Proposed Rules

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[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: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to 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 519,403 square kilometers (km^2) (200,541 square miles (mi^2)) fall within the boundaries of the proposed critical habitat designation. The proposed critical habitat is located in Alaska and adjacent territorial and U.S. waters.

DATES: We will consider comments we receive on or before [*insert date 60 days after date of publication in the* **Federal Register**]. We must receive requests for public hearings, in writing, at the address shown in the **FOR FURTHER INFORMATION CONTACT** section by [*insert date 45 days after date of publication in the* **Federal Register**]. Due to the court-ordered deadline of June 30, 2010, to complete the final determination on this proposed designation of critical habitat for the polar bear, we request that you submit comments and information to us as soon as possible in order to allow us adequate time to take them into consideration for the final determination.

ADDRESSES: You may submit comments by one of the following methods:

- Federal eRulemaking Portal: *http://www.regulations.gov*. Follow the instructions for submitting comments.
- U.S. mail or hand-delivery: Public Comments Processing, Attn: FWS-R7-ES-2009-0042; Division of Policy and Directives Management; U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, Suite 222; Arlington, VA 22203.

We will post all comments on *http://www.regulations.gov*. This generally means that we will post any personal information you provide us (see the **Public Comments** section below for more information).

You can view detailed, colored maps of areas proposed as critical habitat in this proposed 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**).

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; facsimile 907/786-3816. If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION:

Public Comments

We intend that any final action resulting from this proposed rule will be based on the best scientific data available and will be as accurate and as effective as possible. Therefore, we request comments or information from the public, other concerned government agencies, the scientific community, industry, or other interested party concerning this proposed rule. We particularly seek comments concerning:

(1) The reasons why we should or should not designate habitat as ''critical habitat'' under section 4 of the Act (16 U.S.C. 1531 *et seq.*), including whether there are threats to the species from human activity, the degree of which can be expected to increase due to the designation, and whether that increase in threat outweighs the benefit of designation, such that the designation of critical habitat is prudent.

(2) Specific information on:

- The amount and distribution of habitat used by polar bear populations in the United States, specifically in the southern Beaufort, Chukchi, and Bering Seas
- What areas occupied at the time of listing that contain features essential for the conservation of the species we should include in the designation and why, and
- What areas not occupied at the time of listing, within the jurisdiction of the United States, are essential to the conservation of the species and why.

(3) Land use designations and current or planned activities in the subject areas and their possible impacts on features essential to the conservation of the species within proposed critical habitat.

(4) Any foreseeable economic, national security, or other potential impacts resulting from the proposed designation and, in particular, any impacts on small entities, and the benefits of including or excluding areas that exhibit these impacts. Such impacts could include any potential impacts on oil and gas development and exploration. For more information on the expected effects of oil and gas development and exploration on critical habitat, and thus potential impacts of the designation on these activities, please see (among other sections) the sections entitled ''Petroleum Hydrocarbons'', ''Summary of Anthropogenic Threats to Features Essential to the Conservation of the Polar Bear Which May Require Special Management Considerations or Protection'', ''Application of the 'Adverse Modification' Standard'', and ''Exclusions Based on Economic Impacts''.

(5) Potential effects on oil and gas development and exploration including those related to impacts referenced in (4).

(6) Potential effects on native cultures and villages.

(7) Potential effects on commercial shipping through the Northern Sea Route in anticipation of a longer navigable season.

(8) Special management considerations or protections that the proposed critical habitat may require.

(9) Specific information on the incremental effects of the designation of critical habitat for the polar bear, in particular, will any aspect of the proposed critical habitat designation result in consultations under section 7 of the Act with a different set of protections than those afforded by the Marine Mammal Protection Act (MMPA) (16 U.S.C. 1361 *et seq.*)?

(10) Whether we could improve or modify our approach to designating critical habitat in any way to provide for greater public participation and understanding, or to better accommodate public concerns and comments.

We are additionally asking the public for specific information concerning potential denning habitat for the polar bears along the west coast of Alaska from Barrow southward to the Seward Peninsula. These specific questions and discussion are found in the Criteria Used To Identify Critical Habitat section of this proposed rule under the discussion of terrestrial denning habitat criteria.

You may submit your comments and materials concerning this proposed rule by one of the methods listed in the **ADDRESSES** section.

If you submit a comment via *http://www.regulations.gov*, your entire comment—including any personal identifying information—will be posted on the website. If you submit a hardcopy comment that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy comments on *http://www.regulations.gov*.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on *http://www.regulations.gov*, or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Marine Mammals Management Office (see **FOR FURTHER INFORMATION CONTACT**).

Background

On May 15, 2008 (73 FR 28212), the final rule listing the polar bear as a threatened species under the Act was published in the **Federal Register**. In that final rule, we made our determination on the status of the species under the Act. On the basis of a review of the best available science and commercial information related to polar bear biology, ecology, and threats, including climate change, as discussed in the final listing rule, we determined the polar bear to meet the definition of a threatened species under the Act. Please refer to our final listing rule for a more detail discussion of the biology of the species, threats to it and its habitat, and a discussion of the effects of climate change on its habitat. When a species is listed as threatened or endangered, we are to propose critical habitat for the species to the maximum extent prudent and determinable based on the best available scientific data. In our final listing rule, we determined that the designation of critical habitat was prudent, but not determinable at that time. We have since determined that critical habitat is determinable and are proposing its designation in this rule. In this proposed rule, it is our intent to discuss only those topics directly relevant to the designation of critical habitat. Information on polar bear biology and ecology that is directly 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 United States 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 considered including in this proposed 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 marine 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 proposed rule, we are referring to both 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 (*Phoca 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). In Alaska, certain 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; Durner *et al.* 2006a). 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 as defined under the Marine Mammal Protection Act (MMPA): the southern Beaufort Sea population, which extends into Canada; and the Chukchi and 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. The Service listed the polar bear as a threatened species throughout the Arctic under the Act on May 15, 2008 (73 FR 28212; final rule available at *http://alaska.fws.gov/fisheries/mmm/polarbear/issues.htm*).

Insert Figure 1: Ranges of the Chukchi/Bering Seas and Southern Beaufort Sea Polar Bear (Ursus maritimus) Populations

Figure 1. Approximate bounds (95 percent contour) for the southern Beaufort Sea and the Chukchi and Bering Seas 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 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, and 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 and 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 and 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 and 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 and 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 and 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 and 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 and 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, deformation, and forms (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 (984.2 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, USGS, 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). 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 delimited 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). 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 and 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 600–700g (1.3–1.5 lbs), 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.

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 and 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 polar bears 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. The Service then issued a special rule for the polar bear under section 4(d) of the Act 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, requires the Service, on or before June 30, 2010, to submit to the **Federal Register** a final critical habitat determination for the polar bear. Comments or information that we receive in response to this proposed rule will allow us to comply with the court order and section 4(b)(2) of the Act. 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.

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.

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 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. Critical habitat designations identify, to the extent known using the best scientific data available, habitat areas that provide essential life cycle needs of the species (areas on which are found the primary constituent elements, as defined at 50 CFR 424.12(b)). Occupied habitat that contains the features essential to the conservation of the species meets the definition of critical habitat only if those features may require special management considerations or protection. Under the Act, we can designate unoccupied areas as critical habitat only when we determine that the best available scientific data demonstrate that the designation of that area is essential to the conservation needs of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific 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 proposed 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 eventually 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 (HCP), or other species conservation planning efforts if new information available to these planning efforts calls for a different outcome.

Methods

As required by section 4(b) of the Act, we used the best scientific data available to determine the specific geographical areas occupied at the time of listing that contain features essential to the conservation of the polar bear in the United States that may require special management or protection, and specific areas outside the geographical area occupied by the polar bear at the time of listing that are essential to the conservation of the polar bears in the United States. In proposing critical habitat for polar bears in the United States, we reviewed the relevant information available, including peer-reviewed journal articles, the final listing rule, and unpublished reports

and materials (such as survey results and expert opinions). In general, polar bears occupy the vast majority of their historic range. Exceptions include St. Matthew Island (Hanna 1920, pp. 121–122) and the Pribilof Islands (Ray 1971, p. 13) in the Bering Sea. As described in detail below, we have proposed to designate as critical habitat only those areas currently occupied by the polar bear and have determined that designating only occupied areas as critical habitat for polar bears is sufficient for the conservation of the species in the United States. As such, we are not proposing to designate as critical habitat any areas outside the geographical area occupied by polar bears in the United States.

While the amount of information regarding important polar bear life functions and habitats associated with these functions has expanded greatly in Alaska during the past 20 years, the identification of specific physical and biological features essential to the conservation of the polar bear is complex. (see the polar bear final listing rule (May 15, 2008 (73 FR 28212) for a review of polar bear biology, ecology, and threats). Moreover, the future values of these essential features to the conservation of the species may change in a rapidly changing environment. Most notably, arctic sea ice provides a platform for critical life-history functions, including hunting, feeding, travel, and nurturing cubs. Sea ice is projected to be significantly reduced within the next 45 years, and some predictive climate models project complete absence of sea ice during summer months in shorter timeframes (Amstrup *et al.* 2008, p. 239; Durner *et al.* 2009a, p. 45). (see the polar bear final listing rule (May 15, 2008 (73 FR 28212)) for a more detailed discussion of climate change in the Arctic and the threat of this change to polar bears).

Primary Constituent Elements

In accordance with section 3(5)(A)(i) of the Act and the regulations at 50 CFR 424.12, in determining which specific geographical areas occupied at the time of listing to propose 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. These features 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 primary constituent elements (PCEs) for the polar bear in the United States based on its physical and biological needs, as described in the Background section of this proposed rule 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, 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. 1709; 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 and bearded 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. 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: sea ice concentrations approximately 50 percent or greater that are adjacent to open water areas, flaw zones, leads, and polynyas, and that are over the shallower, more productive waters over the continental shelf (waters 300 m (984.2 ft) or less in depth).

Information on the seasonal movements of polar bears suggests that they select for ice conditions that maximize their foraging opportunities. Water depth, sea ice concentration (as described below), and proximity to the ice edge, where flaw zones, polynyas, leads, or open water occur, appear to be the important characteristics of the preferred polar bear feeding and movement habitat (Durner *et al.* 2004, p. 16). Preferred polar bear foraging habitat occurs primarily on the annual sea ice over the shallower (300 m (984.2 ft) or less) waters of the continental shelf (Durner *et al.* 2004a, p. 19; Durner *et al.* 2009a, p. 52). This is consistent with the distribution of their preferred prey species, ringed and bearded seals, which are also generally found over the continental shelf. Stirling *et al.* (1982, p. 14) found that ringed seal densities were greatest in ocean waters at depths between 50–100 m (164-328 ft) and with greater than 80 percent ice cover, whereas bearded seals were generally found in shallower waters (25–50 m (82-164 ft) deep) with relatively low ice cover.

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. 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). However, 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).

Ice in proximity to the ice edge (near open water), polynyas, or leads provide polar bears access to ringed and bearded seals. 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 flaw zones, 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 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). This is presumably because seals are available and accessible in the adjacent flaw zones and polynyas (USFWS 1995, p. 14; Stirling 1997, p. 14) that are in the shallower, more productive waters over the continental shelf.

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 competition for limited food resources, increasing distances to swim with increased risk of drowning, increasing interaction with humans in terrestrial or nearshore areas with negative consequences, and declining population (Amstrup *et al.* 2008).

Reductions in sea ice will likely reduce productivity of most ice seal species as well, result in changes in composition of seal species indigenous to some areas, and eventually result in a decrease in seal abundance (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. 2679–2681).

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, the dynamic nature of sea-ice habitat in the Arctic, and the preference of polar bears for 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 and Chukchi and Bering Seas for feeding, rearing of offspring, and normal behavior, i.e., 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. Their main species of 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.

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). In some areas and under some conditions, prey other than seals, such as carrion or remains of subsistence harvested bowhead whales, 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). Changes in the distribution of harp seals 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). However, the increased take of other species, such as bearded seals, walrus, and harbor seals, in the United States, if those species were available, would likely not compensate for reduced availability of ringed seals (Derocher *et al.* 2004, p. 168).

Polar bears are very sensitive to changes in sea ice due to climate change because of their reliance on sea ice and their specialized feeding requirements (Laidre *et al.* 2008, p. S112). The importance of availability of prey to polar bear reproduction was evident in the mid-1970s when a decline in ringed and bearded seals resulted in a decline in the weights of adult female polar bears and a decline in reproduction (Stirling *et al.* 1982, p. 19; Amstrup *et al.* 1986, p. 249). Changes in the distribution and abundance of optimal sea ice feeding habitat due to climate change could also affect polar bear denning success. For example, the availability and accessibility of seals to polar bears, which often hunt at the seals' breathing hole, are likely to decrease with increasing amounts of open water or fragmented ice (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 ability 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). Thus, the availability of seal pups to adult females with cubs-of-the-year in the spring following den emergence may also 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.

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 over the shallower waters of the continental shelf (300 m (984.2 ft) or less) is an essential physical feature for polar bears in the southern Beaufort and Chukchi and Bering Seas for feeding, rearing of offspring, and normal behavior.

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. This may be due to the availability of the sea ice year-round and less severe weather conditions compared to more northerly latitudes. 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. 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 parturient (bearing or about to bear young) 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, except for the importance of maternal dens. 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 climate (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 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 and Bering Seas population), the individual polar bear dens in the United States are widely dispersed over large areas of denning habitat in northern Alaska. Even though this denning habitat is expansive, barrier islands, 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 (Amstrup 2003, pp. 596-597; Durner *et al.* 2006b, p. 34).

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. Amstrup and Gardner (1994, p. 4) noted that, in the U.S. southern Beaufort Sea population, only a small proportion (4 percent) of polar bears den on the shore-fast ice adjacent to the mainland coast of Alaska. The overall occurrence of dens on sea ice in the Arctic is thought to be relatively low based on current studies using radio-telemetry (Amstrup 2003, p. 596). Protection of the few pelagic dens on drifting sea ice in the Beaufort Sea is impracticable because of the large area involved, the difficulty in locating dens, and the dynamic nature of the sea ice (Garner *et al.* 1994, p. 116).

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. It is expected that the number of polar bears denning on land in northern Alaska will 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 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 adult male polar bears.

Using high resolution photographs, Durner *et al.* (2001, p. 119; 2006b, p. 33) mapped suitable denning habitat for polar bears from the Coville Delta to the Canadian 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 Canadian 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 Canadian border and do not include denning habitat from the Colville River to Barrow or denning habitat located farther inland. Although suitable denning habitat exists on land in western Alaska along the Chukchi Sea coast (USFWS 1995, pp. A19-A33), most of the polar bears from the Chukchi and Bering Seas population den on Wrangel Island and the Chukotka Peninsula, Russia (Stishov 1991b, pp. 90-92).

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 that has drifts suitable for seal birth lairs, 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 need to balance their nutritional demands before and after denning, and select den locations that will provide a safe environment from adult males, human disturbance, and adverse weather conditions for their cubs. We have determined that terrestrial denning habitat, including on the coastal barrier islands in northern Alaska, that includes the following topographic features is a physical feature 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; and (c) 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 Canadian 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 move easily 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 tend to 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 (*Balaena mysticetus*) 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 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 is slightly more than 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 marine waters that occur over the continental shelf at depths 300 m (984.2 ft) or less.

(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; and (c) the absence of disturbance from humans and human activities that might attract other 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 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.

For purposes of this proposed rule, we are proposing three critical habitat units based on the three PCEs described above. We propose these units for designation 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 from the use of aircraft, boats, snow machines, vehicles, and other equipment; and commercial shipping. We discuss each 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 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 resulting in mortality of the denning bears), 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 easily be 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, reduction in the extent and area of sea ice in all seasons, retraction of sea ice away from productive continental shelf areas throughout the Polar Basin, reduction of the amount of 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; 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 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).

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. 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 large-volume 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 Minerals Management Service (MMS) (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). In addition, the EIS 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). 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 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. In addition, a polar bear oil spill response plan has been developed to minimize the chance that a spill would have negative effects on polar bears and their critical habitat (USFWS 1999).

Oil spills in the fall or spring during the formation or break-up of sea ice present a greater risk 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 and 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 in 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 and 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 and cumulative effects on 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 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 a 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 values 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 some 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) (Aars *et al.* 2006, pp. 22, 58, 171) recognized the potential for increased shipping and marine transportation in the Arctic with declining seasonal sea-ice conditions. 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

Although it is expected that the effects of climate change will have the greatest impact on polar bear sea-ice habitat, we have also evaluated changes to habitat in the Arctic and, as a result, increased stress from human activities. 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 have 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 oil and gas activities. The Service administers an incidental take program under the MMPA 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 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. 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 in 50 CFR 18.27(c)) engaged in a specified activity (other than commercial fishing) in a specified geographic region. 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. 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 letters of authorization (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, 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. Since 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 believe that any MMPA-compliant authorization or regulation would, in most circumstances, 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.

An example of application of the MMPA incidental take standards to the polar bear is 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 period 1991–1996, 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 rules published on November 28, 2003 (68 FR 66744) and 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 they move 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. For example, we may require 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-mi (1.6-km) 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, should facilitate managing human activities associated with oil and gas operations to minimize disturbances during this critical denning period for female polar bears (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.

Data provided by monitoring and reporting programs in the Beaufort Sea and in the Chukchi Sea, as required under the incidental take authorizations for oil and gas activities, have shown that the mitigation measures have successfully minimized impacts to polar bears. For example, since the 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 or of personnel being injured by a bear as a result of oil and gas industry activities. Incidental take regulations under the MMPA have been issued since 1993 in the Beaufort Sea. The regulations typically extend for a 5–year period and the current regulatory period for the Beaufort Sea is August 2, 2006, to August 2, 2011. 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, conservation plans developed by States and counties, 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. In proposing critical habitat 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 Geographic Information System (GIS) coverages.

We are proposing to designate critical habitat for polar bears in the United States in areas occupied at the time of listing which are defined by physical and biological features essential to the conservation of polar bears in the United States which may require special management considerations or protection. In addition, we have also considered qualitative criteria in the selection of specific areas 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 proposed critical habitat boundaries within this proposed 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. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this proposed rule have been excluded by text in the proposed rule and are not proposed for designation as critical habitat. Therefore, if the critical habitat is finalized as proposed, a Federal action involving these lands would not trigger 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

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.

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.

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 proposed 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 proposed 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 feature in all these areas was the ability of the terrain to catch enough drifting snow to be suitable for den construction. Potential den sites in western Alaska are similar (USFWS 1995, pp. A-12).

In northern Alaska from the Canadian 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; Durner *et al.* 2003; Durner *et al.* 2006b; Durner *et al.* 2009b). Detailed den habitat data from the Canadian border to about 28.5 km (17.4 mi) southeast of Barrow, Alaska, has been mapped, but only data for the area from the Canadian border to the Colville River Delta has been field verified and peer reviewed. Denning habitat data on the barrier islands is also available for this section of the coastline. The detailed denning habitat information in 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.

Based on historical use and the preference by pregnant females to select den sites that were relatively free of disturbance and relatively near the coast, we have established selection criteria of only high-use coastal denning habitat. 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). 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). We did not include potential terrestrial or barrier island denning habitat in western Alaska in this proposed critical habitat for the polar bear. 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. Although incidental sightings of female polar bears with offspring have been reported near the west coast of Alaska, there are few documented reports of denning in this area. Core denning areas for the Chukchi and Bering Seas population appears to occur along the Russian Chukotka coast and Wrangel Island, Russia rather than the west coast of Alaska. Therefore, we determined that coastal mainland and barrier island terrestrial habitat in western Alaska from Barrow southward to the Seward Peninsula does not contain high-use denning habitat, a primary filter that we have applied as a criteria for the inclusion of denning habitat in our proposed critical habitat.

However, recognizing that sparse denning by polar bears has occurred in these areas historically, we are considering whether it may be appropriate to include all or portions of these specific areas in the final designation and specifically asking the public:

(1) Whether the specific coastal mainland and barrier island terrestrial areas along the west coast of Alaska from Barrow southward to the Seward Peninsula contain physical and biological features essential for denning habitat for polar bears;

(2) Whether there may be a physical or biological feature essential to the conservation of the polar bear for denning habitat along the west coast of Alaska that we have not identified in this proposal;

(3) If these areas contain physical and biological features essential for denning habitat for polar bear, do these features require special management considerations or protections: and

(4) Whether the specific areas defined by these features should be included in a final designation of critical habitat for the polar bear.

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.

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.

Proposed Critical Habitat Designation

We are proposing three critical habitat units for polar bear populations in the United States. You can view detailed, colored maps of areas proposed as critical habitat in this proposed 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 propose as critical habitat are: (1) Sea-ice Habitat; (2) Terrestrial Denning Habitat; and (3) Barrier Island Habitat.

TABLE 1. OCCUPANCY OF PROPOSED 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 OwnershipRatio (percent)
1. Sea-ice habitat	Yes	Yes	499,552 (192,928)	7/93/0
2. Terrestrial Denning Habitat	Yes	Yes	14,678 (5,668)	20/74/6
3. Barrier Island Habitat	Yes	Yes	10,588 (4,089)	65/9/27[2]
TOTAL			**519,403[1] (200,541) [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]Due to rounding errors, the ratios given for some units do not add up to 100.

Below, we present brief descriptions of all proposed critical habitat units, and reasons why they meet the definition of critical habitat and are included in this proposal. 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 PROPOSED CRITICAL HABITAT UNITS FOR POLAR BEARS IN THE UNITED STATES.

Area	Federal(percent)	State(percent)	Private(percent)	Alaska Native(percent)
1. Sea-ice Habitat	92.7	7.3	0.0	0.0
2. Terrestrial Denning Habitat	73.6	20.0	0.0	6.4
3. Barrier Islands	8.5	64.5	0.0	27.0

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

Area	Federal(percent)	State(percent)	Private(percent)	Alaska Native(percent)
TOTAL	**90.5**	**8.8**	**0.0**	**0.7**

Unit 1: Sea-ice Habitat

Unit 1 consists of approximately 499,552 km² (192,928 mi²) 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 and Bering Seas population as determined by telemetry data (Garner *et al.* 1990, p. 223), since the 300-m (984.2-ft) depth contour extends beyond the southern extent of the polar bear population. The vast majority (93 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 risk associated with commercial shipping within this region and along the Northern Sea Route.

Unit 2: Terrestrial Denning Habitat

Unit 2 consists of an estimated 14,678 km² (5,668 mi²) 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 proposed 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 Canadian 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 critical terrestrial denning habitat for the Chukchi and Bering Seas population because most of the denning for this population occurs on Wrangel Island and Chukotka Peninsula, Russia.

Twenty percent, 74 percent, and 6 percent of Unit 2 is located within State of Alaska land, Federal lands, and Native lands, respectively. In addition, 52.4 percent of the land included within Unit 2 occurs within the boundaries of Arctic National Wildlife Refuge.

Unit 2 contains the necessary topographic and macrohabitat and microhabitat features identified in PCE 2 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 10,588 km² (4,089 mi²) of barrier island habitat. Barrier island habitat includes the barrier islands themselves and associated spits, and the water, ice, and terrestrial habitat within 1.6 km (1 mi) of the islands. Sixty-four percent of Unit 3 is located within State of Alaska waters. The remaining 36 percent is within Federal waters. The area within Federal jurisdiction is comprised of 28.0 percent, 21.3 percent, 4.0 percent, and 46.7 percent of the offshore marine waters included within the boundaries of Arctic National Wildlife Refuge, Alaska Maritime National Wildlife Refuge, Selawik National Wildlife Refuge, and Yukon Delta National Wildlife Refuge, respectively.

Unit 3 contains PCE number 3, which is 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 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 actions they fund, authorize, or carry out are not likely to destroy or adversely modify 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 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.

In addition, under section 7(a)(4) of the Act, Federal agencies must confer with the Service on any agency action that is likely to result in destruction or adverse modification of proposed critical habitat.

If a species is listed or critical habitat is designated, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with the U.S. Fish and Wildlife Service. As a result of this consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

(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 or destroy or adversely modify critical habitat, we also provide

reasonable and prudent alternatives to the project, if any are identifiable. 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 jeopardizing the continued existence of the listed species or 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 similarly 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 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 may sometimes 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 are 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 continued existence of the polar bear. On June 23, 2008, the Service issued its Programmatic Biological Opinion For Polar Bears (*Ursus maritimus*) On the Beaufort Sea Incidental Take Regulations, similarly concluding again 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 designated that may be affected by the action. Thus, any future designation of critical habitat for the polar bear would require the Service to re-initiate consultation on these Incidental Take Regulations. Further, with this proposal to designate critical habitat, the Service intends to conduct an informal conference, as provided under the Act, to ensure that the existing regulations do not adversely modify proposed critical habitat.

Federal activities that may affect the polar bear in the United States or its designated critical habitat require section 7 consultation under the Act. Activities on State, Tribal, local, or private lands requiring 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 us under section 10 of the Act) or involving some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency) are subject to the section 7 consultation process. 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 consultations.

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 relates to the rule. In addition, the summary shall, 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.

Activities that, when carried out, funded, or authorized by a Federal agency, may affect critical habitat and therefore should result in consultation for the southern Beaufort Sea and the Chukchi and 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 activity; 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 and local inhabitants to access sites such as work sites, hunting areas, and fish camps; 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 modify, 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 and Exclusions

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.''

The Department of Defense has lands with a completed INRMP within the geographical areas included in the proposed critical habitat designation. These include: 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, Point Lonely Former SRRS, Point Lay Former LRRS, and West Nome Tank Farm. The Service is considering excluding these lands from the proposed critical habitat for the polar bear if the INRMPs provide a benefit to the species for which critical habitat is proposed, as described above.

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, the legislative history is clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor.

Exclusions Based on Economic Impacts

Under section 4(b)(2) of the Act, we consider the economic impacts of specifying any particular area as critical habitat. In order to consider economic impacts, we are preparing an analysis of the potential economic impacts of the proposed critical habitat designation and related factors. Potential land use sectors that may be affected by polar bear critical habitat designation include lands owned or managed by the Department of Defense (DOD) where a national security impact might exist and land owned or managed by Federal or State government, or a local jurisdiction, where there are oil and gas developments. We also consider whether landowners have developed any habitat conservation plans (HCPs) for the area, or whether there are conservation partnerships that would be encouraged or discouraged by designation of, or exclusion from, critical habitat in an area. In addition, we look at the presence of Tribal lands or Tribal Trust resources that might be affected, and consider the government-to-government relationship of the United States with the Tribal entities. We also consider any social impacts that might occur because of the designation.

We will announce the availability of the draft economic analysis as soon as it is completed, at which time we will seek public review and comment. At that time, copies of the draft economic analysis will be available for downloading from the Internet at *http://www.regulations.gov*, or by contacting the Marine Mammals Management Office (see **FOR FURTHER INFORMATION CONTACT**). During the development of a final designation, we will consider economic impacts, public comments, and other new information, and areas may be excluded from the final critical habitat designation under section 4(b)(2) of the Act and our implementing regulations at 50 CFR 424.19.

Exclusions Based on National Security Impacts

Under section 4(b)(2) of the Act, we consider whether there are lands owned or managed by the Department of Defense (DOD) where an impact on national security from the designation of critical habitat for the polar bear might exist. In preparing this proposal, we have determined that the lands within the proposed designation of critical habitat for polar bears in the United States that are owned or managed by the DOD have existing INRMP plans in place under the provisions of the Sikes Act as noted above. Therefore, we will first consider whether these lands may be excluded under the Sikes Act before considering any possible impacts or exclusions resulting from national security.

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 or other management plans for the area, or whether there are conservation partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we evaluate any additional impacts to tribes, 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.

In preparing this proposal, we have determined that there are currently no HCPs or other management plans for the polar bear populations that occur in the United States or on United States territory. Since the proposed designation includes Alaska Native-

owned lands or trust resources which might be affected, we will consider the government-to-government relationship of the United States with the Native entities. However, we anticipate no impact to Native-owned lands, partnerships, or HCPs from this proposed critical habitat designation. There are no areas proposed for exclusion from this proposed designation based on other relevant impacts.

Peer Review

In accordance with our joint policy published in the **Federal Register** on July 1, 1994 (59 FR 34270), we are obtaining the expert opinions of at least three appropriate independent specialists regarding this proposed rule. The purpose of peer review is to ensure that our critical habitat designation is based on scientifically sound data, assumptions, and analyses. We invited these peer reviewers to comment during this public comment period on our specific assumptions and conclusions in this proposed designation of critical habitat.

We will consider all comments and information we receive during this comment period on this proposed rule during our preparation of a final determination. Accordingly, our final decision may differ from this proposal.

Public Hearings

The Act provides for one or more public hearings on this proposal, if we receive any requests for hearings. We must receive your request for a public hearing within 45 days of the publication of this proposal (see the DATES section). Send your request to the person named in the **FOR FURTHER INFORMATION CONTACT** section. We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings, as well as how to obtain reasonable accommodations, in the **Federal Register** and local newspapers at least 15 days before the hearing.

Required Determinations

Regulatory Planning and Review—Executive Order 12866

The Office of Management and Budget (OMB) has determined that this rule is significant and has reviewed this proposed rule under Executive Order 12866 (E.O. 12866). OMB bases its determination upon 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.

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 the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended RFA to require Federal agencies to provide a statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

At this time, we lack the specific information necessary to provide an adequate factual basis for determining the potential incremental regulatory effects of the designation of critical habitat for the polar bear to either develop the required RFA finding or provide the necessary certification statement that the designation will not have a significant impact on a substantial number of small business entities. On the basis of the development of our proposal, we have identified certain sectors and activities that may potentially be affected by a designation of critical habitat for the polar bear. These sectors include oil and gas exploration, development, production and distribution, oil spill response, commercial shipping, coastal Alaska Native villages and land development including roads and airport improvements. We recognize that not all of these sectors may qualify as small business entities. However, while recognizing that these sectors and activities may be affected by this designation, we are collecting information and initiating our analysis to determine (1) which of these sectors or activities are or involve small business entities and (2) what extent the effects are related to the polar bear being listed as a threatened species under the Act and protected under the MMPA (baseline effects) or whether the effects are attributable to the designation of critical habitat (incremental). As indicated earlier in this proposal, 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 are not likely to jeopardize the continued existence of the polar bear and concluded that the issuance of the 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. Based on our findings through the completed intra-Service consultation and the conservation management program that is currently in place of the polar bear, we believe that the potential incremental effects resulting from a designation will be small. As a consequence, following an initial evaluation of the information available to us, we do not believe that there will be a significant impact on a substantial number of small business entities resulting from this designation of critical habitat for the polar bear. However, we will be conducting a thorough analysis to determine if this may in fact be the case. As such, we are requesting any specific economic information related to small business entities that may be affected by this designation and how the designation may impact their business. Therefore, we defer our RFA finding on this proposal designation until completion of the draft economic analysis prepared under section 4(b)(2) of the Act and E.O. 12866. As discussed above,this draft economic analysis will provide the required factual basis for the RFA finding. Upon completion of the draft economic analysis, we will announce availability of the draft economic analysis of the proposed designation in the **Federal Register** and reopen the public comment period for the proposed designation. We will include with this announcement, as appropriate, an initial regulatory flexibility analysis or a certification that the rule will not have a significant economic impact on a substantial number of small entities accompanied by the factual basis for that determination. We have concluded that deferring the RFA finding until completion of the draft economic analysis is necessary to meet the purposes and requirements of the RFA. Deferring the RFA finding in this manner will ensure that we make a sufficiently informed determination

based on adequate economic information and provide the necessary opportunity for public comment.

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 would 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 proposed 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. However, we will further evaluate this issue as we conduct our economic analysis, and review and revise this assessment as warranted.

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. The takings implications assessment concludes that this proposed 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 proposed 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 proposed 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 primary constituent elements of the habitat necessary 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 proposed designating critical habitat in accordance with the provisions of the Act. This proposed rule identifies the primary constituent elements 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 proposed 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)).

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

(a) Be logically organized;

(b) Use the active voice to address readers directly;

(c) Use clear language rather than jargon;

(d) Be divided into short sections and sentences; and

(e) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in the **ADDRESSES** section. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, and the sections where you feel lists or tables would be useful.

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 readily 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 readily 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.

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 Status Review (Schliebe *et al.* 2006a) and the proposed listing rule (72 FR 1064). Following publication of the proposed listing 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 proposed critical habitat areas that occur seaward from the mean high tide line, 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 that we are in 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. 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. Additionally, we do not anticipate that the proposed 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 the proposed 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 hectares (2,758,377 acres) 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 40.2–80.5 km (25–50 mi) from shore and extends out to 321.9 km (200 mi) offshore. Most of the onshore and offshore areas currently associated with active or proposed oil and gas activities overlap with the proposed critical habitat areas. Any proposed development project likely would have to undergo section 7 consultation, 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. A polar bear oil spill response plan has been developed to minimize the chance that a spill would have negative effects on polar bears and their critical habitat (USFWS 1999). 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. Because of the more restrictive provisions associated with incidental take regulations under the MMPA (see our detailed discussion under Special Management Considerations or Protection), which have been developed for both the Chukchi and Beaufort Sea and have, for example, provided a framework to minimize any adverse bear–human interactions associated with the oil and gas industry, we do not believe that the proposed critical habitat will provide any new and significant effect 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. However, we will further evaluate this issue as we conduct our economic

analysis, and review and revise this assessment as warranted.

References Cited

A complete list of all references cited in this proposed rulemaking is available 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.

Proposed Regulation Promulgation

Accordingly, we propose to 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	May 15, 2008	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, which is sea ice over marine waters 300 m (984.2 ft) or less in depth that occur over the continental shelf.

(ii) Terrestrial denning habitat, which is 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; and

(C) The absence of disturbance from humans and human activities that might attract other bears.

(iii) Barrier island habitat, which consists of the barrier islands along the Alaska coast and their associated spits, and water, ice, and terrestrial habitat within 1.6 km (1 mi) of these islands.

(3) Critical habitat does not include manmade structures (e.g., docks, seawalls, pipelines) and the land on which they are located existing within the boundaries 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 (IBCAO), 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 (EEZ) were from the National Oceanic and Atmospheric Administration's Office of Coast Survey (OCS) website. 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 International Date Line (70.98176°N, 173.68023°W), which is the border between the United States and Russia. From this point, the boundary follows the International Date Line south and southwest to the intersection with the southern boundary of the Chukchi and 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:

Insert Map here: Unit 1 – Sea Ice Critical Habitat of the Polar Bear (Ursus maritimus)

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

Insert Map here: Unit 2 (east half) – Designation of Denning Critical Habitat for the Polar Bear (Ursus maritimus)

Insert Map here: Unit 2 (west half) – Designation of Denning Critical Habitat for the Polar Bear (Ursus maritimus)

(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, south to Wales, southeast to Nome, and ending at Hooper Bay, AK, and water and ice habitat within 1.6 kilometers (1 mi) of the barrier islands.

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

Insert Map here: Unit 3 (west half) – Barrier Island Critical Habitat for the Polar Bear (Ursus maritimus)

* * * * *

Dated: October 20, 2009

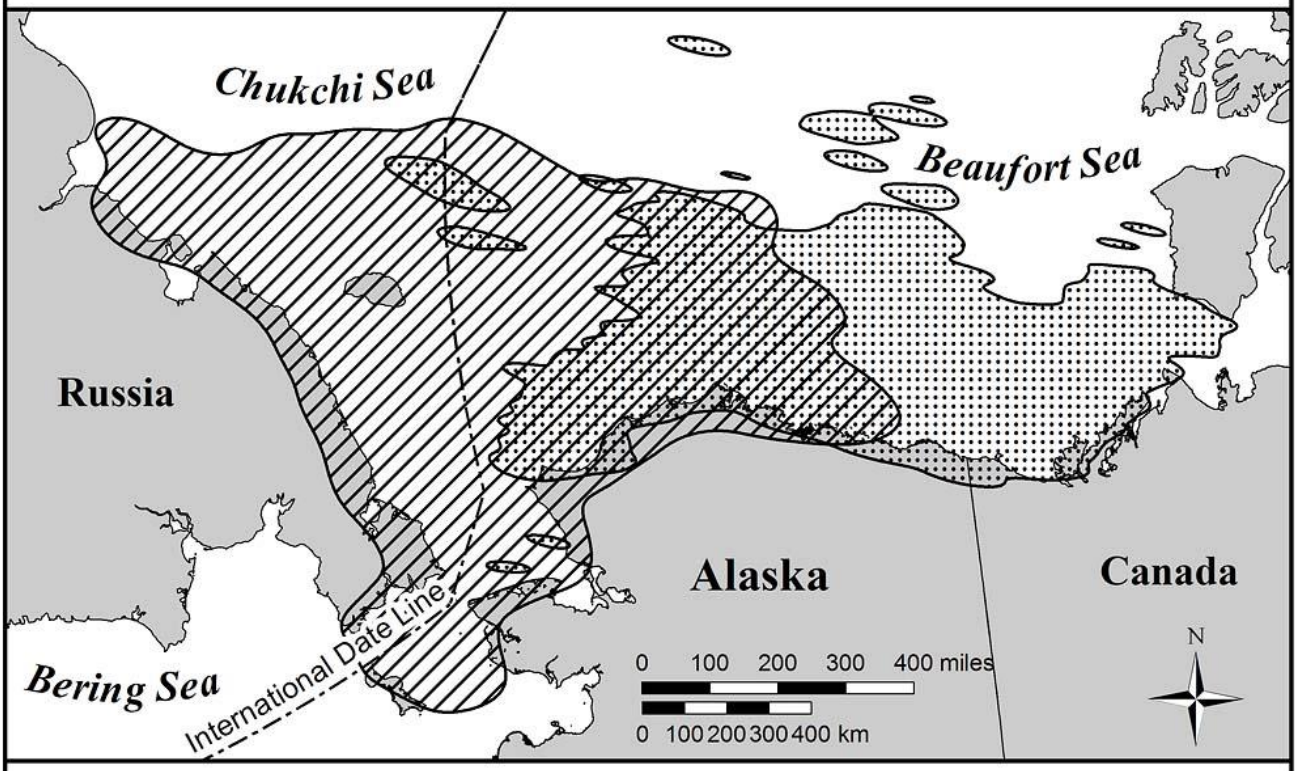
Thomas L. Strickland

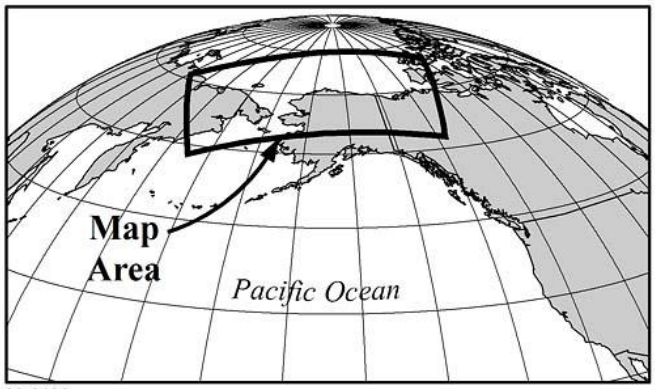
Assistant Secretary for Fish and Wildlife and Parks

[FR Doc. 09–?????? Filed ??–??– 09; 8:45 am]

BILLING CODE 4310–55–S

Ranges of the Chukchi/Bering Seas and Southern Beaufort Sea Polar Bear *(Ursus maritimus)* Populations



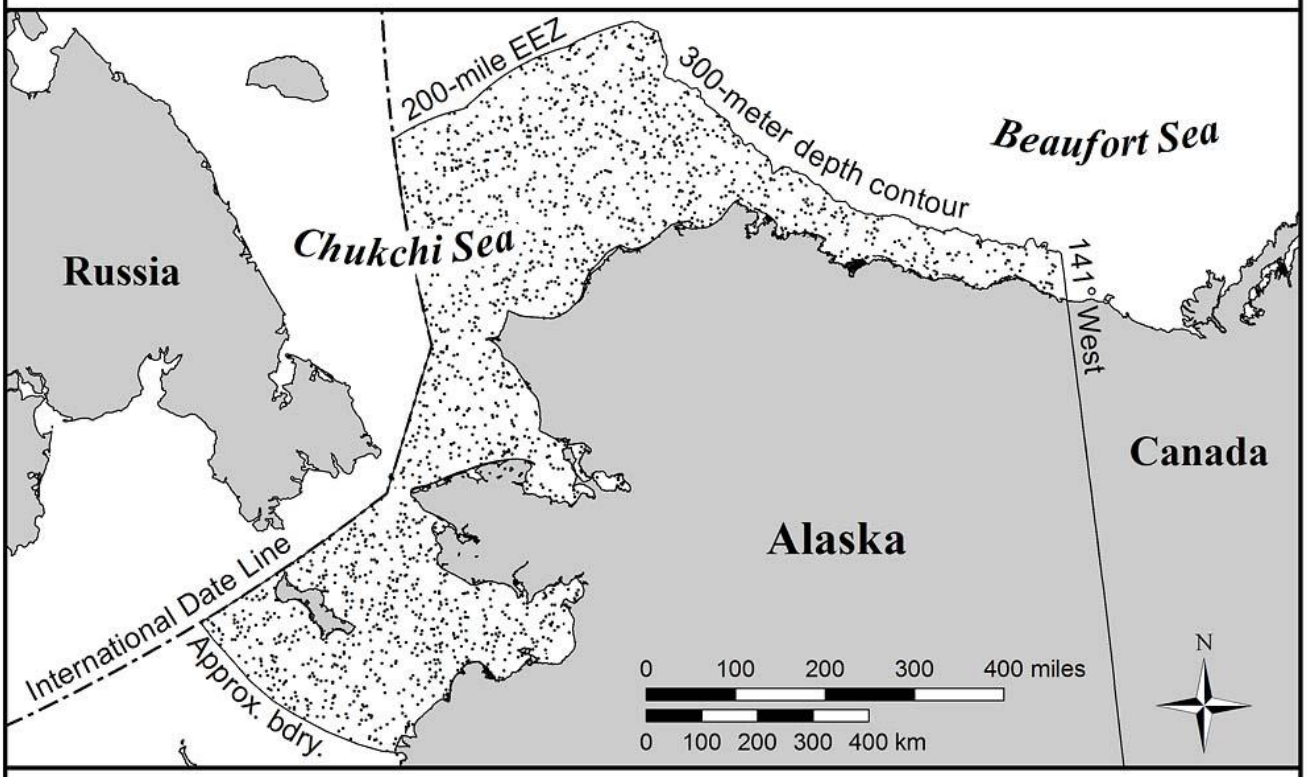


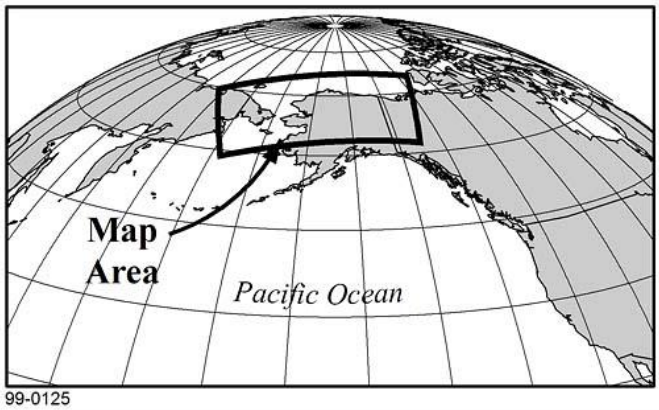
Population Contours

- Chukchi/Bering Seas (95%)
- Southern Beaufort Sea (95%)

99-0128

Unit 1: Sea Ice Critical Habitat of the Polar Bear *(Ursus maritimus)*



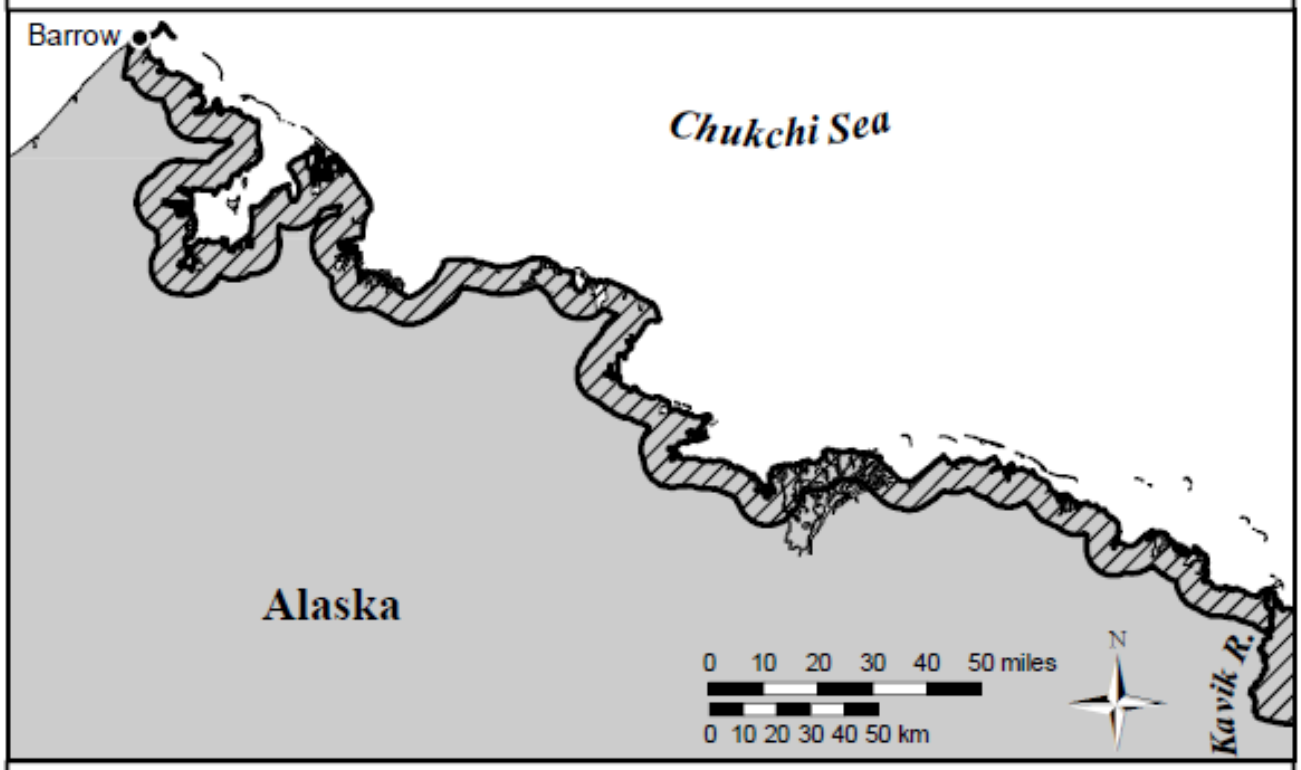


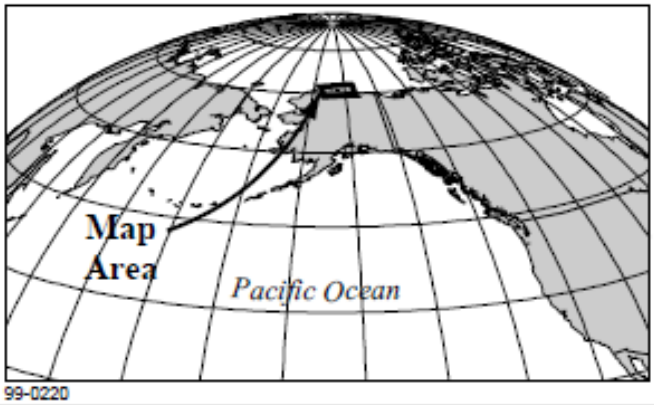
99-0125

Legend

Unit 1 - Sea ice habitat

Unit 2 (west half): Designation of Denning Critical Habitat for the Polar Bear *(Ursus maritimus)*



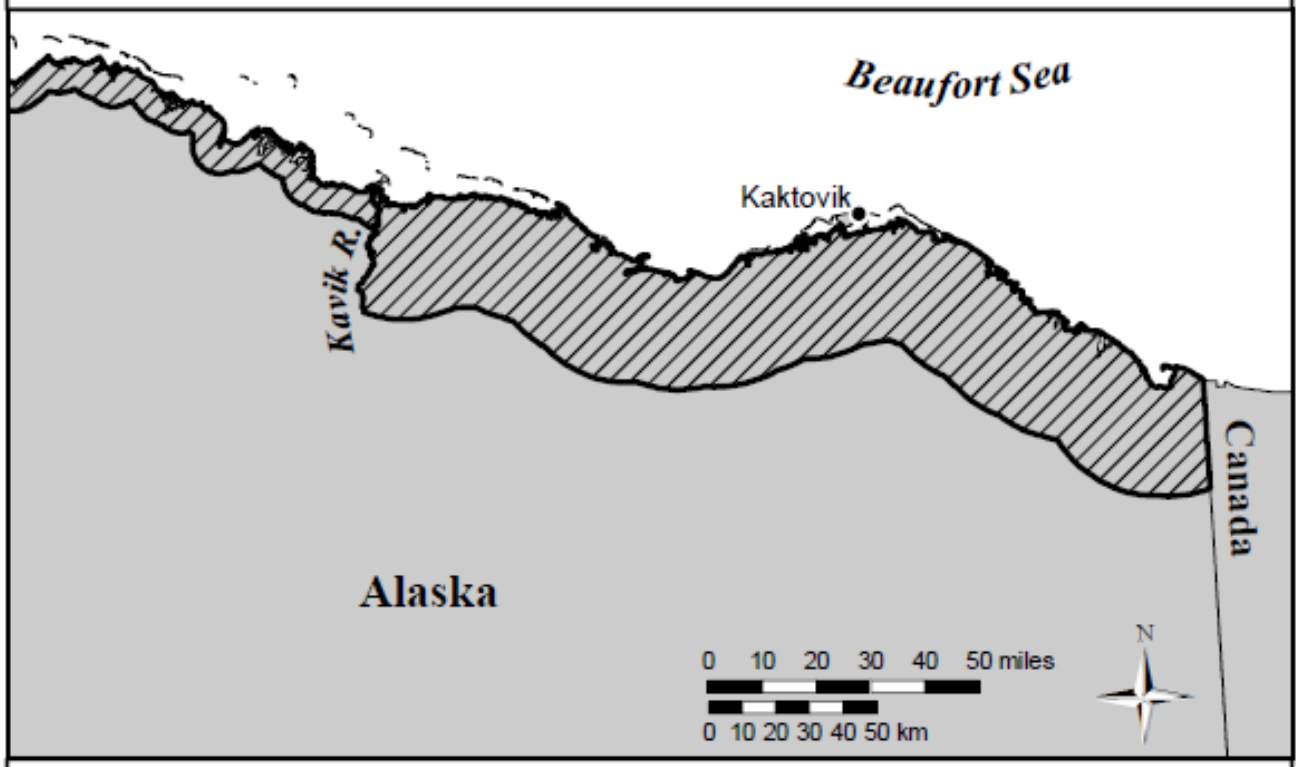


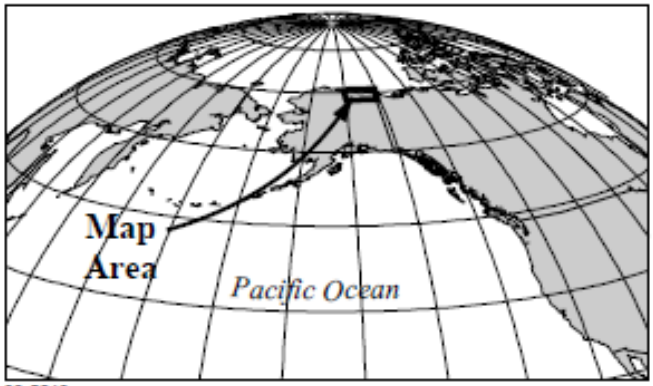
99-0220

Legend

Unit 2 - Denning critical habitat

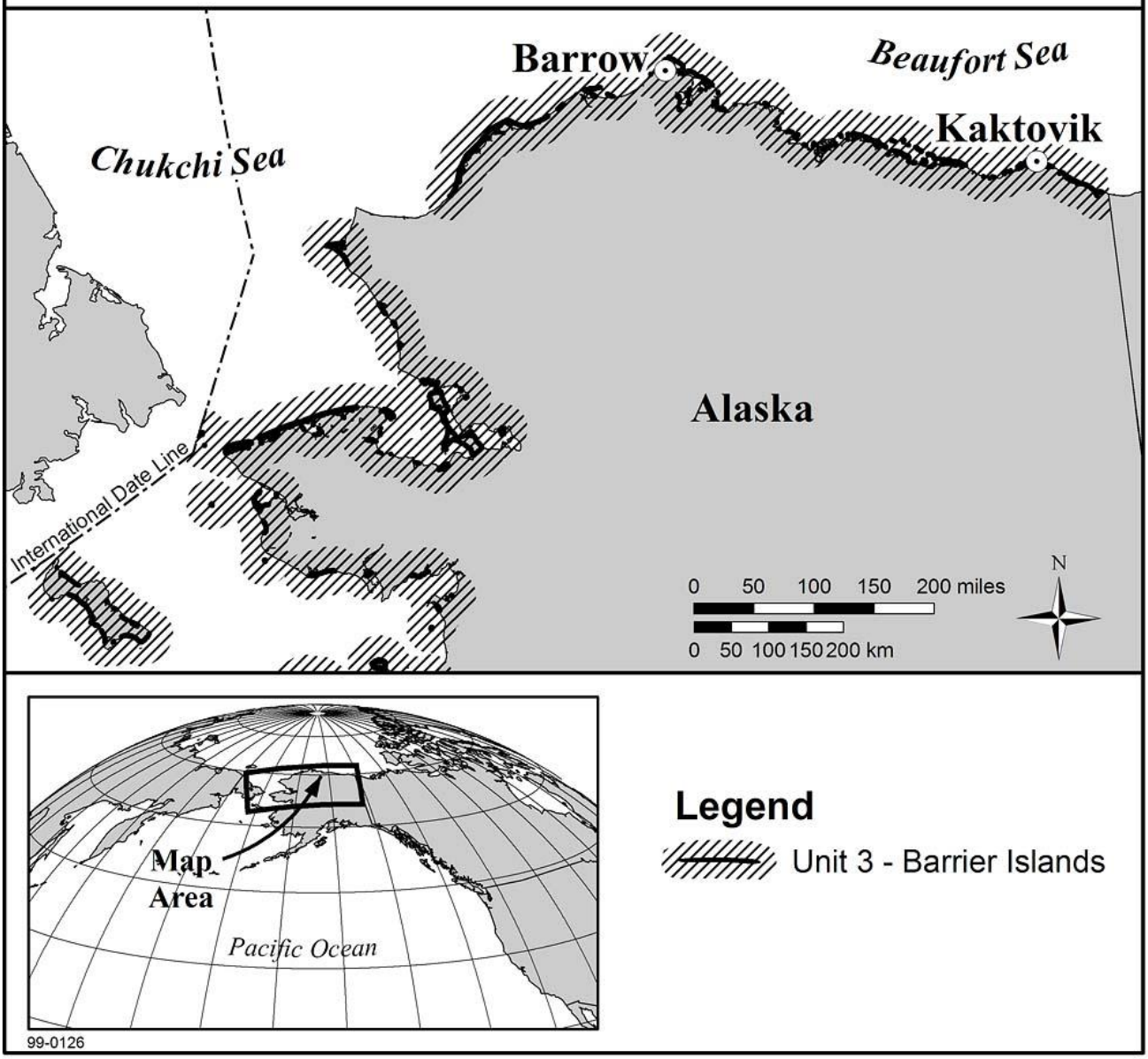
Unit 2 (east half): Designation of Denning Critical Habitat for the Polar Bear *(Ursus maritimus)*





99-0219

Legend

Unit 2 - Denning critical habitat

Unit 3: Barrier Island Critical Habitat of the Polar Bear *(Ursus maritimus)*