2) of the Act. This is also addressed in our implementing regulations at 50 CFR 424.19.

*Benefits of Inclusion*

Educational Benefits

The identification of those areas that contain the features essential to the conservation of the species, or are areas that are otherwise essential for the conservation of the species if outside the geographical area occupied by the species at the time of listing, is a benefit resulting from the designation. Designation of critical habitat serves to educate landowners, State and local governments, and the public regarding the potential conservation value of an area. Because the critical habitat process includes multiple public comment periods, opportunities for public hearings, and announcements through local venues, including radio and other news sources, the designation of critical habitat provides numerous occasions for public education and involvement. Through these outreach opportunities, landowners, State agencies, and local governments can become more aware of the plight of listed species and conservation actions needed to aid in species recovery. This helps focus and promote conservation efforts by other parties by clearly delineating areas of high value for polar bears in Alaska, and may assist land owners and managers in developing conservation management plans for identified areas, as well as for any other identified occupied habitat or suitable habitat that may not be included in the areas the Service identifies as meeting the definition of critical habitat. Including lands in critical habitat also would inform State agencies and local governments about areas that could be conserved under State laws or local ordinances.

**Regulatory Benefit**

The regulatory benefits of critical habitat designation are found in section 7(a)(2) of the Act. As discussed above, section 7 requires Federal agencies to ensure that any "actions" within the meaning of the regulations (50 CFR 402.02) that the agency authorizes, funds, or carries out are not likely to destroy or adversely modify designated critical habitat. To that end, Federal agencies must consult with the Service on actions that may affect critical habitat. In addition, Federal agencies must consult with the Service on actions that may affect a listed species and the agency must refrain from undertaking actions that are likely to jeopardize the continued existence of such species. The analysis of effects to critical habitat is a separate and different analysis from that of the effects to the species. Therefore, the potential difference in outcomes of these two analyses represents the regulatory benefit of critical habitat designation. For some species, and in some locations, the outcome of these analyses will be similar, because effects to critical habitat often also will result in effects to the species. However, the regulatory standards are different, as the jeopardy analysis investigates the action's impact to survival and recovery of the species, whereas the destruction or adverse modification analysis investigates the action's effects to the designated critical habitat's contribution to conservation. This could, in some instances, lead to different results and different regulatory requirements. Thus, critical habitat designations may in some cases provide greater benefits to the recovery of a species than would listing alone.

There are two limitations to the regulatory effect of critical habitat designation. First, consultation for potential impacts to critical habitat is required only where there is a Federal nexus (*i.e.,* an action authorized, funded, or carried out by any Federal agency). If there is no Federal nexus, then the critical habitat designation of private lands, by itself, does not restrict actions by private parties that may destroy or adversely modify critical habitat, as long as the habitat modification or degradation does not actually kill or injure a listed wildlife species. Because the Act defines "take" as meaning to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct" (16 U.S.C. 1532(19)), and the regulations define "harm" to include "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" 50 CFR 17.3), habitat modification or degradation on private lands that actually kills or injures a listed wildlife species is prohibited under the Act.

Second, the designation only limits destruction or adverse modification of that habitat. By its nature, the prohibition on adverse modification of critical habitat is designed to ensure that the conservation role and function of those areas that contain the physical and biological features essential to the conservation of the species, or of unoccupied areas that are essential for the conservation of the species, are not appreciably reduced. Critical habitat designation alone does not require specific steps toward recovery of the species.

Once an agency determines that consultation under section 7(a)(2) of the Act is necessary, the process may conclude informally when the Service concurs in writing that the proposed Federal action is not likely to adversely affect the species or critical habitat. However, if we determine through informal consultation that adverse impacts are likely to occur, then formal consultation is initiated. Formal consultation concludes with a biological

opinion issued by the Service on whether the proposed Federal action is likely to jeopardize the continued existence of listed species or result in destruction or adverse modification of designated critical habitat.

A biological opinion that concludes in a determination of no destruction or adverse modification of critical habitat may recommend additional conservation measures to minimize adverse effects to the PCEs, but such measures would be discretionary on the part of the Federal agency. A biological opinion that concludes in a determination of no destruction or adverse modification would not include the implementation of any reasonable and prudent alternatives, as these are provided for the proposed Federal action only when our biological opinion results in a destruction or adverse modification conclusion.

As stated above, the designation of critical habitat does not require that any management or recovery actions take place on the lands included in the designation. Even in cases where consultation is initiated under section 7(a)(2) of the Act, the end result of consultation is to avoid jeopardy to the species and/or destruction or adverse modification of its critical habitat, but not necessarily to manage critical habitat or institute recovery actions on critical habitat. Conversely, voluntary conservation efforts implemented through management plans institute proactive actions over the lands they encompass and are put in place to remove or reduce known threats to a species or its habitat, therefore implementing recovery actions. We believe that in many instances the regulatory benefit of critical habitat is minimal when compared to the conservation benefit that can be achieved through HCPs and other habitat management plans. The conservation achieved through such plans typically is greater than what we would achieve through site-by-site or project-by-project section 7 consultations involving consideration of critical habitat. Management plans commit resources to implement long-term management and protection for at least one and possibly other listed or sensitive species. Section 7 consultations only commit Federal agencies to preventing destruction or adverse modification caused by a particular project, and they are not committed to provide conservation or long-term benefits to areas not affected by the proposed action. Thus the implementation of an HCP or a voluntary conservation or management plan that incorporates enhancement or recovery as the management standard often may provide much more benefit than a consultation for critical habitat designation.

*Economic Analysis*

In compliance with section 4(b)(2) of the Act, we conducted an economic analysis to estimate the potential economic effect of the designation. The DEA was made available for public review and comment from May 5, 2010, to July 6, 2010 (75 FR 24545). Substantive comments and information received on the DEA are summarized above in the Summary of Comments and Recommendations section and are incorporated into the final analysis, as appropriate. Taking the public comments and any relevant new information into consideration, the Service completed a final economic analysis (FEA) (dated October 14, 2010).

The primary purpose of the FEA is to identify and analyze the potential economic impacts associated with the designation of critical habitat for the polar bear in the United States. The information is intended to assist the Secretary of the U.S. Department of the Interior (DOI) in determining whether the benefits of excluding particular areas from the designation outweigh the benefits of including those areas in the designation. The economic analysis considers the economic efficiency effects that may result from the designation. In the case of habitat conservation, efficiency effects generally reflect the "opportunity costs" associated with the commitment of resources to comply with habitat protection measures (such as lost economic opportunities associated with restrictions on land use). It also addresses how potential economic impacts are likely to be distributed, including an assessment of any local or regional impacts of habitat conservation and the potential effects of conservation activities on government agencies, private businesses, and individuals. The economic analysis measures any lost economic efficiency associated with residential and commercial development and public projects and activities, such as economic impacts on water management and transportation projects, Federal lands, small entities, and the energy industry. This information can be used by the Secretary to assess whether the effects of the designation might unduly burden a particular group or economic sector. Finally, the economic analysis looks retrospectively at costs that have been incurred since the date we listed the polar bear as threatened (May 15, 2008, 73 FR 28212), and considers those costs that may occur in the years following the designation of critical habitat, with the timeframes for this analysis varying by activity.

The economic analysis focuses on the direct and indirect costs of the critical habitat designation. However, economic impacts to land use activities can exist in the absence of critical habitat. These impacts may result from, for example, local zoning laws, State and natural resource laws, and enforceable management plans and best management practices applied by other State and Federal agencies. Economic impacts that result from these types of protections are not included in the analysis as they are considered to be part of the regulatory and policy baseline.

The economic analysis examines activities taking place both within and adjacent to the critical habitat designation. It estimates impacts based on activities that are "reasonably foreseeable" including, but not limited to, activities that are currently authorized, permitted, or funded, or for which proposed plans are currently available to the public. Accordingly, the analysis bases its estimates on activities that are likely to occur within a 30-year timeframe, from when the proposed rule became available to the public (74 FR 56058, October 29, 2009). The 30-year timeframe was chosen for the analysis because, as the time horizon for an economic analysis is expanded, the assumptions on which the projected number of projects and cost impacts associated with those projects are based become increasingly speculative.

The primary potential incremental economic impacts attributed to the critical habitat designation are expected to be related to oil and gas exploration, development, and production (low-end scenario 29 percent; high-end scenario 60 percent); construction and development activities (low-end scenario 63 percent; high-end scenario 35 percent); and consultations associated with the U.S. Coast Guard and USAF (8.4 percent). The economic impacts of critical habitat designation on commercial shipping and marine transportation are highly speculative and so were not estimated. However, the impact of these activities on polar bear critical habitat was expected to be limited because polar bears occur on the sea ice in the winter and the marine shipping and transportation occurs primarily during the summer, and because oil spill planning and response already is considered under the Oil Pollution Act of 1990. The FEA estimates total potential incremental economic impacts in the areas proposed

as critical habitat over the next 30 years to range from $677,000 ($54,500 annualized) to $1,210,000 ($97,500 annualized) in present value terms using a 7 percent discount rate. While oil and gas activities are the most prevalent economic activities in the region, fewer consultations are forecast to occur for oil and gas activities than for other construction and development projects. This is because oil and gas activities are managed according to area-specific plans and regulations (such as the ITRs). Thus, a single consultation occurs for review of a plan or program covering multiple projects. Although administrative costs of programmatic consultations for oil and gas activities are expected to be greater than consultations for other types of activities, the greater number of forecast consultations for other activities results in greater associated impacts in the low-end scenario. In the high-end scenario, the analysis assumes a third-party administrative cost of $37,500 per formal or programmatic consultation. This cost estimate relies on information provided by stakeholders and reflects the complex nature of consultations for oil and gas projects in Alaska. According to the high-end scenario, oil and gas activities experience the greatest incremental impacts of the designation.

Approximately 41 to 70 percent, depending on the scenario, of the forecasted incremental impacts occur in Units 2 and 3, in spite of the fact that Units 2 and 3 account for only about 5 percent of the total area designated as critical habitat. Forecasted activities for the sea ice habitat (Unit 1) generally are covered by large-scale plans and regulations (e.g., ITRs) and therefore are subject to less frequent consultation.

We have considered and evaluated the potential economic impact of the critical habitat designation under 4(b)(2) of the Act, as identified in the FEA. Based on this evaluation, we believe the economic impacts associated with the designation here are neither significant nor will result in a disproportionate effect due to the manner in which polar bear conservation measures have been or are are expected to be through the MMPA and Act. The final economic analysis is available at *http://www.regulations.gov* or upon request from the Marine Mammals Management Office (*see* **ADDRESSES**).

*Exclusions Based on National Security Impacts*

Under section 4(b)(2) of the Act, we consider whether there are impacts to national security that may exist from the designation of critical habitat. Section 4(b)(2) allows the Secretary to exclude areas from critical habitat for reasons of national security if the Secretary determines the benefits of such an exclusion exceed the benefits of designating the area as critical habitat. However, this conclusion cannot occur if it will result in the extinction of the species concerned.

The USAF request for exclusion of the DOD lands for Active and Inactive Radar Sites in Alaska was based in part on the critical role of these sites as part of the Alaska Radar System in support of the Alaska NORAD Region and Homeland Defense to detect, track, report, and respond to potentially hostile aircraft approaching our borders and entering our airspace. Only one Inactive Radar Site, Point Lonely (former SRRS), and four Active Radar Sites, Point Barrow LRRS, Oliktok LRRS, Bullen Point LRRS, and Barter Island LRRS, overlap with the polar bear critical habitat designation. The Secretary has exempted these five Radar Sites from the polar bear critical habitat designation under section 4(a)(3) of the Act (*see Application of Section 4(a)(3) of the Act* above), and there are no additional DOD lands operated by the USAF that would be considered for exclusion under 4(b)(2) of the Act.

**Exclusions Based on Other Relevant Impacts**

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security. We consider a number of factors including whether the landowners have developed any HCPs for the area, or whether there are conservation partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at any tribal issues, and consider the government-to-government relationship of the United States with tribal entities. We also consider any social impacts that might occur because of the designation. There are no HCPs in Alaska for the polar bear or any other listed species; therefore, we have not excluded any lands on the basis of being part of an HCP.

*Tribal Lands—Exclusions Under Section 4(b)(2) of the Act*

In accordance with the President's memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments" (59 FR 22951); Executive Order 13175; and the relevant provision of the Departmental Manual of the Department of the Interior (512 DM 2), we coordinate with federally recognized Tribes on a government-to-government basis. Further, Secretarial Order 3206, "American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act" (1997) states that (1) critical habitat shall not be designated in areas that may impact tribal trust resources, may impact tribally-owned fee lands, or are used to exercise tribal rights unless it is determined essential to conserve a listed species; and (2) in designating critical habitat, the Service shall evaluate and document the extent to which the conservation needs of the listed species can be achieved by limiting the designation to other lands. While this Order does not apply to the State of Alaska, we recognize our responsibility to inform affected Native Corporations, and regional and local Native governments of our proposed critical habitat designation. During the open comment periods, we coordinated extensively with Native communities; sought traditional Native knowledge; and contacted numerous individuals in the rural communities. We also held public meetings that were attended by Alaska Natives. In addition, in 2001, the DOI issued a "Policy on Government-to-Government Relations with Alaska Native Tribes" to clarify Secretarial Order 3206 in relation to the consultative process for Alaska Natives.

Habitat on Alaska Native-owned lands was determined to be essential to the conservation of polar bears due to its location within the matrix of habitat available for the species. Alaska Native lands overlap primarily with the Barrier Island Habitat (18 percent) and the Terrestrial Denning Habitat (6 percent). The coastal barrier islands provide areas free from disturbance for resting, denning, and access to maternal den sites or optimal feeding areas. Polar bears frequently use the coastal bluffs and river bluffs for denning and move along the coast to search for maternal den sites and preferred feeding areas.

Through the Government Relations with Native American Tribal Governments (59 FR 22951), E.O. 13175, and the Department of the Interior's manual at 512 DM 2, we acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3225 of January 19, 2001 (Endangered Species Act and Subsistence Uses in Alaska (Supplement to Secretarial Order 3206)), Department of the Interior Memorandum of January 18, 2001 (Alaska Government-to-Government Policy), and the Native American Policy of the U.S. Fish and Wildlife Service, June 28, 1994, we acknowledge our responsibilities to work directly with

Alaska Natives in developing programs for healthy ecosystems, to seek their full and meaningful participation in evaluating and addressing conservation concerns for listed species, to remain sensitive to Indian culture, and to make information available to Tribes.

We contacted all Alaska Native communities potentially affected by the proposed designation and met with the Alaska Nanuuq (polar bear) Commission and the North Slope Borough to discuss their ongoing or future management strategies for polar bear. We subsequently received comments describing ongoing tribal management concerns, and plans and conservation efforts with respect to polar bears. Barrow and Kaktovik are the only two Alaska Native communities that overlap with the proposed critical habitat designation.

(1) Benefits of Inclusion

The primary effect of designating critical habitat is the requirement for Federal agencies and any projects with a Federal nexus to consult with the Service under section 7 of the Act to ensure that actions they authorize, fund, or carry out do not destroy or adversely modify designated critical habitat. A discussion of these regulatory benefits was presented earlier. Additionally, the designation of critical habitat may provide educational benefits by informing land managers of areas that are essential to polar bears.

Educational Benefits

The identification of those areas that contain the features essential to the conservation of the species, or are otherwise essential for the conservation of the species if outside the geographical area occupied by the species at the time of listing, is a benefit resulting from the designation. Designation of critical habitat serves to educate landowners, State and local governments, and the public regarding the potential conservation value of an area. Because the critical habitat process includes multiple public comment periods, opportunities for public hearings, and announcements through local venues, including radio and other news sources, the designation of critical habitat provides numerous occasions for public education and involvement. Through these outreach opportunities, land owners, State agencies, and local governments can become more aware of the plight of listed species and conservation actions needed to aid in species recovery. This helps focus and promote conservation efforts by other parties by clearly delineating areas of high value for polar bears in Alaska, and may assist land owners and managers in developing conservation management plans for identified areas, as well as for any other identified occupied habitat or suitable habitat that may not be included in the areas the Service identifies as meeting the definition of critical habitat. Including lands in critical habitat also would inform State agencies and local governments about areas that could be conserved under State laws or local ordinances.

(2) Benefits of Exclusion

For the past 30 years or more, the Service has been working actively with the North Slope Borough and Alaska Native communities on issues that deal with subsistence use and polar bear conservation. Examples include:

- The Native to Native Inuvialuit (Canada)/Inupiat (Alaska) Agreement (I/I Agreement) for management and conservation of the southern Beaufort Sea population;
- Establishment of the Alaska Nanuuq (polar bear) Commission under the MMPA, which represents Alaska Native interests on issues concerning subsistence use and polar bear conservation;
- Development of the U.S.-Russia Bilateral Agreement for the Conservation of the Chukotkan Alaska Polar Bear Population, which includes Native and Government representatives from both countries;
- Development of bear-human interaction plans for the North Slope Borough communities;
- Development of polar bear viewing guidelines for Kaktovik; and
- Development of polar bear deterrence guidelines and training.

In addition, Native communities, which consist of relatively dense core areas of human habitation in remote locations along the northern and western coasts of Alaska, generally do not have the necessary PCEs for polar bear denning, resting, and feeding. Children and adults can be active during all the daylight hours in the summer and during the periods of complete darkness in the winter. Polar bears are actively deterred from the Native communities for both human and bear safety. Typically polar bears that remain too long in these communities are killed because of concerns for human safety. To minimize negative bear-human interactions and intentional or unintentional disturbance by humans, polar bears are actively deterred from denning in or near the Native coastal communities. Polar bear interaction plans, deterrence programs, safety guidelines, and outreach continue to be developed in cooperation with the Native communities.

The continued cooperation with the Native communities in northern and western Alaska is essential for the conservation of polar bears in Alaska. Excluding the Native-owned lands for these two villages will enhance the partnership efforts which have taken many years to develop between the Federal government and the Native communities.

(3) Determination of Whether Benefits of Exclusion Outweigh the Benefits of Inclusion

We find that the benefits of designating critical habitat for polar bears on the Native-owned town sites of Barrow and Kaktovik are small compared to the benefits of exclusion. The conservation measures being implemented by these Native communities and organizations working on behalf of these Native communities provide greater benefit to polar bears and their habitat than would designating critical habitat in these communities. The residents of these communities have subsisted on, and lived with polar bears for thousands of years and thus understand polar bear behavior and conservation efforts required to protect polar bears. Both the Service and these Native communities share the same goal of protecting polar bears for future generations to use and enjoy. Excluding the Native-owned lands of these two villages will enhance the partnership efforts that have taken many years to develop between the Federal Government and the Native communities. The benefit of sustaining current and future partnerships outweighs the extra outreach efforts associated with critical habitat and the additional section 7 requirements under the Act. Therefore, the Secretary has decided to exercise his discretion under the Act to exclude the Native communities of Barrow and Kaktovik, which are the two formally defined Native coastal communities that overlap with the polar bear critical habitat designation. Since the critical habitat designation for polar bear includes other Alaska Native-owned lands or trust resources that might be affected by costs associated with section 7 consultations on construction and development projects that have a Federal nexus, we will continue to cooperate with Alaska Native communities in a government-to-government relationship.

(4) Exclusion Will Not Result in Extinction of the Species

We have determined that the exclusion of the Native communities of

Barrow and Kaktovik from the final designation of critical habitat for the polar bear will not result in the extinction of the species. As previously explained, the benefits of excluding 5,698 ha (14,080 ac) of land from critical habitat outweigh the benefits of inclusion. The area excluded comprises an extremely small fraction of the designation (less than one percent of the total designation and 0.38 percent of the Terrestrial Denning Habitat Unit). While some loss of habitat for the polar bear may occur, this habitat loss will not lead to extinction because the proportion of area excluded compared to the overall amount of terrestrial denning habitat is extremely small, furthermore, due to ongoing efforts to minimize polar bear/human interactions, polar bears are routinely hazed away from these villages. [need to elaborate here]\ With these facts, and the continued commitment from the villages to work with us on polar bear conservation and consult with us on projects that may adversely impact polar bears, we conclude that exclusion of these villages will not result in extinction of this species. In addition, the jeopardy standard of section 7 of the Act and routine implementation of conservation measures through the section 7 process provide assurances that the species will not go extinct as a result of this small exclusion.

**Required Determinations**

*Regulatory Planning and Review—Executive Order 12866*

Executive Order 12866 requires Federal agencies to submit proposed and final significant rules to the Office of Management and Budget (OMB) prior to publication in the **Federal Register.** The Executive Order defines a rule as significant if it meets one of the following four criteria:

(1) Whether the rule will have an annual effect of $100 million or more on the economy or adversely affect an economic sector, productivity, jobs, the environment, or other units of the government.

(2) Whether the rule will create inconsistencies with other Federal agencies' actions.

(3) Whether the rule will materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients.

(4) Whether the rule raises novel legal or policy issues.

If the rule meets criteria (1) above it is called an "economically significant" rule and additional requirements apply. It has been determined that this rule is "significant" but not "economically significant." It was submitted to OMB for review prior to promulgation.

*Regulatory Flexibility Act*

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq.,* as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency must publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Based on our FEA, we provide our analysis for determining whether or not the designation of critical habitat for polar bears in Alaska will result in a significant impact on a substantial number of small entities.

According to the Small Business Administration, small entities include small organizations, such as independent nonprofit organizations, and small governmental jurisdictions including school boards and city and town governments that serve fewer than 50,000 residents, as well as small businesses (13 CFR 121.201). Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than $5 million in annual sales, general and heavy construction businesses with less than $27.5 million in annual business, special trade contractors with less than $11.5 million in annual business, and agricultural businesses with annual sales less than $750,000. To determine if potential economic impacts to these small entities are significant, we considered the types of activities that might trigger regulatory impacts under this designation, as well as types of project modifications that may result. In general, the term "significant economic impact" is meant to apply to a typical small business firm's business operations.

To determine if the designation of critical habitat for polar bears in Alaska will affect a substantial number of small entities, we considered the number of small entities affected within particular types of economic activities, such as oil and gas exploration and development, and other construction and development activities. Specifically, we identified 112 small entities that may be affected by these activities:

- Gold ore mining (5);
- Support activities for oil and gas operations (13);
- Support activities for mining (1);
- Electric power generation (7);
- Water supply and irrigation, (3);
- Construction of buildings (29);
- Water and sewer line construction (3);
- Oil and gas pipeline and related structures construction (5);
- Highway, street, or bridge construction (3);
- Specialty trade contractors (31);
- Other airport operations (6);
- Other support activities for air transportation (1);
- Support activities for rail transportation (1);
- Support activities for road transportation (2);
- All other support activities for transportation (2).

In estimating the numbers of small entities potentially affected, we considered whether the activities of these entities may entail any Federal involvement. Critical habitat designation will not affect activities that do not have any Federal involvement.

Designation of critical habitat only affects activities conducted, funded, permitted, or authorized by Federal agencies. Some kinds of activities are unlikely to have any Federal involvement and so will not be affected by the designation of critical habitat. In areas where the species is present, Federal agencies already are required to consult with us under section 7 of the Act on activities they authorize, fund, or carry out that may affect the polar bear. Federal agencies also must consult with us if their activities may affect designated critical habitat. Designation of critical habitat, therefore, could result in an additional economic impact on small entities due to the requirement to reinitiate consultation for ongoing Federal activities (*see* Application of the "Adverse Modification" Standard section).

In order to determine whether it is appropriate for our agency to certify that this rule will not have a significant economic impact on a substantial number of small entities, we considered in the FEA the potential impacts resulting from implementation of conservation actions related to the designation of critical habitat for polar bears in Alaska for each of the 112 small entities discussed above. As described in Appendix A of the FEA, the potential impacts are associated with: (1) Oil and gas exploration, development, and production, and (2) construction and development activities. The average

annualized incremental impacts to small entities associated with the oil and gas exploration, development, and production ranges from $1,050 to $45,000 and for construction and development activities was $9,290, applying a 7 percent discount rate. Third parties involved in the former category are not likely to be small. Based on the past polar bear consultations regarding oil and gas activities, we expect that third party participants in consultations will be the large oil and gas companies operating in the region, such as Shell, ExxonMobil, Conoco Phillips, and British Petroleum. These companies exceed the 500-employee threshold for small crude petroleum and natural gas extraction, natural gas liquid extraction, and drilling oil and gas well businesses, as defined by the SBA. Third parties involved in the latter category, construction and development activities, are likely to be small, however. Construction and development activities include wind energy development, utility line construction, road maintenance and construction, airport and seaport development and expansion, and mining (not including oil and gas). Third parties involved in future section 7 consultations for construction and development projects therefore may include local governments, residential construction companies, heavy and civil engineering companies, specialty trade contractors, mining companies (not including oil and gas), utility companies, developers, and transportation companies. Exhibit A–1 of the DEA highlights that about 85 percent of these industry businesses in the proposed critical habitat region are small. It therefore is likely that small entities will bear the estimated annualized incremental administrative costs of consultation of $9,290. To put this number into context, the average value of construction work in Alaska is about $1.9 million per construction business (2002 U.S. Census Summary Statistics for NAICS 23 (Construction) in Alaska, accessed at *http://www.census.gov/econ/census02/data/ak/AK000.HTM*). Importantly, this estimate includes all construction businesses across the State, inclusive of but not limited to small businesses in the North Slope. These data are not available at the borough level. The annualized impacts estimated in the economic analysis represent about 0.5 percent of the per business value of construction in the State of Alaska. We therefore conclude that costs to small entities are not anticipated to be significant. Please refer to the FEA for a more detailed discussion of potential economic impacts.

In summary, we have considered whether the designation will result in a significant economic impact on a substantial number of small entities. We have identified 112 small entities that may be impacted by the critical habitat designation. For the above reasons and based on currently available information, we certify that the designation will not have a significant economic impact on a substantial number of small business entities. Therefore, a regulatory flexibility analysis is not required.

*Unfunded Mandates Reform Act*

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), we make the following findings:

(a) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or Tribal governments, or the private sector, and includes both "Federal intergovernmental mandates" and "Federal private sector mandates." These terms are defined in 2 U.S.C. 658(5)–(7). "Federal intergovernmental mandate" includes a regulation that "would impose an enforceable duty upon State, local, or [T]ribal governments" with two exceptions. It excludes "a condition of Federal assistance." It also excludes "a duty arising from participation in a voluntary Federal program," unless the regulation "relates to a then-existing Federal program under which $500,000,000 or more is provided annually to State, local, and [T]ribal governments under entitlement authority," if the provision would "increase the stringency of conditions of assistance" or "place caps upon, or otherwise decrease, the Federal Government's responsibility to provide funding," and the State, local, or Tribal governments "lack authority" to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; AFDC work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. "Federal private sector mandate" includes a regulation that "would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program."

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions are not likely to destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(b) We do not believe that this rule will significantly or uniquely affect small governments. The vast majority (99 percent) of the critical habitat designation falls within Federal or State of Alaska jurisdiction. The State of Alaska does not fit the definition of "small governmental jurisdiction." Waters adjacent to Native-owned lands are still owned and managed by the State of Alaska. In most cases, development around Native villages, or in the North Slope Borough, occurs with funding from Federal or State sources (or both). Therefore, a Small Government Agency Plan is not required.

*Takings*

In accordance with E.O. 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential takings implications of designating critical habitat for the polar bear in the United States in a takings implications assessment. Critical habitat designation does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. The takings implications assessment concludes that this designation of critical habitat for the polar bear in the United States does not pose significant takings implications for lands within or affected by the designation.

*Federalism*

In accordance with E.O. 13132 (Federalism), this final rule does not have significant Federalism effects. A Federalism assessment is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of, this final critical habitat designation with appropriate State resource agencies in Alaska and Tribal governments. The designation may have some benefit to these governments because the areas that contain the features essential to the conservation of the species are more clearly defined, and the physical and biological features of the habitat essential for the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist local governments in long-range planning (rather than having them wait for case-by-case section 7 consultations to occur).

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) would be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

*Civil Justice Reform*

In accordance with E.O. 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Executive Order. We have designated critical habitat in accordance with the provisions of the Act. This final rule identifies the essential features within the designated areas to assist the public in understanding the habitat needs of the polar bear in the United States, and defines the specific geographic areas designated as critical habitat for the polar bear in the United States.

*Paperwork Reduction Act of 1995*

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

*National Environmental Policy Act (NEPA)*

It is our position that, outside the jurisdiction of the Circuit Court of the United States for the Tenth Circuit, we do not need to prepare environmental analyses as defined by NEPA (42 U.S.C. 4321 *et seq.*) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This assertion was upheld by the Circuit Court of the United States for the Ninth Circuit (*Douglas County* v. *Babbitt,* 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

*Government-to-Government Relationship With Tribes*

In accordance with the President's memorandum of April 29, 1994, Government-to-Government Relations with Native American Tribal Governments (59 FR 22951), E.O. 13175, and the Department of the Interior's manual at 512 DM 2, we acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3225 of January 19, 2001 (Endangered Species Act and Subsistence Uses in Alaska (Supplement to Secretarial Order 3206)), Department of the Interior Memorandum of January 18, 2001 (Alaska Government-to-Government Policy), and the Native American Policy of the U.S. Fish and Wildlife Service, June 28, 1994, we acknowledge our responsibilities to work directly with Alaska Natives in developing programs for healthy ecosystems, to seek their full and meaningful participation in evaluating and addressing conservation concerns for listed species, to remain sensitive to Alaskan Native culture, and to make information available to Tribes.

Since 1997, the Service has worked closely with the Alaska Nanuuq Commission (Commission) on polar bear management and conservation for subsistence purposes. The Commission, established in 1994, is a Tribally Authorized Organization created to represent the interests of subsistence users and Alaska Native polar bear hunters when working with the Federal Government on the conservation of polar bears in Alaska. Not only was the Commission kept fully informed throughout the rulemaking process for the listing of the polar bear as a threatened species, but that organization was asked to serve as a peer reviewer of the proposed critical habitat designation. Following publication of the proposed critical habitat rule, the Service actively solicited comments from Alaska Natives living within the range of the polar bear. We held a public hearing in Barrow, Alaska, to enable Alaska Natives to provide oral comment. We invited the 15 villages in the Commission to participate in the hearing, and we offered the opportunity to provide oral comment via teleconference.

For the critical habitat areas that occur within sea-ice Unit (Unit 1), we have determined that there are no Alaska Native-owned lands occupied at the time of listing that contain the features essential for the conservation, and no Alaska Native-owned lands essential for the conservation of polar bears in the United States. With regard to the areas of proposed designation of critical habitat on Alaska Native-owned lands in Alaska, we reported to the Alaska Nanuuq Commission in August 2009 on the process of evaluating critical habitat for polar bears in Alaska. During this meeting, we explained what critical habitat is and that, if designated, special management considerations may be needed for the features determined to be essential to the species. We noted our appreciation of their past participation and comments in our evaluation through the listing determination, and noted our intention to hold public hearings in Barrow and Anchorage, Alaska, in conjunction with any proposed designation. Following the release of the proposed critical habitat designation on October 29, 2009 (74 FR 56058), we attempted to notify all potentially affected Native communities and local and regional governments, and we requested comments on the proposed rule. In response to a specific request by the North Slope Borough, we presented information on the polar bear critical habitat on March 1, 2010, in Barrow, Alaska. At that meeting, attendees were given the opportunity to comment on the proposal. As noted earlier, we published notices in the **Federal Register** on May 5, 2010 (75 FR 24545), announcing the proposed designation of critical habitat, the availability of the draft economic analysis, and another 60-day comment period. We also notified the primary communities located within the range of

polar bear in Alaska by mail of the opportunity to provide oral or written comments prior to public hearings we held in Anchorage on June 15, 2010, and Barrow on June 17, 2010. In addition, the Alaska Nanuuq Commission, which represents Alaska Native interests concerning the conservation and subsistence use of polar bears, assisted in notifying the villages about the proposed critical habitat designation through their village representatives. We responded to all requests for additional information from various organizations and communities before and after submitting the proposed rule to designate critical habitat to the **Federal Register** on October 29, 2009. Additionally, we do not anticipate that this final designation of critical habitat will have an effect on Alaska Native activities especially as they may pertain to subsistence activities.

*Energy Supply, Distribution, or Use*

On May 18, 2001, the President issued an Executive Order (E.O. 13211; Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) on regulations that significantly affect energy supply, distribution, and use. E.O. 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. We do not expect this critical habitat designation to significantly affect energy supply, distribution, or use.

Oil and gas activities have been conducted in the Beaufort and Chukchi Seas since the late 1960s. A majority of the oil and gas development has occurred on land adjacent to the Beaufort Sea, although offshore development is expanding. In February 2008, 1,116,315 ha (2,758,377 ac) located offshore of Alaska from Point Barrow to northwest of Cape Lisburne were leased as part of Chukchi Sea Lease Sale 193. This lease sale area starts approximately 40–80 km (25–50 mi) from shore and extends out to 321 km (200 mi) offshore. In addition, in September 2009, the Service completed a biological opinion on the MMS' proposed lease sales and associated seismic surveys and exploratory drilling in the Beaufort and Chukchi Seas program area. Exploration and development are projected to occur in the Beaufort Sea and Chukchi Sea Program Areas, which are a subset of the larger Beaufort and Chukchi Seas Planning Areas. The Beaufort Sea Program Area includes approximately 13.4 million ha (33.2 million ac) of the Beaufort Sea from Barrow east to the United States-Canada border. The Chukchi Sea Program Area covers approximately 16.3 million ha (40.2 million ac) of the Chukchi Sea from the United States-Russia Maritime border west of Point Hope to the edge of the Beaufort Sea Program Area at Barrow. Most of the onshore and offshore areas currently associated with active or proposed oil and gas activities overlap with the critical habitat areas. Any proposed development project likely would have to undergo section 7 consultations to ensure that the actions are not likely to destroy or adversely modify designated critical habitat. Consultations may result in modifications to the project to minimize the potential adverse effects to polar bear critical habitat.

The Service has been working with the oil and gas industry for many years in order to accommodate both project and species' needs under the authorities of the MMPA. For example, more restrictive provisions associated with incidental take regulations under the MMPA (see our detailed discussion under Special Management Considerations or Protection), have been developed for both the Chukchi and Beaufort Seas and provide a framework to minimize any adverse bear-human interactions associated with the oil and gas industry. We do not believe that the critical habitat designation will provide any new and significant effects on energy supply, distribution, or use. Although the future will have many challenges, we expect to be able to work cooperatively with oil and gas operators to minimize any adverse anthropogenic effects to polar bears and their habitat. Therefore, we do not believe this action is a significant energy action, and no Statement of Energy Effects is required.

**References Cited**

A complete list of all references cited in this rulemaking is available at *http://regulations.gov,* or upon request from the Field Supervisor, Marine Mammals Management Office (*see* **FOR FURTHER INFORMATION CONTACT**).

**Author(s)**

The primary authors of this package are the staff members of the Marine Mammals Management Office, U.S. Fish and Wildlife Service, 1011 East Tudor Road, Anchorage, AK 99503.

**List of Subjects in 50 CFR Part 17**

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

**Regulation Promulgation**

■ Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

## PART 17—[AMENDED]

■ 1. The authority citation for part 17 continues to read as follows:

**Authority:** 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

■ 2. In § 17.11(h), revise the entry for "Bear, polar" under "MAMMALS" in the List of Endangered and Threatened Wildlife to read as follows:

**§ 17.11 Endangered and threatened wildlife.**

* * * * *

(h) * * *

| Species | | Historic range | Vertebrate population where endangered or threatened | Status | When listed | Critical habitat | Special rules |
|---|---|---|---|---|---|---|---|
| Common name | Scientific name | | | | | | |
| MAMMALS. | | | | | | | |
| * | * | * | * | * | * | | * |
| Bear, polar | *Ursus maritimus* | U.S.A. (AK), Canada, Russia, Denmark (Greenland), Norway. | Entire | T | 781 | 17.95(a) | 17.40(q) |
| * | * | * | * | * | * | | * |

3. In § 17.95, amend paragraph (a) by adding an entry for "Polar Bear (*Ursus maritimus*) in the United States" in the same alphabetical order that the species appears in the table at § 17.11(h), to read as follows:

**§17.95 Critical habitat—fish and wildlife.**

(a) *Mammals.*

* * * * *

Polar Bear (*Ursus maritimus*) in the United States

(1) Critical habitat areas are in the State of Alaska, and adjacent territorial and U.S. waters, as described below.

(2) The primary constituent elements of critical habitat for the polar bear in the United States are:

(i) 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.

(ii) 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.

(iii) 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).

(3) 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.

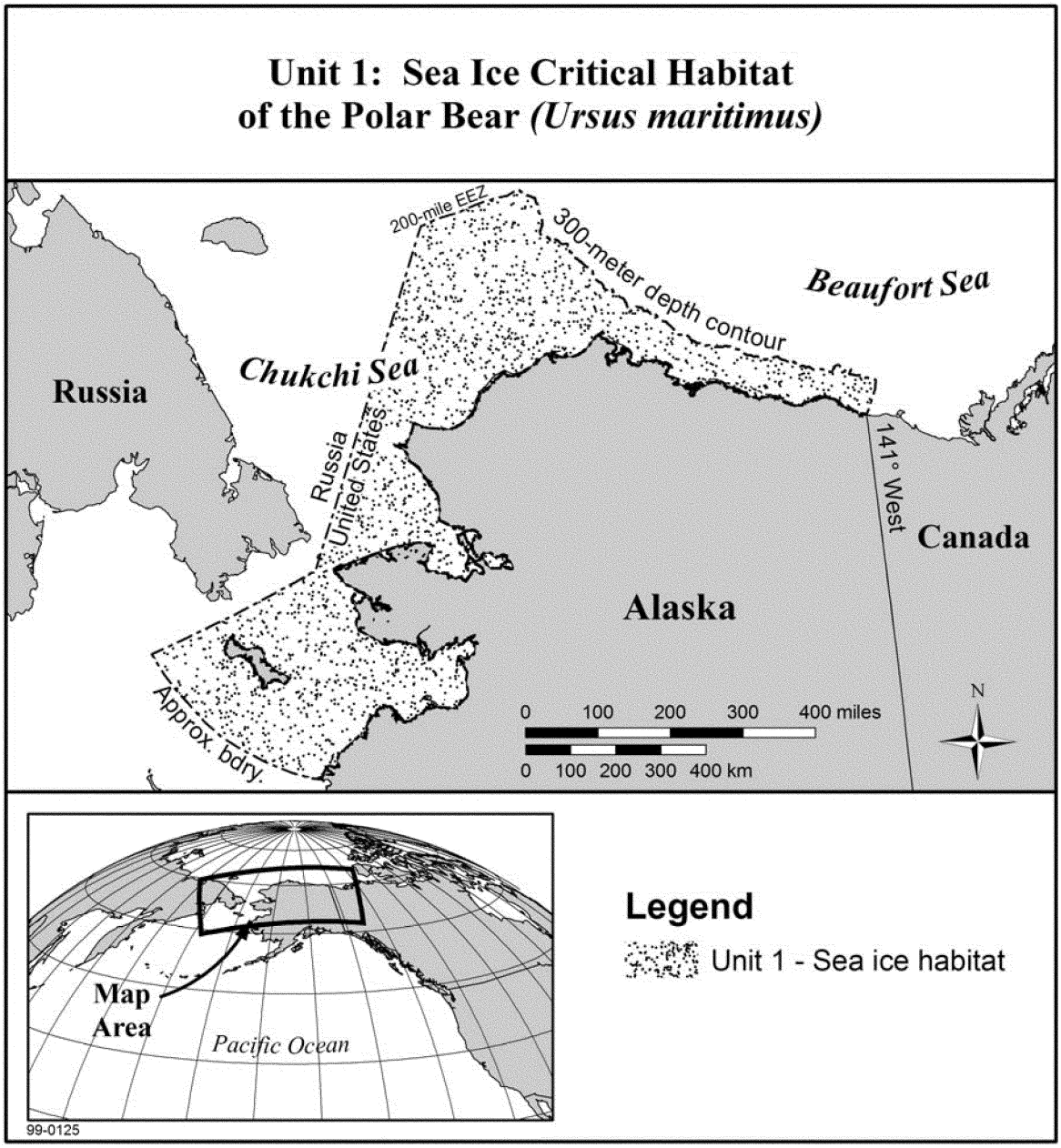
(4) *Critical habitat map units.* Boundaries were derived from GIS data layers of the 1:63,360 scale digital coastline of the State of Alaska, created by the Alaska Department of Natural Resources from U.S. Geological Survey inch-to-the-mile topographic quadrangles. The International Bathymetric Chart of the Arctic Ocean, version 2.3, was used for the bathymetric data. The maritime boundaries to generate the 3-mile nautical line, U.S. territorial boundary, and Exclusive Economic Zone were from the National Oceanic and Atmospheric Administration's Office of Coast Survey Web site. The land status and ownership information at the section level scale was from the Alaska Department of Natural Resources, and was obtained from the Alaska State Office of the Bureau of Land Management. The detailed parcel-level land status was created by the U.S. Fish and Wildlife Service, Division of the Realty, by digitizing U.S. Bureau of Land Management Master Title Plots. The detailed denning habitat maps and the internal boundaries for the terrestrial denning habitat were provided by the U.S. Geological Survey, Alaska Science Center. The data were projected into Alaska Standard Albers Conical Equal Area using the North American Datum of 1983 to estimate the area of each critical habitat unit and determine overlap with land and water ownership.

(5) Unit 1: Sea-ice habitat.

(i) The critical sea-ice habitat area includes all the contiguous waters from the mean high tide line of the mainland coast of Alaska to the 300-m (984.2-ft) bathymetry contour. The critical sea-ice habitat is bounded on the east by the United States-Canada border (69.64892°N, 141.00533°W) and extends along the coastline to a point southwest of Hooper Bay (61.52859°N, 166.15476°W) on the western coast of Alaska. The eastern boundary extends offshore approximately 85 km (136 mi) from the coast (70.41526°N, 141.0076°W) at the United States-Canada border and then follows the 300-m (984.2-ft) bathymetry contour northwest until it intersects with the U.S. 200-nautical-mile EEZ (74.01403°N, 163.52341°W). The boundary then follows the EEZ boundary southwest to the intersection with the United States-Russian boundary (72.78333°N, 168.97694°W). From this point, the boundary follows the United States-Russia boundary south and southwest to the intersection with the southern boundary of the Chukchi-Bering Seas population southwest of Gambell, St Lawrence Island (62.55482°N, 173.68023°W). From this point, the boundary extends southeast to the coast of Alaska (61.52859°N, 166.15476°W).

(ii) The map of Unit 1, sea-ice habitat, follows:

BILLING CODE 4310–55–P




(6) Unit 2: Terrestrial denning habitat.

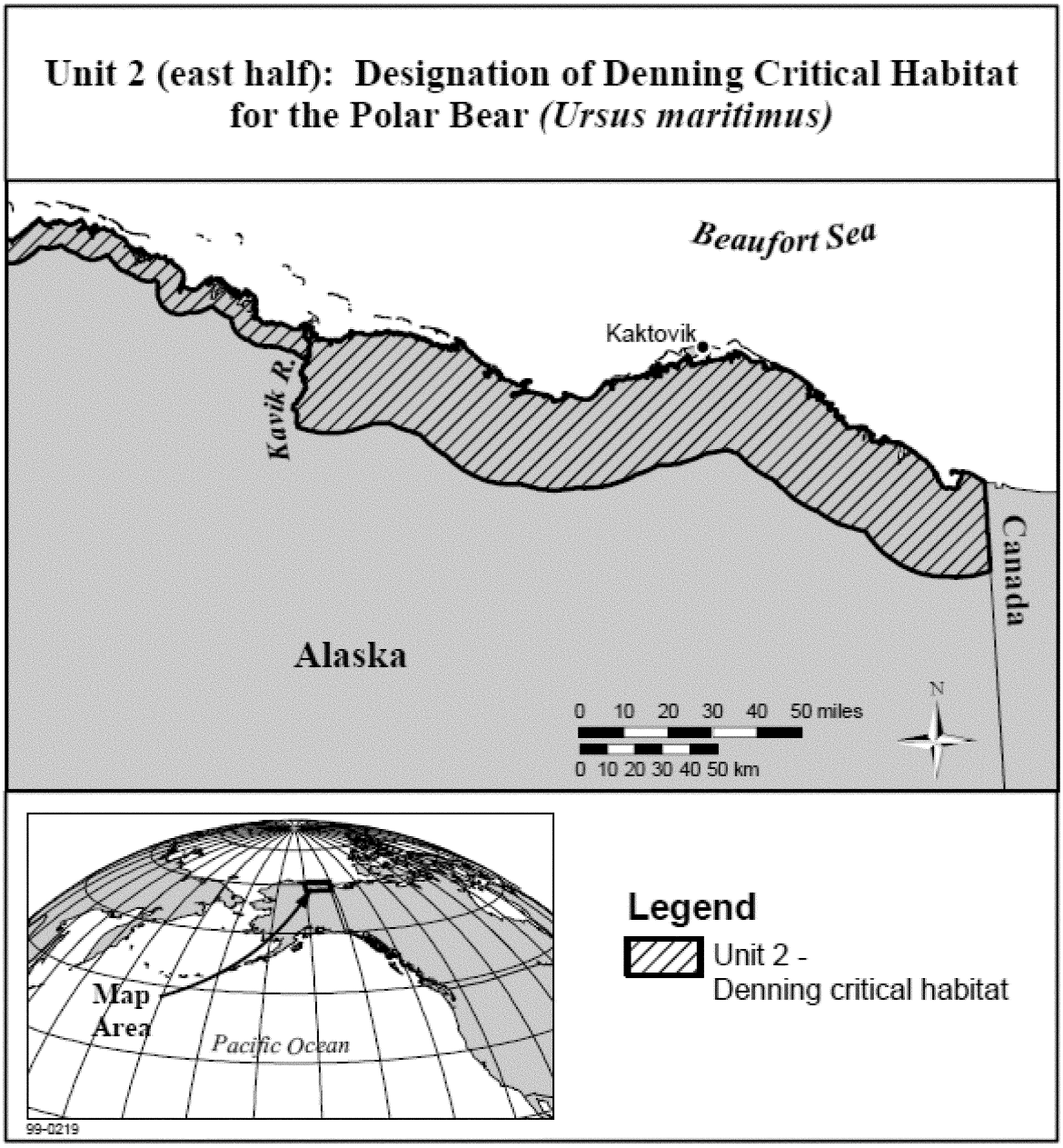
(i) The critical terrestrial denning habitat area extends from the mainland coast of Alaska 32 kilometers (20 mi) landward (primarily south) from the United States-Canada border to the Kavik River to the west. From the Kavik River to Barrow, the critical terrestrial denning habitat extends landward 8 kilometers (5 mi) south from the mainland coast of Alaska.

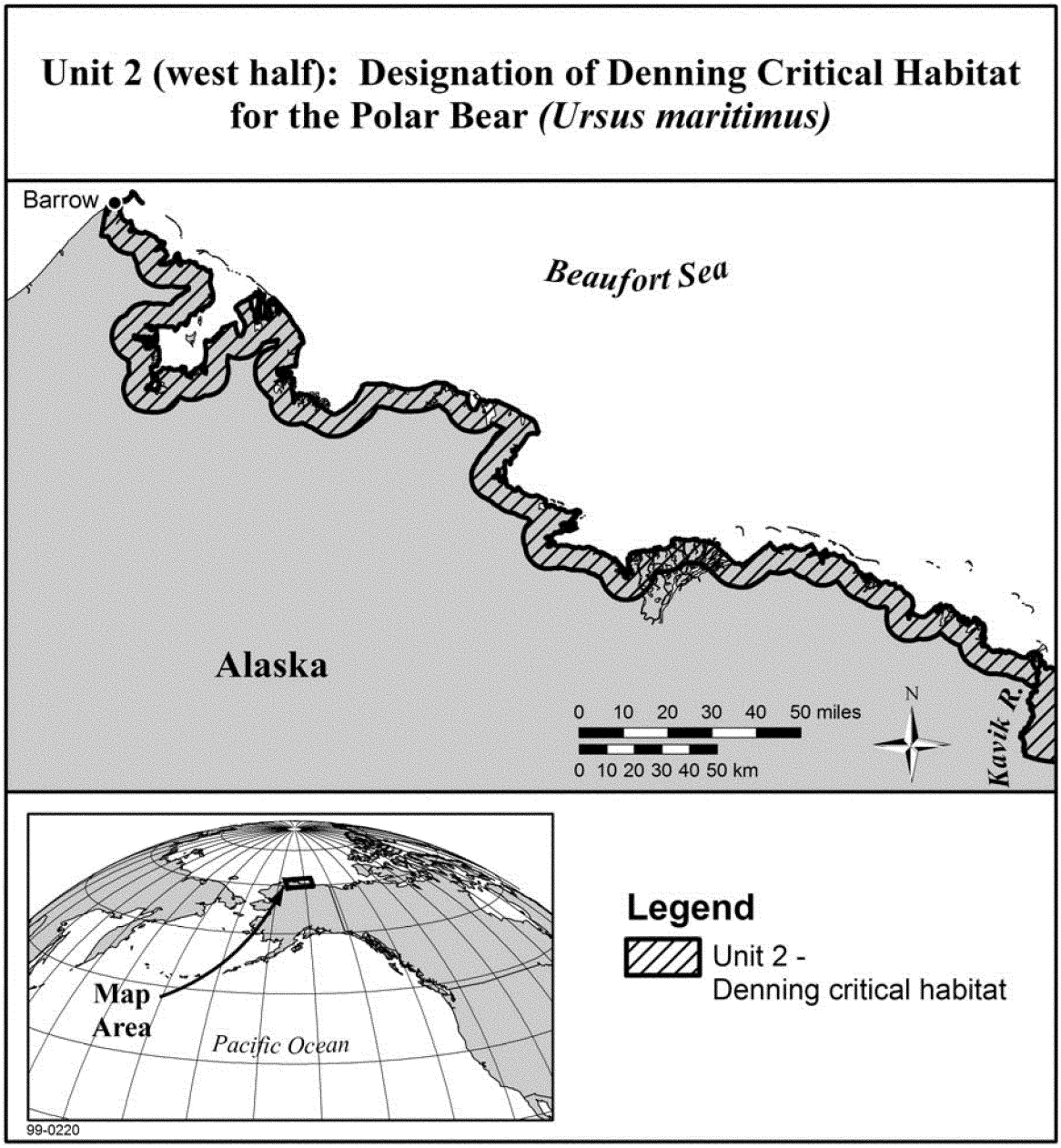
(ii) The village district of Barrow is excluded from the critical terrestrial denning habitat area. The excluded area is delineated as follows: Beginning at the southeast corner of the northeast ¼ of Section 29, Unsurveyed T22N, R18W, Umiat Meridian, Alaska; thence North to the southeast corner of the northeast ¼ of Section 17, Unsurveyed T22N, R18W; thence East to the southeast corner of the northeast ¼ of Section 16, Unsurveyed T22N, R18W, Umiat Meridian, Alaska; thence North to the northeast corner of Section 16, Unsurveyed T22N, R18W; thence East to the southeast corner of southwest ¼ of Section 10, Unsurveyed T22N, R18W; thence North to the northwest corner of the southwest ¼ of northeast ¼ of Section 34, Unsurveyed T23N, R18W; thence East to the southeast corner of the northeast ¼ of the northeast ¼ of Section 34, Unsurveyed T23N, R18W; thence North to the point where the section line common to Sections 14 and 15, Unsurveyed T23N, R18W; intersects the mean low water line of the Chukchi Sea; thence in a southwesterly direction along the mean low water line of the Chukchi Sea to the point where the mean low water line of the Chukchi Sea intersects the east-west center line of Section 27, Unsurveyed T22N, R19W; thence East to the point of beginning, containing 21 square miles, more or less. You can view legal descriptions and detailed, colored maps of the exclusions in this final rule at *http://alaska.fws.gov/fisheries/mmm/polarbear/criticalhabitat.htm.*

(iii) The village district of Kaktovik is excluded from the critical terrestrial denning habitat area. The excluded area is delineated as follows: From the P.O.B. (which is also the point of beginning for the U.S. Survey No. 4234) at

approximately 2,828 feet distant on a bearing of N 01° 40′ E from Tri. Sta. U. S. C. and G. S. "Barter Astro"; the boundary thence shall run West for approximately 325′; thence South approximately 600′; thence West approximately 500′; thence South approximately 100′; thence West approximately 4,000′; thence South approximately 3,550′; thence East approximately 4,000′; thence in a northeasterly direction approximately 3,225′ to a point on the mean high water line of the Kaktovik Lagoon which is approximately 2,478′ distant on a bearing S 78°53′ E from Tri. Sta. U. S. C. and G. S. "Barter Astro"; thence northerly along the meandering mean high water line of the Kaktovik Lagoon, around Pipsuk Point, and westerly continuing on the meandering mean high water line to a point on the mean high water line of the Kaktovik Lagoon which is approximately 477′ distant on a bearing of N 88°58′ E from another point which is approximately 1,503′ distant on a bearing of N 01°24′ W from the point of beginning; thence approximately 477′ in a westerly direction, a bearing of S 88°; 58′ W; thence approximately 1,503′ in a southerly direction on a bearing of S 01° 24′ E to the point of beginning, containing one square mile, more or less. You can view legal descriptions and detailed, colored maps of the exclusions in this final rule at *http://alaska.fws.gov/fisheries/mmm/polarbear/criticalhabitat.htm.*

(iv) The maps of Unit 2 (east and west), terrestrial denning habitat, follow:

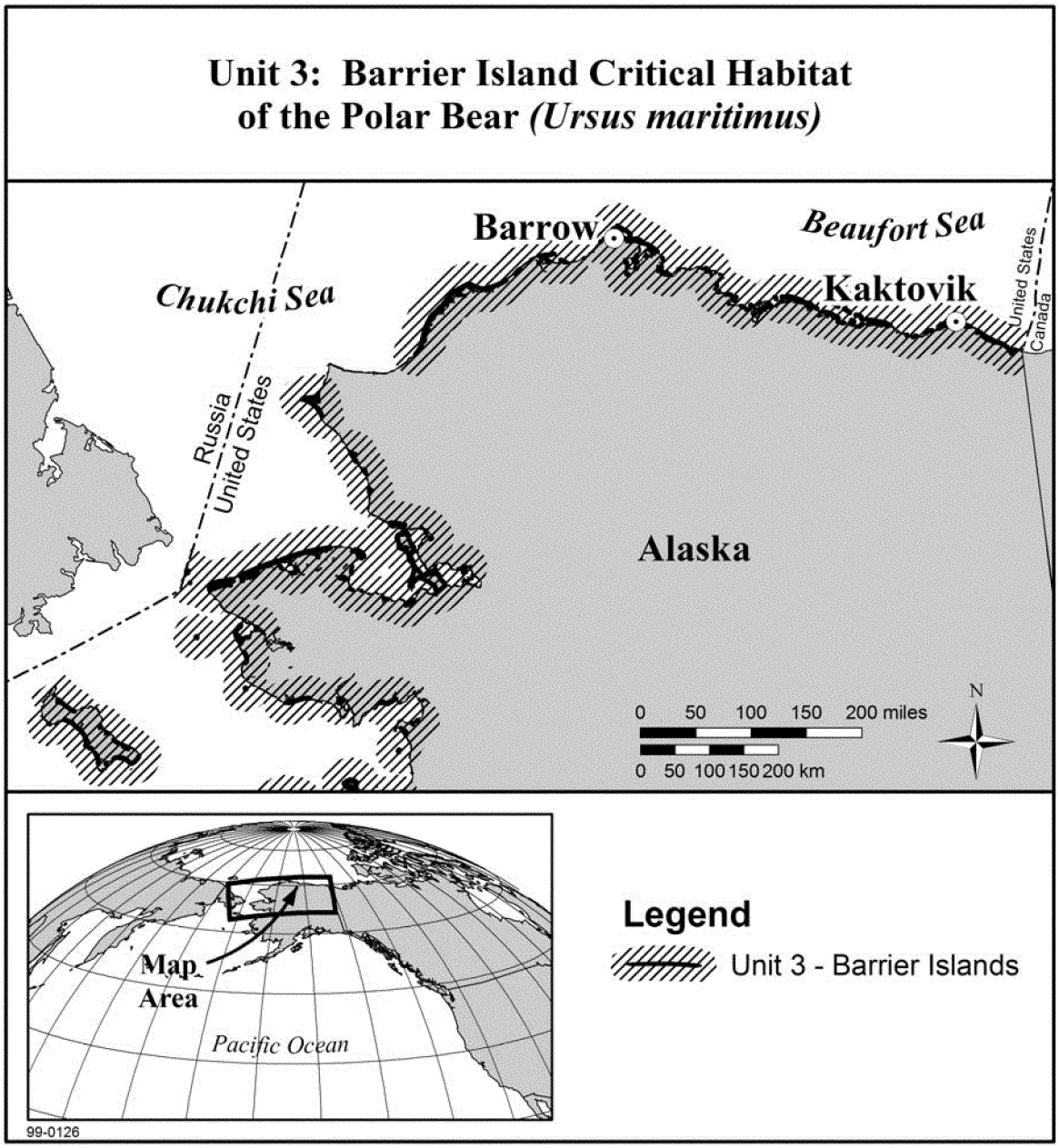





(7) Unit 3: Barrier island habitat.

(i) The critical barrier island habitat includes off-shore islands offset from the mainland coast of Alaska starting at the United States-Canada border westward to Barrow, southwest to Cape Lisburne, south to Point Hope, southwest to Wales, southeast to Nome, and ending at Hooper Bay, AK, and water, sea ice, and land habitat within 1.6 kilometers (1 mile) of the barrier islands (no-disturbance zone).

(ii) The map of Unit 3, barrier island habitat, follows:




* * * * *

Dated: October 25, 2010.

**Will Shafroth,**

*Acting Assistant Secretary for Fish and Wildlife and Parks.*

[FR Doc. 2010–29925 Filed 12–6–10; 8:45 am]

**BILLING CODE 4310–55–C**