STATE OF ALASKA

SEAN PARNELL, GOVERNOR

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

P.O. BOX 115526
JUNEAU, AK 99811-5526
PHONE: (907) 465-4100
FAX: (907) 465-2332

December 28, 2009

Public Comments Processing
Atten: FWS-R7-ES-2009-0042
Division of Policy and Directives Management
U.S. Fish and Wildlife Service
4401 N. Fairfax Dr., Suite 222
Arlington, VA 22203

Re: Comments on the Proposed Designation of Critical Habitat for the Polar Bear (*Ursus maritimus*) in the United States

Dear Sir or Madame:

On October 29, 2009, the U.S. Fish and Wildlife Service (Service) published a proposed critical habitat designation for the polar bear (*Ursus maritimus*). 74 Fed. Reg. 56058 (Oct. 29, 2009). These comments on the proposed critical habitat designation represent the consolidated comments for the State of Alaska based on input from the Alaska Department of Fish and Game, Alaska Department of Natural Resources, Alaska Department of Environmental Conservation, and the Alaska Department of Law. Please consider and include these comments within the administrative record for the polar bear critical habitat designation.

I. Introduction

The State of Alaska is the only state in the United States having polar bears within its jurisdiction. Notwithstanding the decision to list the polar bear under the Endangered Species Act, the State has sovereign trustee responsibilities with respect to this species and takes an active role in protecting and conserving the polar bear and its habitat.

The State has objected to, and is litigating, the decision to list polar bears as threatened under the Endangered Species Act. Given our opposition to the listing, we do not support designation of critical habitat to support the listing at this time. Based on our review of the proposed rule and the federal regulations for designating critical habitat under the ESA at 50 C.F.R. § 424, the State has concluded that designating critical habitat for polar bears is not now prudent because it is not based on the best scientific data and, given existing state and federal permitting requirements and protections, there are no special management considerations or protection currently required. This said, we understand the need to comment on the proposed designation.

With this in consideration, the State continues its involvement in ESA processes and seeks means to adequately conserve the polar bear. The State has thus provided these comments to assist in the development of the polar bear critical habitat designation.

II. Comments on Proposed Critical Habitat Designation

A. Standards Generally Applicable to Critical Habitat Designation

The ESA directs the Service to designate critical habitat, to the extent determinable, for species listed as endangered or threatened under the Act. 16 U.S.C. § 1533(a)(3)(A). The ESA defines "critical habitat" as

> (i) the specific areas within the geographical area occupied by the species, at the time it is listed . . . on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protections; and
>
> (ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of this Act, upon a determination by the Secretary that such areas are essential for the conservation of the species.

16 U.S.C. § 1532(5)(A). Except in special circumstances as determined by the Service, "critical habitat shall not include the entire geographical area which can be occupied by the threatened or endangered species." 16 U.S.C. § 1532(5)(C).

The designation is required to be based on "the best scientific data available" considering "the economic impact, and any other relevant impact, of specifying any particular area as critical habitat." *Id.* § 1533(b)(2). Any area otherwise qualifying for designation as critical habitat may be excluded from designation if the benefits of excluding the area outweigh the benefits of including the area, unless excluding an area would result in the extinction of the species concerned. *Id.*

Areas where the listed species currently is not present may be designated as critical habitat only upon an express determination that the specific area outside the geographical area occupied by the species at the time it is listed is "essential for the conservation of the species." *Id.* § 1532(5)(A)(ii). The Service may decline to designate critical habitat if doing so would not be prudent (*i.e.*, where publicizing the location of a species is likely to lead to illegal collection) or where critical habitat is not determinable. *Id.* § 1533(a)(3)(A); *see also* 50 C.F.R. § 424.12(a).

Service regulations governing critical habitat designation require that critical habitat rulemaking be based on a determination that the geographical areas designated possess the physical and biological features essential for the conservation of the species. *See*

50 C.F.R. § 424.12(b). Additionally, critical habitat must be defined "by specific limits using reference points and lines as found on standard topographic maps of the area. . . . Ephemeral reference points (e.g., trees, sand bars) shall not be used in defining critical habitat." 50 C.F.R. § 424.12(c). Lastly, areas outside the geographical area presently occupied by a species may be designated as critical habitat "only when a designation limited to [the species'] present range would be inadequate to ensure the conservation of the species." *Id.* § 424.12(e).

B. Specific Comments on Proposed Polar Bear Critical Habitat Designation

1. The Service Should Coordinate Designation of Polar Bear Critical Habitat with the State and Must Provide Justification for the Designation of Critical Habitat Inconsistent with These Comments

Under ESA Section 4(i), if the Service issues a final regulation that conflicts with comments submitted by a state agency (which under the Act means "any state agency, department, board, commission, or other governmental entity which is responsible for the management and conservation of fish, plant, or wildlife resources within a state"), then the Service "shall submit to the state agency a written justification for [its] failure to adopt regulations consistent with the agency's comments." 15 U.S.C. § 1533(i).

Congress intended states to have an important role in the implementation of the ESA. The Senate Report on the legislation that ultimately became the 1982 Endangered Species Act amendments highlighted the requirement that the Service provide a state agency with actual notice of any proposed regulation concerning the listing of species, and invite the comment of that agency on the proposed regulation, just as is required in the enacted version of ESA Section 4(i).

As that Senate Report noted: "The involvement and advice of such State agencies in the Federal regulatory process is crucial *and must not be ignored*." S. Rep. No. 97-418, at 12 (1982) (emphasis added). Similarly, in the promulgation of the ESA listing regulations in 1984, the Service noted that the requirement in 50 C.F.R. § 424.18(c) that implements ESA Section 4(i) requires "that State agencies be adequately informed of the basis for any action that is not in agreement with that agency's recommendation." 49 Fed. Reg. 38900, 38906 (Oct. 1, 1984).

Next, in the 1994 Notice of Interagency Cooperative Policy Regarding the Role of State Agencies in Endangered Species Act Activities, 59 Fed. Reg. 34275 (July 1, 1994), the Service stated that it is the policy of the Service in species listing activities to "[u]tilize the expertise and solicit the information of State agencies in preparing proposed and final rules to: . . . designate critical habitat."

Thus, both Congress and the agency itself recognized the importance of state agency input and the importance of adequately informing the state agency of the basis of any action not in agreement with the agency's recommendations or comments. Here, the Service has failed to coordinate with the State and its political sub-divisions in the development of the proposed designation of polar bear critical habitat. Despite being the

only state having polar bears within its jurisdiction, there was no effort to consult in a meaningful manner with the State or its political subdivisions on the development of the proposed rule. The State and its political subdivisions could have provided information useful in the development of this proposal if coordination had occurred.

Pursuant to the ESA, the Service must consider these comments during its decision-making process and provide the requisite written justification to the State for any issues in the final designation of critical habitat that conflict with these comments.

2. The Proposed Critical Habitat Designation is Too Expansive

Overall, the State objects to the proposal to designate 200,541 square miles of Alaska and its adjacent coastal waters as critical habitat for polar bears. We question the need for such a large designation, the largest ever designated for a species. Critical habitat, by definition, is that area that contains the habitat features essential for the conservation of the species. The evidence presented in the proposed rule is insufficient to substantiate the need to designate nearly the entire occupied range of polar bears in the United States as essential for their conservation.

Identifying critical habitat as the occupied range is in contrast to the assumptions of critical habitat delineation for other migratory or landscape species, including some recently listed species in Alaska. For example, spectacled eider and Steller's eider critical habitat was defined for each species according to important life history attributes, similar to important life history attributes for polar bears. Yet not every area where these birds might be found in Alaska lands and waters was defined as critical habitat. Another example is the recently designated critical habitat for northern sea otters. In this case, the Service designated a narrow strip of coastal habitat that offered protection from killer whale predation rather than designating the entire occupied range. The Service should explain the apparent different and expansive approach used for polar bears in context to their other designations for landscape and/or migratory species.

A more reasoned and rational approach would be to assess the main conservation threats identified in the listing decision and conduct a temporal and geographic analysis of the occupied range to determine those areas and time periods that are most critical for designation. The Service could enlist Department of the Interior – Alaska Science Center staff and other scientists to perform the necessary spatio-temporal analyses under the direction of Service staff to develop an approach for delineating critical habitat consistent with other ESA designations and consistent with a prudent conservation approach. We understand such an analysis would take time and that you are under a court mandated deadline; however, given the likely level of impacts to Alaska that such a designation could result in, this supporting analysis should be completed to fulfill the Service's duty to use the best scientific data available.

3. The Proposed Designation Does Not Consider the Best Scientific Data Available

In designating sea ice critical habitat, the Service is not relying on the best scientific data available in assessing sea ice extent. The Service is relying almost exclusively on poorly performing computer climate models to predict future habitat losses. The models used by the Service have demonstratively poor forecasting abilities in the short-term (5-10 years), and at the mid-term (30-50 years). Additionally, the climate models demonstrate an inability to accurately hindcast observed temperatures for the arctic.

The Service arbitrarily chose the worst case scenarios for sea ice loss and has failed to consider all science available to them when designating sea ice critical habitat. We request that the Service take a more critical look at the assumptions made for the uncertainties in climate models and the unpredictability of natural variation, and that it incorporate all credible, relevant scientific information available into their decision on designating critical habitat for polar bears as outlined in Attachment 1.

The Service should also explain how critical habitat for sea ice that changes seasonally and annually will be determined when the Resource Selection Function identified three criteria: (a) >50% ice concentration, (b) near leads, open water, or permanent or ephemeral polynyas, and (c) in water depths of <300m. Absent a system for determining when ice meets these criteria, the Service appears to have fallen back on a standard of all ice that is located in water <300m is essential. The justification for excluding the first two criteria is arbitrary and not substantiated.

We also find the inclusion of areas such as Norton Sound as critical sea ice habitat, when this area is not even within the range of the species as mapped, unwarranted. Again, this approach is arbitrarily different than the method used by the Service when designating critical habitat for other wide-ranging landscape species such as the spotted owl and Canadian lynx.

There is also little evidence presented to substantiate the need to establish broad geographies associated with terrestrial denning areas (Unit 2) and barrier islands (Unit 3) as critical habitat areas. We do not disagree that, within these broadly defined geographies, there may be use by bears for either denning or general rearing, however not all areas are equally used and thus of equal conservation value. Some barrier islands (e.g., Stump, Egg, Challenge, and Gull islands) are aggrading, primarily gravel islands with low profile that are primarily used for loafing and movements along the coast. Others (e.g., Pingok, Cottle, Howe, Tigvariak, Flaxman) are tundra remnants that have high, steep banks that provide excellent denning habitat. The former may be used but not necessarily essential; whereas, the latter are probably essential now and may become more important in the future.

The scientific justification for defining barrier island habitat with no apparent documentation of use (e.g., Norton Sound to Hooper Bay) using the same criteria to areas with documented use (e.g., Beaufort Sea) needs explanation. These barrier islands in the southern portion of the proposed barrier island habitat are outside of the mapped range

(Figure 1) and likely have little or no documented occupancy by polar bears in recent decades. The rationale to afford the same protection for barrier islands off of Hooper Bay as to those between the Canadian border and Barrow is poorly explained. Given this, we recommend excluding these barrier islands that may be very rarely visited and for which no occupancy data exist. Traditional ecological knowledge or other information is available and should be also considered.

A better approach would be to map existing use of these habitats by bears both spatially and temporally and to designate only those areas and times that are frequently used as critical for conservation. We note that, in the event lesser used areas are actually used by bears for denning or rearing, these uses are adequately protected by existing federal, state, and local regulatory programs (refer to Attachment 2). We also note that in your listing decision, that neither denning nor general rearing were identified as factors that necessitated the need to list polar bears. In summary, insufficient data were provided to justify the need to designate Units 2 and 3 in their entirety as critical habitat.

4. The Proposed Designation Includes Areas Not Suitable or Necessary as Critical Habitat

We note that because broad geographies were proposed for designation, areas such as the Village of Barrow (and other villages within the proposed designation) and the main oil/gas field complex at Prudhoe Bay were proposed for designation despite the fact that your agency permits hazing of bears away from these areas. Proposing an area as critical habitat from which bears are hazed from using is counter-intuitive and illogical. We do not see the benefit of having bears den or rear in areas such as these. Areas such as these should be removed from the proposed designation.

We also question the need to designate the entirety of Saint Lawrence Island as critical habitat. We acknowledge that bears may roam near the coastline on the island, but are not aware on any significant use of the inland portions of the island. We are also unaware of any bears actually using the uplands of the island for denning. At a minimum, only areas within 1 mile of the coastline of Saint Lawrence Island should be designated. Also, the Villages of Savoonga and Gambell should be excluded based on the rationale provided in the previous paragraph.

We also question the necessity to designate as critical habitat for denning 20 miles inland east of the Canning River. We note that based on the published literature[1] 20 of the 30 historically observed polar bear dens, or 67%, east of the Canning River occurred within 5 miles of the coastline. The number increased to 25 out of 30, or 83% within 10 miles of the coast. Based on this, we suggest that a more appropriate inland boundary is 5 or 10 miles, not the 20 proposed. We also note that portions of this area are protected from development by congressionally designated wilderness whereas other potions are

[1] Amstrup, S.C. 2002. Movements and population dynamics of polar bears. Pages 65-70 *in* D.C. Douglas, P.E. Reynolds, and E.B. Rhode, editors. Arctic Refuge coastal plain terrestrial wildlife research summaries. U.S. Geological Survey, Biological Resources Division, Biological Science Report USGS/BRD/BSR-2002-0001.

protected by congressional mandates. Thus, these areas do not require additional special management considerations or protections that would support their designation as critical habitat.

5. Other Comments on the Proposed Designation

The document would also benefit from a glossary or list of definitions. While the key term, critical habitat is defined, other important terms and/or phrases are left up to the reader to define or interpret. This is unfortunate because the criteria, size and scope of the proposed critical habitat is directly related to some undefined terms. Important words or phrases that would benefit from being defined include: data, occupied/occupancy, preference, and essential. It seems that among the most important concepts in need of explanation is occupancy/occupied. This is because much of the policy decision-making comes from understanding and defining areas that are occupied at the time of listing and are essential for species conservation along with areas that are not occupied at the time of listing and are also essential for species conservation. A review of the literature cited section for the critical habitat review indicates no references related to occupancy/occupancy modeling. Yet such an analysis seems key to understanding/reanalyzing the primary polar bear data and literature in terms of determining critical habitat.

The proposal is also inexplicably silent on the subsistence/hunter harvest of polar bears, yet this activity could change habitat use or occupancy by polar bears in some locations. If there are key concentration or movement areas used by hunters, these could be population sinks rather than critical habitat necessary for the recovery of the species. Because subsistence harvest of polar bears remains, this should be analyzed relative to policy decisions about defining critical habitat.

6. Economic Effects need to be considered in the Proposed Designation

When designating critical habitat the Service must take into consideration the economic impact, the impact on national security, and any other relevant impact, of specifying any particular area as critical habitat. Additional regulation of polar bears and their habitat under the ESA will adversely impact the State through delay and uncertainty for onshore and offshore oil and gas exploration and development in the Beaufort and Chukchi Seas of Alaska's Outer Continental Shelf ("OCS"). Areas of the Beaufort and Chukchi Seas are within the proposed designation. The oil and gas industry is Alaska's largest non-governmental industry[2], with an estimated 90 percent of the state's unrestricted revenues for 2009 expected to come from oil and gas development[3]. The State receives direct pecuniary benefit from federal lease sales on the OCS, and although all leases acquired by industry in the Chukchi Sea may lie outside the three-to-six mile zone, the indirect

[2] Alaska Oil & Gas Association, *Straight Talk*, June–July 2008, http://www.aoga.org/newsletter/june_newsletter.pdf.

[3] Alaska Department of Revenue, Revenue Sources Book, December 2008, http://www.tax.alaska.gov/programs/documentviewer/viewer.aspx?1531f.

benefits of development of federal lands, including the OCS, remain important because adjacent State lands will be more economic to develop. The result is more employment and commerce in the State providing tax revenues to the State and its municipalities that can be used to provide services to the people of Alaska. The OCS is important to the future of the State because of these impacts as well as to increase throughput through the TransAlaska Pipeline System which benefits the state. Given the probable impact of the proposed designation on the State and local economies, we request the areas and activities detailed in Attachment 3 be considered for exclusion for the proposed designation.

Some of these areas identified in Attachment 3 also include areas critically important to national security. As Secretary Salazar noted in his December 7, 2009 news release conditionally approving Shell Oil's exploration plan for certain Chukchi Sea leases: "*A key component of reducing our country's dependence on foreign oil is the environmentally-responsible exploration and development of America's renewable and conventional resources*." As Secretary Salazar rightly notes, these areas are critically important not only to the State for economic reasons, but also for national security in terms of reducing our nation's dependency upon foreign oil. In addition to considering areas for economic exclusion, we also request these areas be considered for exclusion based on national security reasons.

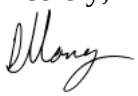
In addition to these general comments, we also provide more detailed biological comments in Attachment 4.

III. Conclusion

In closing, the State questions the need to designate the large area proposed by the Service as critical habitat for the conservation of the polar bears in and off Alaska. We request that the Service assess the option of excluding select areas from the proposed designation based on economic and/or national security reasons. The State also reserves the right to comment on any later economic analysis of critical habitat in the context of the proposed rule and requests that final action not be taken on the designation of critical habitat until the economic analysis is completed and published for public review and comment. Finally, Alaska understands that others, including the North Slope Borough, the Arctic Slope Regional Corporation, and the Alaska Oil and Gas Association, and others with similar interests, have filed comments on this proposed designation, and Alaska urges the Service to carefully consider the comments and points raised in these comments.

If you have any questions, please feel free to contact me.

Sincerely,



Doug Vincent-Lang, ESA Coordinator
Alaska Department of Fish and Game

cc: Mike Nizich, Cora Campbell, Denby Lloyd, Tom Irwin, Larry Hartig, John Katz, Senator Lisa Murkowski, Representative Don Young, Senator Mark Begich

Attachment 1
The Service Must Explain the Assumptions and Methodology Used in the Sea Ice Modeling it Relies Upon in the Proposed Rule and Must Rely on the Best Scientific Data Available in its Modeling Analysis

Critical habitat designations are required to be based on "the best scientific data available" considering "the economic impact, and any other relevant impact, of specifying any particular area as critical habitat." 16 U.S.C. § 1533(b)(2). Further, when an agency uses a model in its decision-making process, it must "explain the assumptions and methodology used in preparing the model and, if the methodology is challenged, must provide a complete analytic defense." *United States Air Tour Ass'n v. F.A.A.*, 298 F.3d 997, 1008 (D.C. Cir. 2002) (quoting *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 535 (D.C. Cir. 1983)). An agency's use of a model is arbitrary if it has no rational relationship to the reality it purports to represent. *Greater Yellowstone Coal. v. Kempthorne*, 577 F. Supp. 2d 183, 198 (D.D.C. 2008).

In the proposed rule designating critical habitat for the polar bear, the Service states that that there are two main sources of uncertainty that should be considered when assessing sea ice habitat loss: (1) uncertainties in the construction of climate models, and (2) the unpredictable natural variability of the climate system. After acknowledging these concerns the Service ignores the unreliability of the model predictions by making two assumptions. The first assumption is that each of the 13 climate models used in their analysis predicts declines in the coverage and extent of sea ice. The second assumption is that the "climate simulations are believed to be more reliable at continental and larger scales" On both accounts these factors work against the Service arguments rather than support the case regarding the proposed sea ice habitat designations in the Beaufort and Chukchi Seas. The Service must explain its assumptions and show how they influence the Service's sea ice modeling analysis, and show how the Service's use of modeling comports with reality

Uncertainties in construction of the climate models

Climate models operate on scales of tens or even hundreds of kilometers and are poor tools for predicting climate characteristics such as clouds, precipitation, or land cover changes.

> DeWeaver (2007) states that while most aspects of climate simulations have some degree of uncertainty; projections of Arctic climate change have relatively higher uncertainty. **This higher level of uncertainty is, to some extent, a consequence of the smaller spatial scale of the Arctic, since climate simulations are believed to be more reliable at continental and larger scales**. **The uncertainty is also a consequence of the complex processes that control the sea ice, and the difficulty of representing these processes in climate models** (emphasis added). The same processes which make Arctic sea ice highly sensitive to climate

> change, the ice-albedo feedback in particular, also make sea ice simulations sensitive to any uncertainties in model physics.

Several published scientific studies show the unreliability of using climate models to predict habitat loss due to the coarse resolution used by climate models.

> Over the past decade, several models have been developed to predict the impact of climate change on biodiversity. Results from these models have suggested some alarming consequences of climate change for biodiversity, predicting, for example, that in the next century many plants and animals will go extinct and there could be a large-scale dieback of tropical rainforests. However, caution may be required in interpreting results from these models, not least because their coarse spatial scales fail to capture topography or "microclimatic buffering" and they often do not consider the full acclimation capacity of plants and animals. Several recent studies indicate that taking these factors into consideration can seriously alter the model predictions. (Kathy J. Willis and Shonil A. Bhagwat 2009).

> In another study, (Randin et al., 2008*)* assessed the influence of spatial scale on predictions of habitat loss by species distribution models (SDM). Their bioclimatic model attempted to predict the survival of alpine plant species in the Swiss Alps. When the model was run using 16 km by 16 km (10 mile by 10 mile) grid cells the model predicted a loss of all suitable habitats during the 21st century. When they changed the model's grid to a much finer 25 m by 25 m (80 ft by 80 ft) cell size the same model predicted persistence of suitable habitats for up to 100% of the plant species. The authors attributed these differences to the failure of the coarser spatial-scale model to capture local topographic diversity, as well as the complexity of spatial patterns in climate driven by topography.

Nine of the eleven models that were used by the Service in determining habitat loss fail to accurately model outgoing radiation. The Earth Radiation Budget Experiment Satellite (ERBE) observed response and weather balloon data shows that more outgoing radiation escapes to space as temperatures rise, rather than being trapped as the computer modelers find. CO_2 emissions do not trap much heat and do not cause significant global warming. In a peer-reviewed scientific article, Dr. Lindzen, Professor of Meteorology at the Massachusetts Institute of Technology and Dr. Choi, Postdoctoral research associate at M.I.T. compared the performance of eleven atmospheric models of the predicted outgoing radiation verses the ERBE observed data (Lindzen and Choi 2009).

Unpredictable natural variation

Climate models have historically demonstrated poor performance in forecasting (see figure 1) and hindcasting (see figure 2) temperature trends in the near and long terms.

> DeWeaver (2007) also discusses natural variability of the climate system. He states that the atmosphere, ocean, and sea ice comprise a ‘‘nonlinear chaotic

system'' with a high level of natural variability unrelated to external climate forcing. Thus, even if climate models perfectly represented all climate system physics and dynamics, **inherent climate unpredictability would limit our ability to issue highly, detailed forecasts of climate change, particularly at regional and local spatial scales, into the middle and distant future** (emphasis added).

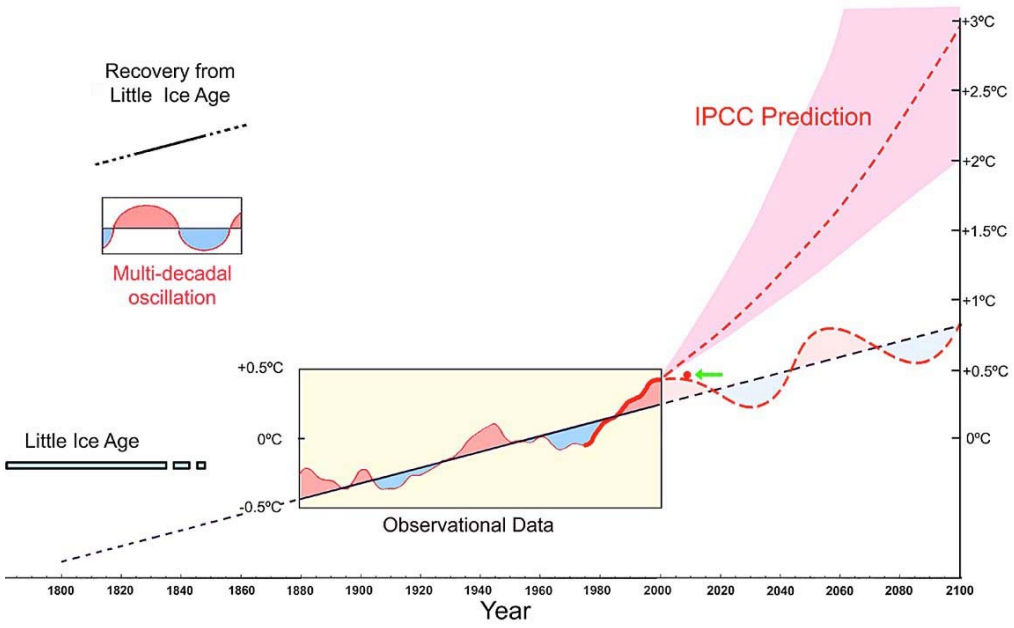


Figure 1. The figure shows that the linear trend between 1880 and 2000 is a continuation of recovery from the LIA. It shows also the predicted temperature rise by the IPCC after 2000. Another possibility is also shown, in which the recovery from the LIA would continue to 2100, together with the superposed multi-decadal oscillation. This possible progress beyond the peak of an oscillation could explain the halting of the warming after 2000. The observed temperature in 2008 is shown by a red dot with a green arrow. (Akasofu 2009)

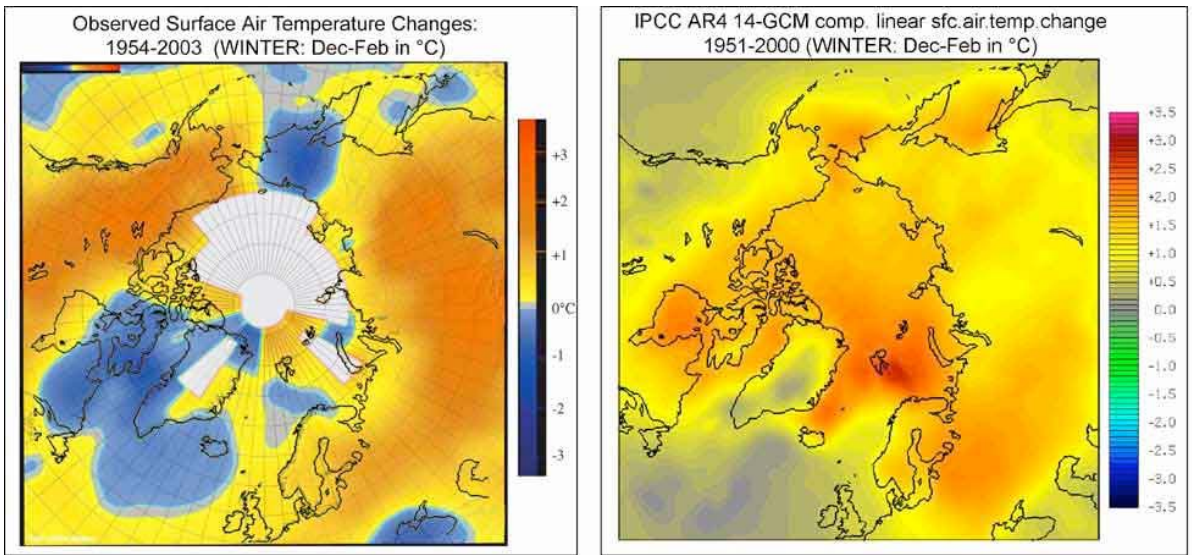


Figure 2. Comparison of the observed distribution of temperature changes (ACIA, 2004) and the simulation (hindcasting) by the IPCC arctic group (Chapman, 2005). Akasofu 2009

> It is natural to consider that this surprising result was due to the fact that the GCMs might still not be advanced enough for hindcasting. However, this possibility is inconceivable, because the increase of CO2 measured in the past is correctly used in the hindcasting, and everything we know about the CO2 effects so far is included in the computation. If the greenhouse effect caused the warming, the observed pattern should be reproducible at least qualitatively by these models, even if the reproduction is not perfect… If 14 GCMs cannot reproduce prominent warming in the continental Arctic even qualitatively, perhaps much of this particular warming is not caused by the greenhouse effect of CO2 at all… This would be because 14 GCMs do not contain the processes that caused the continental Arctic warming/cooling. (Akasofu 2009).

There is a strong statistical relationship between the cyclic Pacific Decadal Oscillation (PDO) and global temperature. The PDO is a 60 year cycle of warming and cooling of the Pacific Ocean. In every instance over the last 150 years when the PDO was in the cool phase the global temperature decreased, and when the PDO was in the warm phase the temperature increased. The PDO has shifted back to cool and the air temperature is falling again. The Service does acknowledge changes in oceanic circulation as being a factor in sea ice cover and extent but it appears to arbitrarily focus on the warm phases of these patterns and does not address what occurs with a shift to a cold state.

Conclusions regarding climate models

The Service relied on 13 climate models it states most accurately depicted sea-ice extent; and were chosen from the 20 models in the IPCC AR4 report that takes into account sea

ice. The Service attributes particular significance to the CCSM3 model which predicts some of the most rapid sea ice loss. These models are not accurate enough to forecast sea ice cover and extent at the temporal and spatial scales necessary to designate the critical habitat for the polar bear.

The Service states that "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." The Service has failed to consider all the science in addressing sea ice critical habitat in designating the furthest extent of sea ice in US Arctic waters. The State believes that instead the Service should respect the temporal and spatial nature of the sea ice and limit critical habitat designation to the PCE for sea ice, which is defined as the edge of the sea ice, not its full extent. Tools such as the Advanced Microwave Scanning Radiometer - Earth Observing System (AMSR-E) sensor on NASA's Aqua satellite monitor the extent and cover of sea ice daily and can be used by the Service within each season to define what protections are needed for that specific season.

The State asks that the Service seriously consider and incorporate information from the following references which question the reliability of climate models in predicting habitat loss. These references should be considered and included as the best scientific data available on which the Service bases its critical habitat designation

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Attachment 2
Designation of Critical Habitat for the Polar Bear is Not Required Because Existing Regulatory Measures are Sufficient to Provide Protection for Polar Bears

Under the ESA, critical habitat consists of specific areas whose physical or biological features are "essential to the conservation of the species" and "*which may require special management considerations or protections*." 16 U.S.C. § 1532(5)(A) (emphasis added). Those areas which do not require "special management considerations or protections" are not "critical habitat" and are not to be designated as such under the ESA. *Id.*

Under the proposed rule, the three proposed polar bear critical habitat units currently have existing state and federal protections that have and continue to provide protection for polar bears and their habitat. In combination with federal and local regulatory measures, these regulations and associated protections negate the need to designate critical habitat areas as defined in the proposed rule. Further "special management considerations or protections" are not required, thus, under the ESA, critical habitat should not be designated for these areas.

The proposed rule provides three main potential impacts to those features that are essential to the conservation of the species and may require special management considerations or protection. Potential impacts to essential features are listed in proposed rule as 1) Reduction in Sea Ice due to Climate Change, 2) Petroleum Hydrocarbons, and 3) Shipping and Transportation. The proposed rule seeks to pass the required "may require special management considerations or protections" test for designating critical habitat by selecting the potential impact of "Reduction in Sea Ice due to Climate Change" that the Service acknowledges is "beyond the scope of this Act" yet it "will to continue to evaluate any special management consideration that may be needed for polar bears and their habitat." It is unclear if this means until the final rule is published or in perpetuity. Regardless, we fail to recognize how this establishes compliance with the requirement "may require special management considerations or protections" as it is open-ended and speculative.

In terms of potential impacts to the proposed critical habitat essential features from petroleum hydrocarbons and shipping and transportation, State oversight and permitting, in addition to federal oversight on federal waters where sea ice is present, provides procedures, impacts analysis, and required mitigation measures to ensure protection of fish and wildlife, and their habitat. The proposed rule does not recognize or analyze existing state protections in the context of "special management considerations or protections" because, in drafting the proposed rule, the Service did not solicit nor utilize the expertise and information from the State agencies as required by Service policy. The Service's "Policy Regarding the Role of State Agencies in Endangered Species Act Activities" provides that it is the policy of the Service to "[u]tilize the expertise and solicit the information of State agencies in preparing proposed and final rules to . . . designate critical habitat." 59 Fed. Reg. 34275 (July 1, 1994). It is incumbent upon the Service to consult with the State and utilize State management laws, programs, and

regulations in determining requirements for special management considerations or protections that may be needed to protect essential features of critical habitat.

Through land use planning, permitting, and mitigation measures, the State implements stringent and effective regulatory mechanisms that serve to protect polar bears, their key habitat, their prey, and other fish and wildlife species. State regulatory mechanisms also serve to integrate with federal marine mammal protection laws including the Marine Mammal Protection Act and Endangered Species Act.

The following information is provided in the context of two areas of responsibility implemented by the State 1) Oil and Gas leasing and 2) Area Planning. We also reference and incorporate by reference in these comments our previously provided comments on existing state regulatory protections that were submitted as part of our April 9, 2007 and October 22, 2007 comments on the proposed rule to list the polar bear as a threatened species.

OIL AND GAS LEASING

Alaska Statute 38.05.035(e) provides the State with the authority to impose conditions or limitations, in addition to those imposed by statute, to ensure that a resource disposal is in the State's best interests. Consequently, to mitigate potential adverse social and environmental effects of specific lease related activities, the State has developed mitigation measures and conditions plans of operation, exploration, or development, and other permits based on these mitigation measures.

A process is in place to ensure that mitigation measures address current issues and incorporate new information as it becomes available. Annually, the State requests new information from agencies and the public. The State seeks information that has become available since the most recent mitigation measures were issued. This information may address fish and wildlife species and their habitats in the area; current and projected uses in the area, including uses and value of fish and wildlife such as subsistence and recreation; reasonably foreseeable cumulative effects of exploration, development, production, and transportation for oil and gas on the area, including effects on subsistence uses, fish and wildlife habitat and populations and their uses, and historic and cultural resources; lease stipulations and mitigation measures, including any measures to prevent and mitigate releases of oil and hazardous substances; and air and water quality. The State may then modify or add mitigation measures as necessary to ensure the continued protection of fish and wildlife populations and habitats, and their uses.

A comprehensive list of governmental regulatory programs applicable to offshore oil and gas development in and adjacent to Alaska is available at http://www.mms.gov/alaska/ref/EIS%20EA/Chukchi_FEIS_193/feis_193.htm (*e.g.*, Final Environmental Impact Statement, Oil and Gas Lease Sale 193 and Seismic-Surveying Activities in the Chukchi Sea (OCS EIS/EA MMS 2007-026)(May 2007).

Proposed Beaufort Sea Areawide 2009 oil and gas lease sale

Preliminary Finding of the Director and ACMP Consistency Analysis
http://www.dog.dnr.state.ak.us/oil/products/publications/beaufortsea/bsaw2009_prelim_finding/beaufort_sea_prelim_finding.html

Preliminary Finding Mitigation Measures and Other Regulatory Requirements
http://www.dog.dnr.state.ak.us/oil/products/publications/beaufortsea/bsaw2009_prelim_finding/BS%20PrelimBIF%20Chap09-Mitigation.pdf

North Slope Areawide 2008 oil and gas lease sale

Finding of the Director and ACMP Consistency Analysis
http://www.dog.dnr.state.ak.us/oil/products/publications/northslope/nsaw08-ff_toc.html

Decision of No Substantial New Information (June 26, 2009)
http://www.dog.dnr.state.ak.us/oil/products/publications/northslope/nsaw2009/NS-2009-Decision-NoNewInfo.pdf

LAND USE PLANNNING

The Northwest Area Plan (NWAP) was adopted in October 2008 but is held in abeyance due to granting a request for reconsideration. Though held in abeyance, the NWAP demonstrates DNR's intent to manage state lands to protect polar bears and their habitat.

Management Guideline Q as stated in chapter 2 (page 2-15):

"Grizzly and Polar Bear Denning Sites. Exploration and production activities shall not be conducted within one-half mile of occupied grizzly bear dens, unless alternative mitigation measures are approved by ADFG. Operations must avoid known polar bear dens by one mile. If a polar bear should den within an existing area of development, off-site activities shall be restricted to minimize disturbance. Known den sites can be obtained from the Division of Wildlife Conservation, ADFG. ADFG should be consulted prior to issuing authorizations near existing or possible denning sites."

Land management guidance is also provided by the plan designations. As stated in chapter 3 (page 3-4):

"The habitat designation applies to areas of varied size for fish and wildlife species during a sensitive life-history stage where alteration of the habitat or human disturbance could result in a permanent loss of a population or sustained yield of a species. This land

will remain in state ownership except for areas where a tidelands conveyance to a municipality is allowed under AS 38.05.820 and AS 38.05.825.

This land will be maintained in an undisturbed, natural state except for improvements related to public health, safety, habitat restoration or rehabilitation, and public recreation. Authorizations within areas designated Habitat are not to be considered appropriate unless consistent with the previous objectives. Utilities and roads may be appropriate if designed to maintain habitat functions."

Of the 5.5 million acres of tide and submerged lands in the Northwest Area Plan, 2.6 million are designated Habitat as described above.

Attachment 3
Certain Areas Proposed to be Designated as Critical Habitat Should be Excluded from Designation Because of the Economic and Other Impacts of Specifying Such Areas as Critical Habitat

The ESA provides that designation of critical habitat is required to be based on "the best scientific data available" considering "*the economic impact, and any other relevant impact, of specifying any particular area as critical habitat*." 16 U.S.C. § 1532(b)(2) (emphasis added). The proposed rule designating critical habitat for the polar bear fails to adequately consider the negative impacts of the proposed rule on the State and national economy and on national security, among other impacts.

From an economic standpoint, the following activities of state interest could be affected by the proposed rule:

1. Oil and Gas Leasing in the Beaufort Sea and North Slope Planning Areas
    a. DNR's current 5 year plan is for areawide oil and gas lease sales for the Beaufort Sea and Northslope planning areas, scheduled for 2010, 2011, 2012, and 2013.
2. Existing pipelines, roads, and other industry and local infrastructure project
3. Ports and coastal infrastructure and shipping
4. Coastal Impact Assistance programs
5. Local governments

The impacts of designating critical habitat on these activities must be considered in the Service's designation of critical habitat for the polar bear. Because the economic impacts, the impact on national security, and other relevant impacts of the proposed critical habitat designation are so detrimental to certain state and national interests, we specifically request the following activities be considered for exclusion:

1. All state land onshore and offshore between the Canning River (ANWR) boundary and the Coville River (NPRA) boundary, that includes the following oil and gas units; Point Thomson, Arctic Fortitude, Badami, Beechey Point, Colville River, Dewline, Duck Island, Kuparuk River, Liberty, Milne Point, Nikaitchuq, Northstar, Oooguruk, Prudhoe Bay, Rock Flour, and Sakkan.
2. State and federal offshore oil and gas leases that have economic[4] and national security interests. The OCS is important to the future of the State because throughput through the TransAlaska Pipeline System which benefits the state.
3. A one mile exclusion boundary around all coastal villages and organized municipalities (including those within all organized boroughs) within the proposed designation boundary.

[4] An excellent summary of the economic effects of future offshore oil and gas development in the Beaufort and Chukchi Sea can be found at: http://www.iser.uaa.alaska.edu/Publications/Econ_Analysis_Offshore_O&GDevpt.pdf

Attachment 4
Specific Biological/Ecological Considerations Show that the Proposed Rule is Inconsistent with ESA Standards, Including the Requirement that Designations be Based on the Best Scientific Data Available

General Comments

The Proposed Rule is Based on Limited Scientific Data

The rule should articulate that the underlying data, many scientific publications and underlying knowledge are overwhelmingly based on studies which focused on only adult female polar bears, especially when radiotelemetry results are presented. The Service should mention this early in the proposed rule. While this may not affect the final outcome, many individuals who will read the proposed rule will assume the knowledge is based upon male and female bears.

Specific Comments

The Service's Interpretation of Data, the Assumptions Relied Upon by the Service, and the Service's Policy Judgments in the Proposed Rule Should be Adequately Explained

> Page 56073. It is important to note that "scientific data" do not actually determine anything. Data are data, nothing more. Results come from analysis and interpretation of data. Conclusions are based on the results from analysis of data and other information, such as traditional ecological knowledge, field observations, etc. However, some features that the Service determines to be essential elements of critical habitat for polar bears probably cannot be determined from the best available science. As a landscape species, true experimental science cannot be conducted on polar bears in terms of certain landscape attributes essential for survival; therefore, there will always be a gap in knowledge and determining critical habitat. Since the Federal Register notice seems to be a document written for both the public and scientific communities, it is important to clearly articulate where conservation-based policy decisions begin and where science ends. This is especially important in defining terrestrial denning habitat and barrier island habitat relative to critical habitat. It is a vexing problem to clearly understand which areas of the natural world are essential for the conservation of a particular species. The document would benefit from clearly identifying those points that are accepted by scientists, and those which are more open to differing interpretations. Currently the document is overly assertive. For example, the document states that all lands 5-20 miles inland from the coast are essential to polar bear survival, yet there are few data or research to support this point. The science provides information on dens and their habitat associations, however it is a policy conclusion about what is essential.

The Service Must Limit Its Designation of Critical Habitat for the Polar Bear to Those Areas Essential for the Conservation of the Species and Must Base Its Designation of Critical Habitat on the Best Scientific Data Available

Unit 1: Sea-ice Habitat

1. The first paragraph under "*Sea-ice Habitat Criteria*" describes the dynamic and variable nature of sea-ice on both temporal and spatial scales. This paragraph should explicitly state why all sea ice is considered rather than the areas that bears select: (a) >50% ice concentration, (b) near leads, open water, or permanent or ephemeral polynyas, and (c) in water depths of <300m. Habitat not utilized by the polar bear is not habitat "essential for the conservation of the species," and thus, not to be considered in designating critical habitat under the ESA.

2. On page 56075 last paragraph of Unit 1, first sentence: "Unit 1 contains **PCE number 1**, which is required for feeding, breeding, denning, and movements that are essential for the conservation of polar bears in the United States." This is confusing. Sea ice as described as Unit 1 provides PCEs of feeding, breeding, denning, movement. For clarification it would be better to say: Sea-ice Habitat (Unit 1) includes the physical and biological features essential to the conservation of polar bears by providing areas used for feeding, breeding, denning, and moving.

3. Page 56073.
   - "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 document would benefit from referencing one of the figures here.
   - A reader might assume that this only refers to the United States, but that should be made explicit throughout. If this is related to the maps on pages 56061 and 56083, then this is confusing. In particular, sea ice critical habitat is far larger than that which is mapped in Figure 1 on page 56061.
   - Areas such as Norton Sound are mapped as critical sea ice habitat, yet that area is not even within the range of the species as defined. Under the ESA, critical habitat does not include areas outside the range of the species, unless the Service makes an express determination that such areas are "essential for the conservation of the species." *See* 16 U.S.C. §§ 1532(5)(C), 1533(b)(2). No such determination was made by the Service with regard to areas such as Norton Sound, thus, such areas should not be included as critical habitat.
   - The approach described in this section is different than the method used by the Service when designating critical habitat for other wide-ranging landscape species such as the spotted owl. Given that polar bears occupy all or virtually all of their recent, historic range, is the Service declaring the entire range to be critical habitat? This is a disconnect that warrants a biologically-based explanation. Furthermore, critical habitat under the ESA is limited to only those areas found to be essential to the conservation of the species, and in need of special management considerations and protections, based on the best scientific data available. 16 U.S.C. §§ 1532(5)(A), 1533(b)(2). Generally,

> "critical habitat shall not include the entire geographical area which can be occupied by the threatened or endangered species." *Id.* § 1532(5)(C).

4. Page 56073 – "Sea-ice Habitat Criteria" – Given that sea-ice habitat will change spatially and temporally, we agree that mapping sea-ice is impracticable. Thus, we urge further clarification when defining sea-ice habitat considered essential for polar bear conservation. Service regulations governing critical habitat designation require that critical habitat be defined "by specific limits using reference points and lines as found on standard topographic maps of the area. . . . Ephemeral reference points (e.g., trees, sand bars) shall not be used in defining critical habitat." 50 C.F.R. § 424.12(c). The Service must strive to clearly define critical sea-ice habitat for the polar bear.

   Paragraph three in this section indicates "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 sea ice features." Because the term occupied is not defined, one might assume that the area occupied is therefore determined by the range map on page 56061. Reading further, however, this is terribly confusing because on page 56075 under "Unit 1: Sea-ice Habitat," a different approach is seemingly taken. This is especially relevant to the mapped sea-ice critical habitat on page 56083 (this figure has no apparent figure number). In particular, the southern boundary of proposed sea ice critical habitat extending west from Hooper Bay to the International Date Line and including all of Norton Sound is inconsistent with the first range map in the Federal Register notice. That range map does not extend nearly as far south as the proposed sea ice critical habitat, yet it is apparently based on all of the relevant and available polar bear radiotelemetry data. This discrepancy is not merely mapping error as the additional, proposed sea ice critical habitat includes a vast ocean area. Further reading on page 56075 where sea ice critical habitat is defined indicates that other data/information was used to delineate this southern boundary in the Bering Sea. It states "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. Because this is a key scientific/policy interpretation, we believe it requires additional explanation for the reader to understand the logic applied by the Service. First, the Garner et al. (1990) work is based on 10 adult female polar bears, not all sex and age classes of polar bears as a reader would be led to believe. Second, Figure 3 (parts A and D) from Garner et al (1990), seems to indicate that 2 or 3 adult female polar bears went south of St. Lawrence Island and to an area west of Hooper Bay and in the vicinity of Saint Matthew Island. No radiotagged bears went into Norton Sound or Norton Bay. It seems that the science is very weak to delineate all of this area as sea ice critical habitat based on such limited or absent data. From an occupancy modeling standpoint, this does not seem to be the most logical scientific interpretation based on the data available. There is no mention that by delineating this sea ice habitat as critical, that this portion of the range could more likely be inhabited in the future; this then would conflict with the

statement on page 56065 that the designation is for currently occupied habitat only.

Under the ESA, critical habitat includes "specific areas within the geographical area occupied by the species, *at the time it is listed* . . . ." 16 U.S.C. § 1532(5)(A). Areas outside the geographical area occupied by the species at the time it is listed may only be designated as critical habitat upon an express determination by the Service that such area is "essential for the conservation of the species." *Id.* § 1532(5)(A)(ii). Generally, "critical habitat shall not include the entire geographical area which can be occupied by the threatened or endangered species." *Id.* § 1532(5)(C). Thus, under the ESA, the Service is required to explain how it concluded that the areas of, and around, Norton Sound and Norton Bay, constitute critical habitat based on the best scientific data available.

Unit 2: Terrestrial Denning Habitat

Clarification is needed in regards to how the Service will decide if some areas from Barrow southward to the Seward Peninsula will be included in the final designation. The proposed rule states that the Service is considering the inclusion, and may ask the public specific questions to collect pertinent data. However, the Service should provide a more explicit statement regarding (1) how they will decide if, and when, they will ask the public for the information and (2) the process by which they will use to determine which, if any, areas will be considered as terrestrial denning habitat, including how it would/would not differ from the criteria used for the area between Barrow and the US-Canada border.

Terrestrial denning habitat on the Beaufort Sea coast is defined by den location data that have been related to topographic features. No terrestrial denning habitat has been proposed for the Chukchi and Bering sea coast. Although there are fewer known dens to determine what that area should be, the source of this information should be better documented in the proposed rule. It is not clear if the reason there are fewer known dens on the Chukchi coast is because fewer females have been collared. It is also not possible to evaluate from the data presented whether the lower den density is a result of less available data (e.g., radio-collared females, spring surveys of females and cubs) or because there is little denning habitat. A comparison of the number of radio-collared females in the Chukchi versus the Beaufort Sea would help, as would a more thorough documentation of any and all data available to support the statements that "*The majority of polar bears that den in the United States are from the southern Beaufort Sea population*" and "*…most of the polar bears from the Chukchi and Bering Seas population den on Wrangel Island and the Chukotka Peninsula, Russia.*"

The studies (Durner et al. 2001 & 2003) that document the specific microhabitat characteristics of denning sites (i.e., steep stable slopes, height, etc.) are included in the section on "*Terrestrial Denning Habitat Criteria*," and those studies should be cited as the source of information for those characteristics where they are presented earlier in the proposal.

Similar to the comment above regarding page 56075, last paragraph of Unit 2, first sentence: "Unit 2 contains the necessary topographic and macrohabitat and microhabitat features identified in **PCE number 2** essential for the conservation of polar bears in the United States. For clarification it would be better to say: Terrestrial Denning Habitat (Unit 2) includes the physical (topographic) features essential to the conservation of polar bears by providing areas used for denning.

Unit 3: Barrier Islands

Polar bears use of Beaufort Sea barrier islands is well documented, but no data were presented for polar bear use of barrier islands in the Chukchi or Bering Seas. The argument declaring barrier islands in the Chukchi or Bering seas as critical habitat is no more or less supported than the decision to NOT identify terrestrial denning habitat. A more thorough documentation of the existing data is needed to identify both terrestrial denning habitat and barrier island habitat for the area from Barrow southward to the Seward Peninsula. The Service must provide an explanation of the best scientific data available on which it is basing its decision. *See* 16 U.S.C. § 1533(b)(2).

These barrier islands in the southern portion of the proposed barrier island habitat are outside of the mapped range (Figure 1) and may likely have little or no documented use in recent decades. There is no explanation or apparent logical reason for affording the same protection for barrier islands off of Hooper Bay as to those between the Canadian border and Barrow. The Service should articulate their interpretation of the best scientific data available to support a decision to protect barrier islands that may be very rarely visited and for which no data, traditional ecological knowledge or other information is presented. It is also important for the Service to place some context on designating these vast expanses of critical habitat in the context of other recent designations of critical habitat that seemed to have a different decision system (e.g., Canada lynx, Spectacled Eider, Steller's eider, spotted owl). Standards for designating critical habitat are articulated in the ESA and Service regulations and should be applied consistently when the Service designates critical habitat for different species. These standards do not provide for the wholesale designation of vast expanses of land as "critical habitat." Rather, areas that are designated must be determinable, well-defined and shown to be essential to the conservation of the species using the best scientific data available. *See* 16 U.S.C. §§ 1532(5)(A), 1533(b)(2); 50 C.F.R. § 424.12. The Service shall not simply include the entire geographical area which can be occupied by the threatened or endangered species as critical habitat without specific basis. *See* 16 U.S.C. § 1532(5)(C).

The justification for a 1-mile buffer around barrier islands includes references to disturbance by snow machine use in Svalbard and activities near Kaktovik but no examples of disturbance events from dens disturbed by oil and gas industry in Alaska. The 1-mile buffer has been used to protect known dens from disturbance in areas subjected to oil and gas exploration and development activities for the area near Prudhoe Bay for more than a decade. There are documented examples of how well a 1-mile buffer works from the Incidental Harassment Authorization

(IHA) process. Those data would be better to document disturbance distances for bears (from a hunted population) denning on land in Alaska than using data for bears (from a non-hunted population) denning near Svalbard. This data would be the best scientific data available that should be relied upon by the Service.