

**Testimony of Kassie Siegel
Climate, Air, and Energy Program Director
Center for Biological Diversity**

To the U.S. Senate Committee on Environment and Public Works

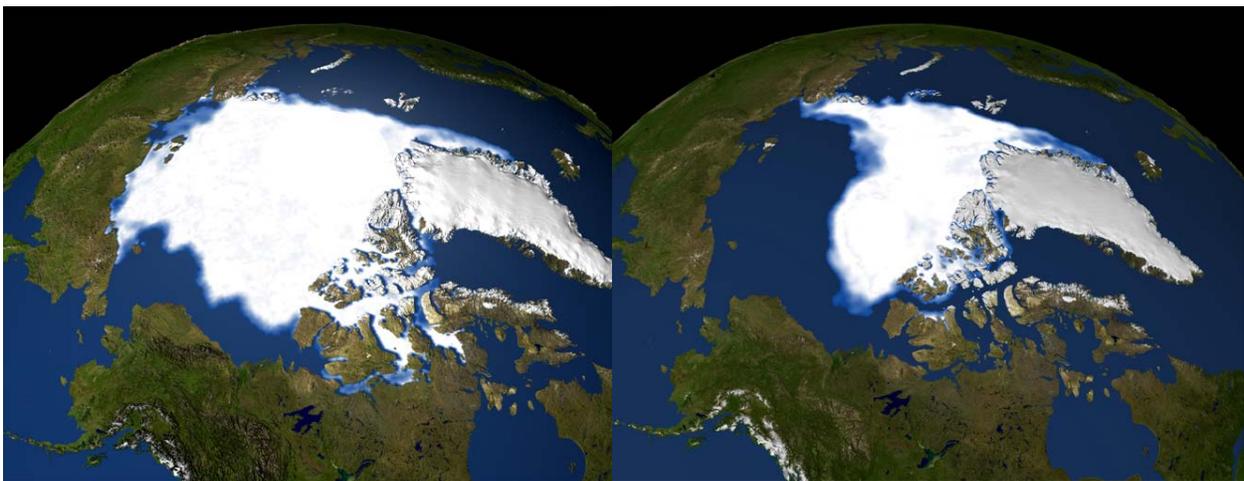
**April 2, 2008 Hearing:
Oversight on the Listing Decision for the Polar Bear under the Endangered
Species Act**



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EXECUTIVE SUMMARY

On February 16, 2005, the same day that the Kyoto Protocol entered into force without the participation of the United States, the Center for Biological Diversity petitioned the Secretary of the Interior and U.S. Fish and Wildlife Service to list the polar bear as a threatened or endangered species under the Endangered Species Act due to global warming.

The Endangered Species Act requires all listing decisions to be made solely on the basis of the “best available science.” Unfortunately for the polar bear, the “best available science,” and in fact *all* available science relating to global warming, sea ice, and polar bears, indicates the species faces global extinction in the wild by century’s end and complete extirpation from the United States by mid-century. The polar bear unequivocally meets the criteria for listing as endangered under the Endangered Species Act. Nevertheless, the Department of Interior has illegally delayed protection of the polar bear at every turn and has recently auctioned off some of the species’ most important habitat in the United States to the highest oil company bidder. This is simply unacceptable.

Since the petition was filed to list the species under the Endangered Species Act more than three years ago, new reports detailing polar bear drownings, cannibalism, starvation, and population declines have been published. Impacts predicted for the coming decades have already occurred, with 5 of the 19 populations now considered to be declining. In September 2007, sea ice extent shrank to a record one million square miles below the average summer sea ice extent of the past several decades, reaching levels not predicted to occur until mid-century. Some scientists have recently stated that if the rate of melting observed in 2007 continues, Arctic summer sea ice could be lost in as little as five years. The status of the polar bear has grown more dire, and, with it, the need for protection all the more compelling.

The accelerated melting of the Arctic requires an accelerated response from the federal government. Instead, the Department of Interior has continued business-as-usual policies of foot-dragging, political interference, and illegal delay in Endangered Species Act decision-making. The Bush administration has missed every statutory deadline in the Endangered Species Act listing process for the polar bear. Had the administration complied with the law, the species would have been afforded the full protections of the Endangered Species Act in February 2007. The proposed listing rule was almost eleven months overdue, and a final rule is now nearly three months late. The Center for Biological Diversity, Greenpeace, and NRDC ended the first round of delays with a lawsuit in 2005, and on March 10, 2008, filed a second lawsuit to compel a final listing decision for the polar bear.

Moreover, it has been almost two years since the Department of Interior has protected *any* domestic species under the statute, and Secretary Kempthorne has failed to protect a *single* domestic species in his entire tenure as Secretary. Secretary Kempthorne has, in effect, instituted a policy of non-implementation of this most important of wildlife laws.

In contrast to the Department of Interior’s wholesale practice of delaying protection for species under the Endangered Species Act, the Department has shown no such hesitation in authorizing oil and gas development in endangered species habitat. Nowhere is this contrast more apparent than in the conflicting positions of the Department with regard to polar bear critical habitat

designation and oil leasing in the Beaufort and Chukchi seas. Under the Endangered Species Act, absent rare circumstances where sufficient information is lacking, critical habitat is required to be designated concurrently with listing. In the proposed listing rule for the polar bear, the Department invoked this exception, stating that a “careful assessment of the designation of critical marine areas will require additional time and evaluation” and “there is a degree of uncertainty at this time as to which specific areas in Alaska might be essential to the conservation of the species and thus meet a key aspect of the definition of critical habitat.” In other words, the Department will delay critical habitat designation because not enough is known about what areas are essential for the species.

Notwithstanding the fact that the Department purportedly lacks information on what areas in the Chukchi and Beaufort Sea are essential to the polar bear, on June 29, 2007, Secretary Kempthorne approved a five-year oil and gas leasing program that would authorize five separate lease sales in polar bear habitat in the Chukchi and Beaufort seas. Under this program, virtually all offshore habitat for the polar bear in the United States is subject to leasing and development. Lease sale 193 in the Chukchi Sea is the first such sale under this program. It defies logic that the Department could lack sufficient information on the polar bear to protect its critical habitat, yet could simultaneously claim to have sufficient information to authorize the wholesale leasing away of this habitat to the oil industry. While there are many sound reasons the lease sales in the Chukchi Sea must be rescinded, the failure to identify and protect polar bear critical habitat in and of itself provides more than sufficient grounds to do so.

The situation in the Arctic has reached a critical threshold. The scientific evidence supports a broad moratorium on all fossil fuel extraction activities in the Arctic. Yet the only thing keeping pace with the rapid melting of the sea ice is the breakneck speed with which the Department of Interior, both on land and at sea, is authorizing oil and gas development in the region. The brakes must be put on such activity, while greenhouse gas reduction efforts must be accelerated. By delaying Endangered Species Act listing and offering oil leases in the Chukchi Sea, the Department is doing the very opposite.

The Department of Interior must immediately finalize the listing proposal for the polar bear, promptly initiate and complete the process of designating critical habitat, and convene a recovery team to develop a comprehensive recovery plan for the species. Moreover, the Department must refrain from any further oil and gas leasing, exploration and development in polar bear habitat until the designation of critical habitat and the completion of a recovery plan, and it should only resume such activities if it can affirmatively demonstrate these activities would be compatible with the survival and recovery of the species. The Chukchi Sea lease sale meets none of these criteria and should not have been allowed to proceed.

While the situation facing the polar bear is grim, it is not yet hopeless. The good news is that the things we have to do to reduce greenhouse gas emissions and protect the polar bear – things like increasing energy efficiency and fuel economy, switching from fossil fuels to renewables and changing our land use and transportation patterns – can all improve our quality of life, benefit our economy, and improve our national security. The barriers to saving the polar bear and solving the climate crisis are political, not technological, and the time for Congressional action is now.

I. Unlawful Delay and Political Interference in the Endangered Species Act Listing Process for the Polar Bear

The Endangered Species Act is our nation's strongest and most successful law for the protection of plants and animals on the brink of extinction. The Endangered Species Act is administered by the Secretary of the Interior, who has delegated responsibility to the U.S. Fish and Wildlife Service (FWS), and the Secretary of Commerce, who has delegated responsibility to the National Marine Fisheries Service/NOAA Fisheries (NMFS). The Fish and Wildlife Service generally has jurisdiction over terrestrial species, and also over the polar bear and walrus, while NMFS has jurisdiction over most marine species.

Because imperiled wildlife will not receive any regulatory protection until officially added to the lists of "threatened" or "endangered" species, Congress has added firm deadlines to the listing process to ensure that the entire process is completed in no more than two years. The Endangered Species Act listing process can be initiated by the agency itself, or by a petition from any person or organization to list a species.

For the past seven years, the Bush administration has implemented the Endangered Species Act in a manner that undermines, minimizes and eviscerates fundamental protections for the nation's most imperiled wildlife. Political appointees in the administration have consistently interfered in the scientific process with the express purpose of limiting protections for endangered species. They have delayed decisions, bullied government scientists, violated the law, and ignored public concern for the conservation of wildlife. As noted in the Part I of this testimony, all of these elements have been present in the effort to list the polar bear. Part II places the polar bear situation in a broader Endangered Species Act implementation context through a review of the administration's obstruction and interference in three critical aspects of implementation of the Endangered Species Act: protection of new species as threatened or endangered, designation of critical habitat, and development and implementation of recovery plans. The administration's malfeasance in these areas has already led to the extinction of species. Further interference in the listing process for the polar bear should not be tolerated.

A. The Endangered Species Act Listing Process for the Polar Bear

The listing process for the polar bear was initiated by a petition filed by the Center for Biological Diversity on February 16, 2005. If the administration had complied with the law, the species would have been listed and had critical habitat designated in February 2007. The listing process has already dragged out for over three years, due to repeated unlawful delays by the administration. A detailed timeline of the listing process is as follows:

Endangered Species Act Protection for the Polar Bear: A Timeline

February 16, 2005: The Center for Biological Diversity submits a scientific petition to the Secretary of Interior and U.S. Fish and Wildlife Service (collectively, "the Secretary") seeking listing of the polar bear as threatened or endangered under the Endangered Species Act due to global warming. The Secretary receives the petition on February 17, 2005.

May 18, 2005: The first finding on the petition, known as a “90-day” finding, is due on May 18, 2005, 90 days from receipt of the petition. Because the statute contains a qualifier that this deadline is to be met within 90 days “to the maximum extent practicable,” courts have treated the 90-day deadline as somewhat flexible, but in no instance can the 90-day finding be delayed so long that compliance with the deadline for the second required, or “12-month,” finding becomes impossible. The Secretary does not make a 90-day finding on the petition by May 18, 2005.

July 5, 2005: The Center for Biological Diversity, along with Greenpeace and the Natural Resource Defense Council (NRDC), send a letter to the Secretary adding the latter two groups to the petition.

October 11, 2005: The Center for Biological Diversity, Greenpeace, and NRDC (“petitioners”) send a “60-day notice of intent to sue” to the Secretary for failing to make a “90-day” finding on the petition. This notice is required to be sent at least 60 days prior to filing suit to enforce a statutory deadline under the Endangered Species Act listing provisions.

December 15, 2005: Petitioners file suit against the Secretary for the continuing failure to make a “90-day” finding on the petition (“first lawsuit”).

January 18, 2006: Petitioners file a court motion seeking a judicial order compelling the Secretary to issue the overdue 90-day finding. A court hearing is set for March 1, 2006.

February 9, 2006: The Secretary issues a positive “90-day” finding on the polar bear petition, and commences a full scientific review of the status of the species.

February 17, 2006: The second required finding on the petition, known as the “12-month finding” is due under the law by February 17, 2006. Given there is only a week between the issuance of the “90-day” finding and the deadline for the “12-month” finding, the petitioners and agency enter into settlement negotiations to agree on a timeline for making the “12-month” finding.

July 5, 2006: A consent decree is entered in the lawsuit which requires the Secretary to issue the “12-month” finding on the petition by December 27, 2006. This resolves the first lawsuit.

December 27, 2006: The Secretary announces a positive “12-month finding” on the petition, and indicates it will propose to list the polar bear as threatened under the Endangered Species Act.

January 9, 2007: The proposal to list the polar bear as threatened is published in the Federal Register, triggering a statutory deadline of January 9, 2008 to publish a final listing decision for the species. The Secretary opens a public comment period on the proposal that runs through April 9, 2007.

September 7, 2007: The U.S. Geological Survey (USGS) releases a series of nine reports conducted for the listing process at the request of the U.S. Fish and Wildlife Service. The USGS concludes that two-thirds of the world’s polar bears, including all of the bears in Alaska, will be extinct by 2050 under “business as usual” greenhouse gas emissions.

September 20, 2007: The Secretary re-opens the comment period on the proposal through October 5, 2007 to receive comments on the USGS reports.

December 14, 2007: The Alaska regional office of the Fish and Wildlife Service transmits its recommended final listing decision to Washington, D.C. headquarters of the Service.

January 7, 2008: Fish and Wildlife Service Director Dale Hall announces that the agency will not meet the January 9, 2008 deadline for a final listing determination, but intends to issue the final listing determination within 30 days.

January 9, 2008: Petitioners file the required “60 day notice of intent to sue” against the Secretary for missing the deadline for a final listing determination.

March 10, 2008: Petitioners file suit against the Secretary for the continuing failure to issue a final listing determination for the polar bear (“second lawsuit”).

April 2, 2008: Petitioners intend to file a legal motion on or around this date (the earliest allowed by the Federal Rules of Civil Procedure) seeking a court order compelling the Secretary to issue a final listing decision.

May 8, 2008: First available date for a court hearing on the illegal delay in issuing the polar bear decision.

B. The Delay in Issuing the Polar Bear Decision is Illegal

The listing process timeline above for the polar bear reveals the repeated foot-dragging and illegal delay by the Secretary. If the Secretary had complied with the law, the species would have been listed and had critical habitat designated in February 2007. The Secretary’s current flouting of the legal deadline for a final listing decision is only the most recent example of illegal delay with regard to the polar bear. The publication of the proposed rule to list the polar bear under the ESA in the Federal Register on January 9, 2007 triggered the Secretary’s mandatory duty to publish the final listing decision no later than January 9, 2008. 16 U.S.C. § 1533(b)(6). Given FWS scientists in Alaska sent a final rule package to headquarters in Washington, D.C. in mid-December, the final listing decision has now been held up in Washington, D.C. for over three and half months. There is absolutely no justification for the delay.

Courts have repeatedly held that the ESA’s listing deadlines are mandatory and cannot be extended. For example: “the language of the ESA regarding the deadlines for action could hardly be more clear.... within the one-year period beginning on the date on which the proposed regulation is published, the Secretary must publish a final regulation, withdraw the proposed regulation, or give notice that the one-year period is being extended.” *Oregon Natural Resources Council v. Kantor*, 99 F.3d 334, 338-39 (9th Cir. 1996) (Internal quotations omitted).

While the statute provides for a possible one-time extension of the deadline of no more than six months in cases where there is a “substantial disagreement regarding the sufficiency or accuracy of the available data” pertaining to the listing decision, 16 U.S.C. § 1533((b)(6)(B), Director Hall has explicitly stated that the agency is not invoking this exception. Indeed, the

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agency could not lawfully do so, as there is no credible scientific disagreement relating to the data on which the polar bear listing decision is based.

As such, the delay in issuing a final listing decision for the polar bear is flatly illegal. It was precisely for the purpose of ending listing delays such as this one that Congress passed the 1982 ESA amendments which added the current deadlines.

As the legislative history of the ESA and its subsequent amendments demonstrate, Congress from the outset recognized that timeliness in the listing process is essential. *See, e.g.,* S. Rep. No. 93-307 (1973), *reprinted in* 1973 U.S.C.C.A.N. 2989, 2991 (noting the inadequacies of earlier legislation). During subsequent revisions of the ESA, Congress expressed particular concern for species that had languished for years in "status reviews." H.R. Conf. Rep. No. 97-835, at 21 (1982), *reprinted in* 1982 U.S.C.C.A.N. 2860, 2862. In order to "force action on listing and delisting proposals," *id.*, Congress amended the ESA's petition process expressly to provide certain mandatory deadlines by which the Secretary must act on a petition. Pub. L. 97-304 § 2(a)(2), 96 Stat. 1411, 1412 (1992) (amending 16 U.S.C. § 1533(b)(3) to include the 90-day and 12-month finding requirements).

Center for Biological Diversity v. Norton, 254 F.3d 833, 839-840 (9th Cir. 2001).

This is why the Center for Biological Diversity, Greenpeace, and NRDC have asked the District Court in the current lawsuit to order the Secretary to issue the final listing determination in short order.

C. Political Interference in the Polar Bear Decision

The fact that the polar bear decision has been held up in Washington for over 3 ½ months in direct violation of the statutory deadline is the most recent and obvious example of political interference in the listing process for the polar bear. Political meddling is apparent, however, in ways that go beyond the delays themselves. The first evidence of interference was revealed following the announcement of the proposal to list the polar bear in December, 2006. The listing proposal was based on a scientific report prepared by FWS scientists entitled "Range-wide Status Review of the Polar Bear (*Ursus maritimus*)" (Schliebe et al. 2006, "Status Review"). The listing proposal and the Status Review are extremely similar, and in fact, large portions are identical or nearly identical, which makes sense since the Status Review is the basis for the proposed rule. However, nearly all of the many references to anthropogenic greenhouse gas emissions and global warming in the Status Review were deleted from the proposed rule. This appears to be a systematic attempt by the Bush administration to stifle discussion of these critically important topics. Incorrect and misleading statements from Secretary Kempthorne and Director Hall also reveal improprieties, as discussed below.

A listing proposal by law must examine the five Endangered Species Act listing factors:

1. The present or threatened destruction, modification, or curtailment of its habitat or range;
2. Overutilization for commercial, recreational, scientific, or educational purposes;

3. Disease or predation;
4. The inadequacy of existing regulatory mechanisms;
5. Other natural or manmade factors affecting its continued survival.

15 U.S.C. § 1533(a).

The first factor requires identification of the cause of endangerment; the fourth requires an examination of existing regulations related to that cause. The polar bear listing proposal, however, appears unique among the thousands of listing decisions issued over the last 33 years in completely failing to identify the cause of the polar bear's imperilment. It presents a comprehensive analysis of past and current sea ice melt, but conspicuously fails to identify what is causing the Arctic to warm so dramatically. There is no discussion of global warming or greenhouse gases.

Similarly, while the proposal discusses all relevant national and international regulations and efforts regarding hunting, oil and gas drilling, toxic contamination and disturbance, it does not discuss any national or international greenhouse gas regulations or initiatives. It correctly concludes that "...there are no known regulatory mechanisms currently in place at the national or international level effectively addressing threats to polar bear habitat," but does not elaborate.

In his opening statement at the December 27th press conference, Secretary Kempthorne stated that global warming and its causes are "beyond the scope" of the government's efforts to protect the polar bear via the Endangered Species Act:

"While the proposal to list the species as threatened cites the threat of receding sea ice, it does not include a scientific analysis of the causes of climate change. That analysis is beyond the scope of the Endangered Species Act review process which focuses on information about the polar bear and its habitat conditions including reducing ice (FWS 2006:3)."

Secretary Kempthorne clearly told the media that FWS scientists *did not* analyze the causes of global warming or the adequacy of the administration's greenhouse gas emissions policy. Director Hall went so far as to thrice state that the scientists *could not* do so because they lacked the expertise:

"Sir, to be honest with you, we don't have the expertise in the Fish & Wildlife Service to make those kinds analysis [sic]. We're biologists by trade and so, we deal with the fact they're out on the landscape. And in this case, we're dealing with the fact of reducing ice and that's what we're able to analyze (FWS 2006:16-17)."

The Status Review had of course been completed before the press conference, but was not released to the public or the media until several weeks afterward. The Status Review states:

"The purpose of the status review/assessment is to obtain, synthesize, and evaluate the best available scientific and commercial data on the status of the polar bear and threats thereto. Information in the status assessment is to form the

basis for the next finding the Act requires the Service to make, the 12-month finding [i.e. the proposal] that the petitioned action is either: (1) warranted; (2) not warranted; or (3) warranted but precluded.”

Much of the listing proposal was cut and pasted out of the Status Review and the two documents are structured very similarly. They differ, however, in that the Status Review contains the exact analyses that Secretary Kempthorne and Director Hall claimed were not and could not be performed by the FWS. It appears that these officials may have systematically censored all references to global warming, greenhouse gases, and the administration’s failed emission policies out of the listing proposal, and then told the media that the analyses had never been conducted. Table 1 displays the number of times that keywords relating to global warming were used in the Status Review, compared to the number of times they were used in the Proposed Rule. The Status Review includes four references to CO₂, nine to greenhouse gases, 20 to global warming, and 24 to emissions. All of these were excluded from the listing proposal. Seventy-four of the 83 references to climate change were also deleted.

Table 1: Number of Keyword References in the Status Review and Proposed Rule
Source: Center for Biological Diversity Analysis of the Status Review and Proposed Rule.

Keyword(s)	Status Review	Proposed Rule
Climate Change	83	9
Greenhouse or Green House	9	0
CO ₂	4	0
Emissions (in relationship to greenhouse gases)	24	0
Global Warming	20	0
Kyoto	4	0
United Nations Framework Convention on Climate Change or UNFCCC	15	0
White House	1	0
IPCC	17	3
U.S. Climate Change Science Program	1	0

The proposed rule itself states: “Further, the analysis conducted for the polar bear status assessment and proposed rule has been a significant and jointly-coordinated effort of fiscal, intellectual, and other resources among the Service and the USGS, NASA, species experts, and experts in other fields such as contaminants.” 72 Fed. Reg. 1096. FWS scientists clearly have the expertise to conduct inter-disciplinary analyses and to coordinate with their colleagues at NASA and other agencies who have additional expertise in climate science and other fields relevant to the polar bear status review. For the Director of the FWS to suggest that agency

scientists “[lack] the expertise” to conduct the high quality, thorough, and impressive analysis they had just completed is exceptionally strange behavior at best.

To fulfill the Endangered Species Act mandate to determine if existing regulatory mechanisms are adequate to protect the species, the Status Review has a section entitled “Mechanisms to Regulate Climate Change.” It examines the 1992 United Nations Framework Convention on Climate Change, finding that “To date, the goals set by the Framework have not been met.” It examined the 1997 Kyoto Protocol, finding that it would only “slightly reduce the rate of growth of emissions and would only make a small contribution to stabilizing the level of emissions in the atmosphere.” It also concluded that “mechanisms for enforcement of emission reductions have not yet been tested and there are no financial penalties or automatic consequences for failing to meet Kyoto targets.” Domestically, it concludes that the strategy developed by the White House Office of Science Technology and Policy will actually allow continued increases in greenhouse gas emissions because while “emissions intensity could decrease the total emissions would still increase.”

The listing proposal changed the name of this section to “Mechanisms To Regulate Sea Ice Recession,” shortened it to a single paragraph and deleted all references to greenhouse gas policies. The section now reads in total:

“Regulatory mechanisms directed specifically at managing threats to polar bears exist in all of the range states where the species occurs, as well as between (bilateral and multilateral) range states. There are no known regulatory mechanisms effectively addressing reductions in sea ice habitat at this time.”

Sea ice recession by definition can not be regulated. Its cause — greenhouse gases — can be regulated, but the Bush administration has steadfastly opposed all such efforts to do so, and apparently excised the scientists’ analysis prior to publication of the proposed rule. Saying that polar bears are threatened by sea ice recession without discussing global warming is like saying a species that is threatened by hunting is threatened by “rapidly flying bits of lead” and that there are no known regulatory mechanisms regulating “flying bits of lead,” without discussing hunting.

The Status Review contains a section entitled “Projected Changes in Arctic Climate” which after examining the detrimental impacts likely to occur from continued global warming, states that the “warming trend would change considerably if actions were taken soon enough to keep the atmospheric gases from increasing (Schliebe et al. 2006:67).” The listing proposal changed the name of this section to “Projected Changes in Sea Ice Cover” and removed the reference to limiting greenhouse gas emissions or altering the current trajectory of warming.

While the Status Review explains Arctic warming in relationship to carbon emissions (see, e.g. Schliebe et al. 2006: 66: “The globally averaged surface temperature is projected to increase by somewhere between 1.4 and 5.8° C over the period 1990 to 2100 depending on model parameters and the assumptions made on future CO2 emissions”), the listing proposal does not discuss the cause of Arctic warming.

Around the same time as the proposed rule was announced, the administration also attempted to block scientists traveling abroad from discussing polar bears, sea ice, or climate change (FWS 2007). A March 2, 2007 email from Richard Hannon, Acting Alaska Regional Director to Alaska Region Staff, stated:

Please be advised that all foreign travel requests (SF 1175 requests) and any future travel requests involving or potentially involving climate change, sea ice, and/or polar bears will also require a memorandum from the Regional Director to the Director indicating who'll be the official spokesman on the trip and the one responding to questions on these issues, particularly polar bears, including a statement of assurance that these individuals understand the Administration's position on these issues (FWS 2007).

In sum, while the proposed rule accurately determined that the polar bear qualifies for listing under the Endangered Species Act, inappropriate intrusion of politics into the listing process is readily apparent.

D. Failure to Propose Critical Habitat for the Polar Bear

Understanding that it is not possible to protect plants and animals without protecting the areas where they live, Congress provided for the protection of species' critical habitat. Critical habitat, or the areas "essential to the conservation of the species" that "may require special management considerations or protection," provides substantial additional protection to listed species and must be designated at the time a species is listed. 16 U.S.C. § 1533(b)(6)(C). A final critical habitat designation may only be delayed if the agency finds that designation would be "not prudent" or "not determinable."

The proposed rule to list the polar bear stated that critical habitat designation was "not determinable," stating as follows:

...in general the identification of specific physical and biological features and specific geographic areas for consideration as critical habitat is complicated and the future values of these habitats may change in a rapidly changing environment. The polar sea ice provides an essential conservation function for the key life history functions for hunting, feeding, travel, and nuturing [sic] cubs. That essential habitat is projected to be significantly reduced within the next 45 years, and some projections forecast complete absence of sea ice during summer months in shorter time frames. A careful assessment of the designation of critical marine areas will require additional time and evaluation. In addition, near-shore and terrestrial habitats may qualify as critical habitat; however a careful assessment will require additional time and evaluation. Therefore, there is a degree of uncertainty at this time as to which specific areas in Alaska might be essential to the conservation of the species and thus meet a key aspect of the definition of critical habitat. Consequently, the designation of critical habitat for the polar bear is not determinable at this time...If the listing of the polar bear becomes final, we will then consider whether to propose the designation of critical habitat."

It is highly improper to deny the polar bear the additional protections of critical habitat based on the rapid warming of the Arctic, the very factor that endangers the species in the first place. What's worse, however, is that at the same time the FWS states that it does *not know enough to determine what areas are critical to the survival of the polar bear and which are not*, the FWS aided another Interior Department agency, the Minerals Management Service, in its rush to sell off millions of acres of prime polar bear habitat in the Chukchi Sea for oil and gas development. If the FWS cannot yet determine whether the Chukchi Sea habitat is critical to the survival of the polar bear, it cannot possibly determine that sacrificing the area to oil and gas development will not jeopardize the species survival. Yet by running roughshod over the requirements of the Endangered Species Act and other environmental laws, this is exactly what the agency has done. Part III examines this and other real-world consequences of the listing delay. Part II places the listing delay in a broader context of pervasive political interference in the Endangered Species Act listing process.

II. The Administration's Unlawful Delay of the Endangered Species Act Listing Process for the Polar Bear fits a Pattern of Political Interference in the Listing Program

For the past seven years, the Bush administration has implemented the Endangered Species Act in a manner that undermines, minimizes and eviscerates fundamental protections for the nation's most imperiled wildlife. Political appointees in the administration have consistently interfered in the scientific process with the express purpose of limiting protections for endangered species. They have delayed decisions, bullied government scientists, violated the law, and ignored public concern for the conservation of wildlife. The following discussion reviews the administration's obstruction and interference in three critical aspects of implementation of the Endangered Species Act: protection of new species as endangered, designation of critical habitat, and development and implementation of recovery plans. The administration's malfeasance in these areas has already led to the extinction of species. Further interference in the listing process for the polar bear should not be tolerated.

A. The Bush Administration has Essentially Halted Protection of New Species as Threatened or Endangered

Listing of species as threatened or endangered is the keystone of the U.S. Endangered Species Act because it is only after species are listed that they receive the substantial protections provided by the Act. Over the past 7 years under the Bush administration, listing of species has dropped to the lowest level since the Act was passed and far below any other administration (Table 2). Since the administration took over in 2001, it has listed just 59 species for a rate of eight species per year. By comparison, the Clinton administration listed 522 species for a rate of 65 species per year and the first Bush administration listed 231 species for a rate of 58 species per year.

Table 2: Endangered Species Act Listings by Administration (includes both Fish and Wildlife and National Marine Fisheries Service Listings).

	Total Listings	Annual Listings	LISTING INITIATION			
			Citizen	Citizen %	Agency	Agency %
Nixon/Ford	47	16	38	81%	9	19%
Carter	124	31	89	72%	35	28%
Reagan	255	32	178	70%	77	30%
Bush I	231	58	179	77%	52	23%
Clinton	522	65	441	84%	81	16%
Bush II	59	8	59	100%	0	0%

The slow pace of listing under the Bush administration is not due to the lack of imperiled species or requests for action; scientists, organizations and individuals have submitted petitions to list approximately 1,000 species during the Bush administration. The administration has issued listing decisions on less than 100 of these.

This refusal to list species or even respond to petitions is also not due to a refusal by Congress to fund the listing program, since Congress has consistently increased the listing budget and provided the Interior Department with the funds it has requested:

Table 3: Department of Interior Endangered Species Act Listing Budget and Funding, 2002-2008 (in thousands of US dollars)

	2002	2003	2004	2005	2006	2007	2008
DOI listing budget	3,000	3,007	3,235	4,893	5,131	5,243	8,337
% of DOI request	106%	100%	99%	93%	97%	100%	100%

Secretary of the Interior Dirk Kempthorne, appointed on May 26, 2006, has essentially shut down the listing process all together. On April 2, 2008, the FWS will not have listed a single new species in the U.S. for *693 days*, the longest such delay in the history of the Endangered Species Act. The second longest delay was in 1981, when then Secretary of the Interior James Watt went 382 days without protecting a new species. In response to this shorter delay, Congress quickly responded by amending the Act in 1982 to include firm deadlines for protecting species.

This sharp drop in the number and rate of species listings is not due to a shortage in the number of deserving species. To the contrary, there are currently about 280 species that are candidates for listing that have, on average, been waiting nearly 19 years for protection.¹ Many of these species, including the elfin woods warbler, mountain yellow-legged frog, and New England cottontail rabbit, are on the brink of extinction.

¹ The FWS began keeping lists of species that warrant review in 1974 and candidate lists in 1980. Prior to 1996, the agency had several categories of candidate species (e.g. C1, C2, C3) based on the available information. Because all of these categories required additional action on the part of the agency, we have calculated wait time based on the first date a species was added regardless of category. In 1996, only category 1 species were maintained on the candidate list.

The consequences of delayed protection are severe, allowing species to decline, making recovery more costly and difficult, and in a number of cases, resulting in species extinction. Indeed, at least 25 species have become extinct after being recognized as a candidate species (Suckling et al. 2004). One of these extinctions was announced as recently as October, 2006, when the FWS concluded that there are “no extant wild individuals and there is no material in genetic storage” of the Hawaiian plant “Haha” (*Cyanea eleeleensis*) and thus that the species “appears to be extinct.”² Another species extinction on Bush’s watch is the summer-run of the Lake Sammamish Kokonee, which formerly lived in Washington State’s second largest lake, and is now believed to be extinct after the administration ignored a petition to emergency list the population (Greenwald 2007). A Hawaiian bird called the Akikiki or Kauai creeper, which is only found on the island of Kauai primarily in the Alakai Swamp, may also be nearing extinction (Greenwald 2007).

In the few cases where the administration has been forced to make decisions about whether to protect candidate species by court orders, it has reversed previous determinations and denied the species protection, including decisions over the Montana fluvial arctic grayling, Gunnison sage grouse and others (Greenwald 2007).

Lack of funding and litigation are not to blame for the administration’s poor record protecting species, as this has occurred despite increases in funding for the listing program (Table 3). FWS officials have repeatedly claimed the reason they are not protecting more species, particularly candidate species, is because they are flooded by litigation and court orders to conduct other listing activities. Under the Clinton Administration, however, the agency completed substantially more listing determinations under court order and still managed to complete hundreds of non-court ordered listing determinations. In reality, the administration is making so little progress protecting new species because of the opposition of political appointees in the Department of Interior, who have slowed decision making with multiple reviews and edits and bullied agency scientists to reverse their conclusions. Documents obtained by the Center for Biological Diversity and others through the Freedom of Information Act reveal that Department of Interior officials interfered with – and in many cases, reversed – FWS biologists’ recommendations to list species as “threatened” or “endangered” under the Act, including decisions concerning Gunnison sage-grouse, greater sage-grouse, Mexican garter snake, marbled murrelet, Delta smelt, wolverine, trumpeter swan, Gunnison’s prairie dog, white-tailed prairie dog, and roundtail chub.

Delay and interference have effectively closed the gates to protection of new species under the Endangered Species Act. The political interference is also demonstrated by a survey of FWS biologists conducted by the Union of Concerned Scientists. The survey found that nearly half of all respondents whose work is related to endangered species scientific findings (44 percent) reported that they “have been directed, for non-scientific reasons, to refrain from making jeopardy or other findings that are protective of species” (UCS 2005).

² U.S. Fish and Wildlife Service, Endangered and Threatened Wildlife and Plants; Review of Native Species That Are Candidates or Proposed for Listing as Endangered or Threatened, Federal Register: September 12, 2006, Volume 71, Number 176, Page 53806
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Political pressure and bullying of agency scientists to reverse their conclusions to protect species was also documented in a report by the Inspector General of the Department of Interior, which found that then Assistant Secretary of Fish, Wildlife and Parks Julie MacDonald, who has no biological training, rode roughshod over numerous decisions by agency scientists concerning protection of the nation's endangered species (OIG 2007). The report also found that MacDonald violated federal rules by sending internal documents to industry lobbyists (OIG 2007).

In the Inspector General report, numerous former and current high level staff of the FWS stated that MacDonald's interference in scientific decisions concerning endangered species was pervasive, aggressive, designed to limit protection and exposed the agency to litigation over poorly supported and politically motivated decisions (OIG 2007). The former director of endangered species, for example, concluded that MacDonald "regularly bypassed managers to speak directly with field staff, often intimidating and bullying them into producing documents that had the desired effect" and that "the overall effect was to minimize the Endangered Species Act as much as possible or ensnare it in court litigation, which often happened" (OIG 2007).

Following release of the Inspector General report, Ms. MacDonald resigned and the FWS stated its intention to review Endangered Species Act determinations for eight species for political interference. Following that review, the FWS stated its intention to "revise" decisions relating to seven of the species, but made no firm commitment to do so, making statements including that the work will be undertaken "as funding becomes available."³ This inadequate response has not addressed the problem. The Center for Biological Diversity has identified at least 55 species where political interference appears to have occurred, and which the administration has refused to address.

Political interference from the Bush administration has repeatedly been overturned by Courts. In one case in which the administration was under a court order to make a final listing determination for the California tiger salamander, the FWS sought and received additional time from the Court to meet the deadline. In later overturning the reclassification of two populations of the salamander from "endangered" to "threatened," the Court noted that the extension had been used instead simply for political interference.

While FWS argued that it needed the extension to resolve a factual discrepancy over the extent of any decrease in grazing land for the Central California tiger salamander, it is now evident, upon review of the transcript of the hearing and the administrative record, that FWS was simply buying time to draft a final rule that also incorporated the down-listing of the Santa Barbara County and Sonoma County tiger salamander populations.⁴

In sum, despite increased funding and hundreds of species in need of immediate protection, the Bush administration has engineered a near shutdown in protection of new species as threatened or endangered under the Endangered Species Act. The unlawful delay in the polar

³ Letter from Kenneth Stansell, Acting Director, U.S. Fish and Wildlife Service, to the Honorable Nick J. Rahall, II, Chairman, Committee on Natural Resources, House of Representatives, dated Nov. 23, 2007.

⁴ August 19, 2005 Order in *Center for Biological Diversity et al. v. U.S. Fish and Wildlife Service et al.*, No. 04-4324 (WHA) (N. Dist. Cal.)

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bear listing decision fits this pattern of political interference and raises concerns that political appointees are using the delay to tamper with the conclusions of agency scientists.

B. The Bush Administration has Slashed Critical Habitat Designations and Interfered in Recovery Planning

One of the most important protections for many listed threatened and endangered species is the designation of critical habitat. A recent study found that listed species that had critical habitat for two or more years were more than twice as likely to have an improving status and less than half as likely to be declining than listed species without critical habitat (Taylor et al. 2007).

Throughout much of the late 1980s and 1990s, the FWS did not routinely designate critical habitat for listed species, despite a clear statutory mandate. Beginning in the late 1990s conservation organizations began suing to obtain critical habitat for species before being barred by the statute of limitations. Unfortunately, the great majority of these designations have been under the direction of the Bush Administration. Unable to stop the flow of court orders to designate and protect critical habitat areas, the Bush Administration has resorted to drastically scaling back the size of critical habitats.

In general, proposed critical habitats were developed by field-level staff who are familiar with the particular species in question and have been fairly inclusive of species habitat. Proposed critical habitat under the Bush administration at the time of a 2007 analysis included nearly 120 million acres with an average of over 310,000 acres per species. Final critical habitats, however, included only just over 48 million acres with an average of only 125,000 acres per species. On average, critical habitats were reduced by 70% between the proposed and final rules. In total, 90% of all critical habitats were reduced between proposed and final and 14 were canceled all together. Only four were increased and only for a total of 18,544 acres.

In many cases, excluding large tracts of land has made critical habitats practically useless. In 2001, political appointees in Washington DC ordered local FWS biologists to remove 8.9 million acres of proposed critical habitat from the Mexican spotted owl. The result was a designation that excluded 95% of all known owls, 80% of owl habitat, and virtually all areas under threat of logging. An agency biologist objected: “the designation would make no biological sense if the [U.S. Forest Services land] was excluded since these lands are the most essential for the owl.” Two years later a federal court agreed, calling the designation “nonsensical.”

Another essential protection afforded listed species is the recovery plan, developed by teams of expert scientists and land managers to detail the necessary actions to recover species to the point at which they no longer require the protection of the Endangered Species Act. Recovery plans involve compilation of extensive and highly specific information related to the threats to and status of the species in question, and thus by necessity, recovery teams have historically operated with a fair degree of independence. Recovery plans provide important guidance to federal land management agencies, who must ensure that their actions are consistent with the survival and recovery of threatened and endangered species.

The Bush administration has completed fewer recovery plans than the previous three administrations, has interfered with development of recovery plans to an unprecedented degree, and has ignored recovery plan criteria in a rush to strip species of protection. To date, the Bush Administration has completed just 100 recovery plans, compared to 577 under the Clinton administration and 174 under the first Bush administration.

The administration has also repeatedly interfered in the recovery planning process. For example, in 2004, the Apache Trout Recovery Team, which consists of a diverse group of professional biologists, developed a draft revised recovery plan based on many months of deliberation and consideration of the best available scientific information. This plan, however, did not allow for delisting the species fast enough for then southwest regional director of the FWS Dale Hall, who unbeknownst to team members worked with officials of Arizona Game and Fish to substantially revise the plan. In order to speed delisting of the trout, the new plan lowered population targets, and removed requirements to replicate different genetic lineages.

In response to the revised plan, three respected members of the recovery team sent a letter to Mr. Hall, concluding:

As members of the Apache Trout Recovery Team (Team), we are writing you to express our dissent with the ongoing revision of the Apache Trout Recovery Plan. Specifically, we do not believe that the Plan's revised recovery strategies and objectives are sufficient to allow the species to be delisted. We have expressed to the Team our reservations about the Plan's adequacy toward recovering Apache trout on several occasions, yet the Plan continues toward finalization despite our stated concerns. Because our views apparently will not be incorporated into the final Plan, we wanted to make you aware of alternative approaches to the recovery process that are based on the best scientific information available... We believe that implementation of the revised Plan as currently written will not conserve Apache trout according to provisions outlined in ESA, and will eventually result in its further genetic degradation and possible extinction.⁵

Following his decision to ignore recovery team scientists and lower the recovery criteria for the rare Apache Trout, Mr. Hall was promoted to Director of the FWS.

Other species for which interference in the recovery planning process have been documented include the northern spotted owl, West Virginia flying squirrel, Florida manatee, gray wolf, Yellowstone population of the grizzly bear, Gila trout, and marbled murrelet (Greenwald 2007).

Given the administration's widespread practice of illegal political interference in Endangered Species Act decision-making, it is no surprise that the listing process for the polar bear has also been subject to illegal delays and interference.

⁵ Letter from Apache trout recovery team members, Robert Clarkson, Jerry Ward and Alex Puglisi to Regional Director Dale Hall, U.S. Fish and Wildlife Service, March 9, 2005.

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III. The Administration's Delay has Deprived the Polar Bear of the Substantial Protections it would Receive from Endangered Species Act Listing and Allowed the Administration to Auction off Prime Polar Bear Habitat for Oil and Gas Development

The Endangered Species Act is our nation's safety net for plants and animals on the brink of extinction, and our strongest and best law for the protection of imperiled wildlife. The administration's lengthy delay in issuing a final listing decision deprives the polar bear of desperately needed protections afforded by the statute. While the listing process itself has benefited the species by raising awareness of its plight and generating new scientific information we would not otherwise have had, the polar bear will not receive the regulatory protection it needs and deserves under the Endangered Species Act until it is formally listed as threatened or endangered. The administration's delay has both deprived the species of this protection and allowed the administration to affirmatively rush through harmful activities, such as the Chukchi Lease Sale 193, which would likely not have been able to proceed had the polar bear been listed.

A. Regulatory Protections under the Endangered Species Act

While the listing process has already been beneficial for the polar bear in terms of generating both scientific research and public concern regarding the species' plight, the polar bear will not receive any regulatory protection until the listing process is complete. Once this occurs, an array of statutory protections will apply.

Two of the primary Endangered Species Act regulatory mechanisms are contained in Sections 7 and 9 of the statute. 16 U.S.C. §§ 1536, 1538. Section 7 directs all federal agencies to "insure through consultation" with FWS (or NMFS in the case of marine species) that all actions authorized, funded, or carried out by such agencies are "not likely to jeopardize the continued existence" or "result in the destruction or adverse modification" of "critical habitat" of any listed species." 16 U.S.C. § 1536(a)(2).

In contrast to the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321-4375, which requires only informed agency decision-making and not a particular result, and is therefore strictly procedural, Section 7 of the ESA contains both procedural ("through consultation") and substantive ("insure" the action does not "jeopardize") mandates for federal agencies. As such, the statute can force analysis through the consultation process of the environmental effects of a given project and, if the project is determined to jeopardize a listed species or adversely modify its critical habitat, trigger modification or cancellation of the project so as to avoid such impacts.

Consultation under Section 7 results in the preparation of a biological opinion by FWS that determines if the proposed action is likely to jeopardize the continued existence of a listed species or adversely modify its critical habitat. If the action is determined to jeopardize a species or adversely modify its critical habitat, FWS must provide "reasonable and prudent alternatives" that would allow the action to proceed in a manner that avoids jeopardy and adverse modification. In making the jeopardy and adverse modification determinations, FWS must utilize the "best available science." 16 U.S.C. § 1536(a)(2).

As exemplified in the seminal case *Tennessee Valley Authority v. Hill*, 437 U.S. 153 (1978), the Section 7 consultation process is the heart of the ESA. The Supreme Court stated that Section 7 “admits of no exception,” and affords endangered species “the highest of priorities.” 437 U.S. at 173-174. Through the Section 7 process, federal agencies should examine the direct, indirect, and cumulative impacts of any action that may impact the polar bear. This includes not only actions that directly harm polar bears or their habitat, but also large sources of anthropogenic greenhouse gas emissions which contribute to global warming. While Bush administration officials have stated that global warming is “beyond the scope” of the Endangered Species Act, there is no reason greenhouse gas emissions which harm polar bears should be treated any differently than pesticides that harm salmon or logging that harms owls.

Section 7 consultation is required for “any action [that] may affect listed species or critical habitat.” 50 C.F.R. § 402.14. Agency “action” is defined in the ESA’s implementing regulations to include “all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas. Examples include, but are not limited to: *actions directly or indirectly causing modifications to the land, water, or air.*” 50 C.F.R. § 402.02 (emphasis added).

This regulatory definition of “action” is sufficiently broad to encompass actions that result in greenhouse gas emissions, as it would be hard to argue that such emissions are not “causing modification to the land, water, or air.” Many federal agency actions result in greenhouse gas emissions that are sufficiently large that they “may affect” the polar bear.

Because the goal of Section 7 consultation is to avoid jeopardizing any listed species, the regulatory definition of “jeopardy” offers some guidance as to how the consultation requirement for a greenhouse gas emitting action may be interpreted. To “jeopardize” a species means “to engage in an action that reasonably would be expected, directly or indirectly, to reduce *appreciably* the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.” 50 C.F.R. § 402.02 (emphasis added). If an action “appreciably” contributed to global warming, that action could then be found to jeopardize a listed species. “Appreciably” is defined in the Oxford English Dictionary as being “to the degree that can be estimated,” while something is “appreciable” if it is “large or important enough to be noticed.”⁶ So if an action contributes an appreciable amount of greenhouse gas emissions to the atmosphere, that action should undergo the consultation process.

While many federal actions may not contribute appreciable amounts of greenhouse gases to the atmosphere, many clearly do so. For example, the corporate average fuel economy (CAFE) standards for sport utility vehicles and light trucks are set via regulation by the National Highway Transportation Safety Administration. Since the transportation sector represents a large component of United States greenhouse gas emissions, the volume of greenhouse gases represented by this single rulemaking are certainly “appreciable.” Similarly, the Minerals Management Service approves offshore oil and gas leasing which will result in billions of barrels of oil, the lifecycle of the production and use of which is certainly “appreciable.” The

⁶ Oxford English Dictionary online, http://www.askoxford.com/concise_oed/appreciable?view=uk.

greenhouse gas emissions from numerous other actions, ranging from the approval of new coal-fired power plants, oil shale leasing programs, or limestone mines for cement manufacturing, and scores of other projects are individually and cumulatively having an appreciable effect on the atmosphere. These are all agency “actions” as defined by the ESA, which “may affect” listed species, and therefore trigger the consultation requirements of Section 7.

The vast majority of federal agencies are not yet consulting on the impacts of greenhouse gas emissions and global warming on ESA-listed species. This may be changing, however. The Supervisor of the New Mexico Ecological Services Field Office of FWS, for example, recently requested additional information relating to the formal Section 7 consultation on the Desert Rock coal fired power plant proposed in New Mexico:

The estimated annual carbon dioxide emissions [of the coal fired power plant] is 12.7 million tons....The recent summary of the United Nation’s Intergovernmental Panel on Climate Change 4th assessment report calls the evidence of climate warming “unequivocal” and expresses over 90% confidence that most observed warming is due to human influence. Because this project directly and cumulatively contributes to increased concentrations of green house gases which have been identified as a principle driver of climate change, please provide an analysis of a) the potential effects of climate change on the hydrology and water resources of the San Juan River basin; specifically address in your analysis the results of modeling of future water availability; and b) the effects of any changes in hydrology and water resources of the San Juan River basin on Colorado pikeminnow, razorback sucker, bald eagle, and Southwest willow flycatcher.⁷

And while Section 7 of the Endangered Species Act is certainly not a complete solution to global warming, the law has an important role to play. As Justice Stevens wrote in Massachusetts v. EPA, 127 S. Ct. 1438 (2007), “Agencies, like legislatures, do not generally resolve massive problems in one fell swoop, but instead whittle away over time, refining their approach as circumstances change and they develop a more nuanced understanding of how best to proceed.” Section 7 consultation will provide an important opportunity for agencies to analyze the cumulative impact of the greenhouse gas emissions of their actions on the polar bear, and to incorporate measures to reduce or eliminate those emissions.

While Section 7 only applies to federal actions and agencies, the prohibitions of Section 9 apply far more broadly, reaching the actions of private entities and corporations. Section 9 prohibits the “take” of listed species, which includes “harming” and “harassing” members of the species in addition to simply killing them directly. Both the legislative history and case law support “the broadest possible” reading of “take.” *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687, 704-05 (1995). Section 9 will clearly apply to direct impacts to polar bears and their habitat; it remains to be seen how and if Section 9 will be applied to greenhouse gas emissions.

⁷ July 2, 2007 Memorandum to Regional Director, Navajo Regional Office, Bureau of Indian Affairs, Gallup, New Mexico from Supervisor, New Mexico Ecological Services Field Office, U.S. Fish and Wildlife Service, Albuquerque, New Mexico.

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In addition to the prohibitions of Sections 7 and 9, global warming will be implicated in virtually every other aspect related to the listing of the polar bear. Critical habitat will have to be designated for the species. Sea ice is obviously essential to the species' survival so such areas will ultimately have to be designated as critical habitat. The ESA also requires that a recovery plan for the polar bear be prepared and *implemented*. There is no hope for recovery, much less survival, of the polar bear absent substantial reductions in greenhouse gas emissions. Any legally adequate recovery plan must therefore include mandates to reduce such emissions.

B. Had the Polar Bear been Listed under the Act by January 9, 2008, the Chukchi Lease Sale 193 Could not Have Proceeded Absent Additional Environmental Review on the Impacts to Polar Bears

At the same time that one Interior Department agency, the FWS, failed to meet the mandatory, legally enforceable deadline for a final polar bear listing decision, another Interior Department agency, the MMS, auctioned off millions of acres of prime polar bear habitat to oil companies for oil and gas development in the Chukchi Sea. The Chukchi Lease Sale 193, described below, is a federal action which more than meets the threshold that it "may affect" ESA listed species and therefore undergo the Section 7 consultation process. Rather than undertake a good faith analysis of the impacts of Chukchi Lease Sale 193 on the polar bear, the administration instead evaded its duty to do so by illegally delaying the polar bear listing until after the Lease Sale was completed. The administration deliberately handed out entitlements to oil companies for activities incompatible with polar bear conservation in prime polar bear habitat prior to analyzing their impacts on the species.

1. *The Offshore Oil and Gas Leasing Process and Chukchi Sale 193*

Offshore oil and gas leasing is carried out pursuant to the Outer Continental Shelf Lands Act, 43 U.S.C. §§1331-56 ("OCSLA"), which authorizes the Secretary of the Interior to grant leases for the exploration, development, and production of oil and gas resources from the submerged lands of the United States outer continental shelf. OCSLA establishes a five-step process for oil and gas development on the outer continental shelf. First, under Section 18, the Secretary must adopt a five-year leasing program that sets forth a proposed schedule of lease sales. 43 U.S.C. §1344. Second, the Secretary may then sell any lease to the "highest responsible qualified bidder." *Id.* at §1337. Third, lease holders conduct oil and gas exploration pursuant to an approved exploration plan. *Id.* at §1340. This is followed by development and production of the oil and gas found. *Id.* at §1351. The fifth and final step of the OCSLA process is sale of the recovered oil and gas. *Id.* at §1353.

The most recent five-year plan covers the years 2007-2012 and went into effect on July 1, 2007. The 2007-2012 Outer Continental Shelf Oil and Gas Leasing Program is the culmination of the administration's energy policy, furthering our national addiction to fossil fuels, contributing to global warming, and at the same time directly despoiling the habitat of polar bears and other imperiled wildlife. The program schedules 21 lease sales in eight planning areas across the nation; 12 sales are scheduled for the Gulf of Mexico, eight off the coast of Alaska, and one off the coast of Virginia. A total of five sales, including Chukchi Sale 193, are

scheduled for the heart of polar bear habitat in the Chukchi and Beaufort Seas, our nations “Polar Bear Seas.”

The Chukchi Lease Sale 193 was the first lease sale held under the 2007-2012 Outer Continental Shelf Oil and Gas Leasing Program. On February 6, 2008, the MMS offered thirty million acres of prime polar bear habitat to oil companies for leasing, and received \$2.7 billion in high bids. The MMS wrote in its February 27, 2008 Leasing and Environment Weekly Report: “In February, we received approval from the Department of Justice and Fair Trade Commission to issue the Sale 193 leases. The SOL sent its Certification of Lease Instrument for 60 lease forms on Feb. 27, 2008.”

The Center, along with a coalition of Alaska Native and conservation organizations has challenged the decision to hold the Chukchi lease sale. *Native Village of Point Hope, et al. v. Kempthorne, et al.*, 08-cv-00004-RRB. The lawsuit, filed shortly before the lease sale, challenges the inadequacy of the environmental documents conducted under the National Environmental Policy Act (NEPA) and under the ESA (for species other than the polar bear, which, of course, is not yet listed). A favorable court decision could invalidate the sale and the leases, and avoid an expensive taxpayer buy-out of the leases and windfall profit for the oil companies. However, by illegally delaying the polar bear listing decision to hold the sale without analyzing the impacts of the sale on polar bears under the Endangered Species Act, the administration has deprived the polar bear of the protection it needs and deserves today, and has set up a future train wreck that may require yet another expensive taxpayer buy out of the oil company leases.

2. Overview of Impacts of the Chukchi Lease Sale 193

The Chukchi Sea is one of the most remote, extreme, and little studied areas of the planet. There is much about the ecology of the area that is still unknown to science. For example, there is no reliable population estimate for the Chukchi Sea population of polar bears, nor is there a reliable population estimate for ringed seals, spotted seals, ribbon seals, or bearded seals, or for many other species. Yet the information that is available indicates that we have every reason to be extremely concerned about the impact of oil and gas development on the polar bear and the marine environment.

According to the MMS’s own EIS for Chukchi Lease Sale 193, there is a 40% chance of a large oil spill over the lifetime of the oil and gas activities to be carried out under the lease sale (MMS 2007: IV-20).⁸ Polar bears that come into contact with oil will generally groom themselves in an attempt to clean the oil, will ingest it, and will die. For those few polar bears that do not die immediately, or that are subject to smaller concentrations of oil, they “would be very susceptible to the effects of bioaccumulation of contaminant associated with spilled oil, which would affect the bears’ reproduction, survival, and immune systems ...and suppress the recovery of polar bear populations due to reduced fitness of surviving animals” (MMS 2007: IV-167).

⁸The 95% Confidence Interval is 27-54% chance of a major oil spill.

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Oil and gas development will impact polar bears in multiple ways in addition to oil spills. For example, seismic activities may disturb polar bears and/or their prey and could cause them to abandon an area all together. MMS acknowledges that some of these potential impacts, such as seismic activities in open water, simply have not been studied (MMS 2007: IV-164). These activities may interact with global warming in a cumulative and synergistic fashion. While a healthy bear population may be able to withstand some disturbance, for a population already stressed due to global warming, melting sea ice, and changing food availability, additional disturbance and energetic costs could be extremely harmful and could cause the death of individual bears, contributing to a population decline.

Oil and gas development activities will also increase human-bear interactions, which often prove fatal to the bears. The MMS admits that developments along the Alaskan Arctic coast “undoubtedly will increase the number of polar bear – human conflicts that occur” and that “even with the best mitigation measures in place, it is certain that that some bears will be harassed or killed as a result of industrial activities in their habitat” (MMS 2007: IV-164).

Despite this information on the adverse impacts of oil development in the Chukchi Sea on the polar bear, the Department of Interior illegally delayed the polar bear listing decision while rushing to approve the Chukchi Lease Sale 193, thus avoiding its duty to ensure that the oil and gas activities will not jeopardize the continued existence of the polar bear.

3. The Consequences of the Listing Delay

The primary consequence of holding the lease sale prior to listing is that the procedural and substantive obligations of Section 7 of the ESA, which might preclude leasing in the first instance, were not be applied until after rights had already been transferred to the highest oil company bidders.

Section 7(a)(2) requires that:

Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat of such species.

At the completion of consultation FWS issues a biological opinion that concludes whether or not the action is likely to jeopardize the species (or adversely modify any designated critical habitat).

During the course of consultation, Section 7(d) prohibits both agencies (e.g. MMS) and permittees (e.g. the oil companies) from making “irreversible and irretrievable” commitments of resources.

After initiation of consultation required under subsection (a)(2) of this section, the Federal agency and the permit or license applicant shall not make any irreversible or irretrievable commitment of resources with respect to the agency action which

has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection (a)(2) of this section.

In sum, if the lease sale had been held after the polar bear were listed under the Endangered Species Act, the MMS could not lawfully have accepted bid or issued the leases until after it had completed consultation with FWS and received a no-jeopardy biological opinion. We do not believe that the lease sale as proposed could lawfully receive a no-jeopardy opinion (see “jeopardy” definition, *supra*). Certainly as a procedural matter, because FWS has stated that it doesn’t have enough information to designate the polar bear’s critical habitat (areas that are essential to the survival and recovery of the species), FWS cannot at the same time affirmatively conclude that turning a huge swath of habitat into an oil and gas production zone will *not* jeopardize the species.

Because the sale was held prior to listing, only the requirements for a conference opinion applied.

Each Federal agency shall confer with the Secretary on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed.

16 USC § 1536(a)(4).

Critically important, the prohibition of irreversible and irretrievable commitment of resources does not apply for proposed species.

This paragraph does not require a limitation on the commitment of resources as described in subsection (d) of this section.

16 USC § 1536(a)(4).

In other words, even if the lease sales would ultimately result in jeopardy to the polar bear, MMS is not precluded from issuing them if the bear is not yet listed.

Once the bear is listed the provisions requiring reinitiation of consultation would apply because the sale has already occurred.

Reinitiation of formal consultation is required and shall be requested by the Federal Agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and:

...
(d) If a new species is listed or critical habitat designated that may be affected by the identified action.

50 CFR § 402.16. The key term here is “discretionary.” We believe the Secretary retains discretion over the leases and would need to enter into consultation on the effects of the lease sale. However, under the Bush administration, federal agencies have consistently taken the position that an action is complete once a permit or lease is issued and therefore reinitiation of

consultation is not required. It is therefore not certain that consultation on the impacts of the lease sale will happen once the polar bear is listed.

Even if MMS and FWS do in fact reinstate consultation over the Chukchi Lease Sale 193 when the bear is listed, it is an open question whether MMS would cancel or suspend the leases if there is a jeopardy finding. OCSLA states that MMS can suspend a lease if there is

a threat of serious, irreparable, or immediate harm or damage to life (including fish and other aquatic life), ...or to the marine, coastal, or human environment.

43 USC § 1334(a)(1)(B). While we believe a jeopardy finding would meet this criteria we are unaware of MMS ever suspending a lease sale for reasons of a jeopardy finding. Following suspension, MMS can only cancel a lease for such reasons after 5 year of suspension, and after a hearing, with the lessee entitled to compensation. 43 USC § 1334(a)(2)(B) & (C).

While eventual listing of the polar bear would trigger ESA review of later stages of the oil development process (exploration and development) and might require retrospective review of the already-held leasing process, the key distinction is that lease rights will have already been passed to oil company bidders and such leases can only be suspended and ultimately cancelled after a lengthy and costly process to the federal government, a process that to our knowledge has never been invoked for ESA reasons.

By holding the lease sale prior to conducting a review of the impacts to polar bears, the agencies also lost the flexibility to exclude some areas entirely from the leasing. The administration thus created precisely the “bureaucratic steamroller” that the ESA and our other environmental laws are designed to avoid. If the FWS were to go back and reinstate consultation on the impact to the polar bear, and were to find that the oil and gas activities would jeopardize the polar bear, then those leases would have to be suspended and then likely bought back from the oil companies at great expense to the American taxpayers.

In sum, had the polar bear been listed prior to the lease sale, the sale could not have gone forward until the FWS had demonstrated that the sale would not jeopardize the continued existence of the species. Moreover, the final outcome of the consultation process would be judicially reviewable, ensuring accountability and compliance with the substantive standards of the ESA.

C. The Endangered Species Act Provides Broader Protections than the Marine Mammal Protection Act

The Secretary has asserted that the delay in ESA listing for the polar bear is of little consequence as the species is adequately protected under the Marine Mammal Protection Act (MMPA). While the MMPA provides significant protection for the polar bear, ESA protections are more far reaching and ultimately likely to be much more effective.

In brief, the primary protection the MMPA provides is a prohibition against the unpermitted “take” (i.e. intentional killing or unintentional harassment) of marine mammals. This prohibition is similar to the ESA’s Section 9 take prohibition. Authorization to allow take

of polar bears and other marine mammals is provided for in the MMPA pursuant to incidental harassment authorizations (IHAs) or 5-year incidental take regulations.

Permits to allow take are freely given by FWS to the oil industry. FWS has issued an IHA for polar bears to Shell for seismic surveys in the Chukchi Sea in 2007 and in 2006 issued a set of regulations issuing in essence a blank check for take of polar bears from *all* oil industry activities in the Beaufort Sea. Such regulations could not lawfully have been issued if the bear were already ESA listed.

The MMPA also has no procedural requirement akin to Section 7 of the ESA that requires agencies to affirmatively look at the impacts of their activities on marine mammals or to avoid jeopardy. The MMPA has no requirement to protect critical habitat. The MMPA has no requirement to develop a recovery plan for a species. Significantly, the MMPA does not have a citizen suit provision, so enforcement is left entirely to FWS. This is no academic matter as from March 2005 until August 2006 no operative MMPA take authorizations for oil and gas operations existed in the Beaufort Sea in Alaska but industry activities resulting in take of polar bears continued with no enforcement from FWS.

The MMPA, while an important conservation statute, simply is insufficient to protect the polar bear from both the direct impacts of the oil industry in its habitat, and from the impacts of greenhouse gas emissions on its sea ice habitat. The ESA, properly implemented, can help address both these threats.

IV. Absent Endangered Species Act Protection and Rapid Action to Reduce Greenhouse Gas Emissions, Polar Bears will Become Extinct

While the Bush administration illegally delays the polar bear listing decision, our window of opportunity to save these magnificent animals is closing. While there is still time to slow Arctic warming and give this species back its future, the urgency of the need for action cannot be overstated. The remainder of this paper sets forth the current and future impact of global warming on the polar bear. For a full description of actions in addition to Endangered Species Act listing necessary to save polar bears, please see the Center for Biological Diversity Report *Not Too Late to Save the Polar Bear: A Rapid Action Plan to Address the Arctic Meltdown*.⁹

A. Observations of Global Warming Impacts to the Polar Bear to Date

Polar bears are among the most ice-dependent of all Arctic species and require sea-ice habitat for survival (Regehr et al. 2007; Derocher et al. 2004). Polar bears need sea ice as a platform from which to hunt ringed seals and other prey, to make seasonal migrations between

⁹ Available at <http://www.biologicaldiversity.org/publications/papers/ArcticMeltdown.pdf>

the sea ice and their terrestrial denning areas, and for other essential behaviors such as mating (*Id.*) Unfortunately, the sea ice upon which polar bears depend is rapidly melting away.

Global warming is impacting the Arctic earlier and more intensely than any other area of the planet. In parts of Alaska and western Canada, winter temperatures have increased by as much as 3.5° C in the past 30 years (Rozenzweig et al. 2007). Over the next 100 years, under a moderate emissions scenario, annual average temperatures in the Arctic are projected to rise an additional 3-5° C over land and up to 7° C over the oceans (Meehl et al. 2007).

As early as 1972, scientists noted that the polar bear could be adversely impacted by warming via changes in the sea ice and snow cover (Lentfer 1972:169). Canadian researchers were the first to document changes in polar bear parameters such as declining body condition, lowered reproductive rates, and reduced cub survival in the Western Hudson Bay population throughout the late 1980's and early 1990's (Stirling and Derocher 1993). Over the next decade and beyond, these researchers and their colleagues have continued to document the relationships between climate, sea ice, and polar bear physiological and demographic parameters. Stirling et al. (1999) established the link between global warming and reduced polar bear physical and reproductive parameters, including body condition and natality.

A 2004 peer-reviewed analysis by three of the world's foremost experts on the species, *Polar bears in a warming climate* (Derocher et al. 2004:163), concluded that "it is unlikely that polar bears will survive as a species if the sea ice disappears completely as has been predicted by some." Even short of complete disappearance of sea ice, Derocher et al. (2004) predicted a cascade of impacts to polar bears from global warming that will affect virtually every aspect of the species' existence, in most cases leading to reduced body condition and consequently reduced reproduction or survival:

- The timing of ice formation and break-up will determine how long and how efficiently polar bears can hunt seals. A reduction in the hunting season caused by delayed ice formation and earlier break-up will mean reduced fat stores, reduced body condition, and therefore reduced survival and reproduction.
- Reductions in sea ice will in some areas result in increased distances between the ice edge and land. This will make it more difficult for female bears that den on land to reach their preferred denning areas. Bears will face the energetic trade-off of either leaving the sea ice earlier when it is closer to land or traveling further to reach denning areas. In either case, the result is reduced fat stores and likely reduced survival and reproduction.
- Reductions in sea-ice thickness and concentration will likely increase the energetic costs of traveling as moving through fragmented sea ice and open water is more energy intensive than walking across consolidated sea ice.
- Reduced sea-ice extent will likely result in reductions in the availability of ice-dependent prey such as ringed seals, as prey numbers decrease or are concentrated on ice too far from land for polar bears to reach.

- Global warming will likely increase the rates of human/bear interactions, as greater portions of the Arctic become more accessible to people and as polar bears are forced to spend more time on land waiting for ice formation. Increased human/bear interactions will almost certainly lead to increased polar bear mortality.
- The combined effects of these impacts of global warming on individual bears' reproduction and survival are likely to ultimately translate into impacts on polar bear populations. Impacts will be most severe on female reproductive rates and juvenile survival. In time, reduction in these key demographic factors will translate into population declines and extirpations (*Id.*).

Summarizing the various likely impacts of global warming on the polar bear, Derocher et al. (2004:172) come to the following sobering conclusion:

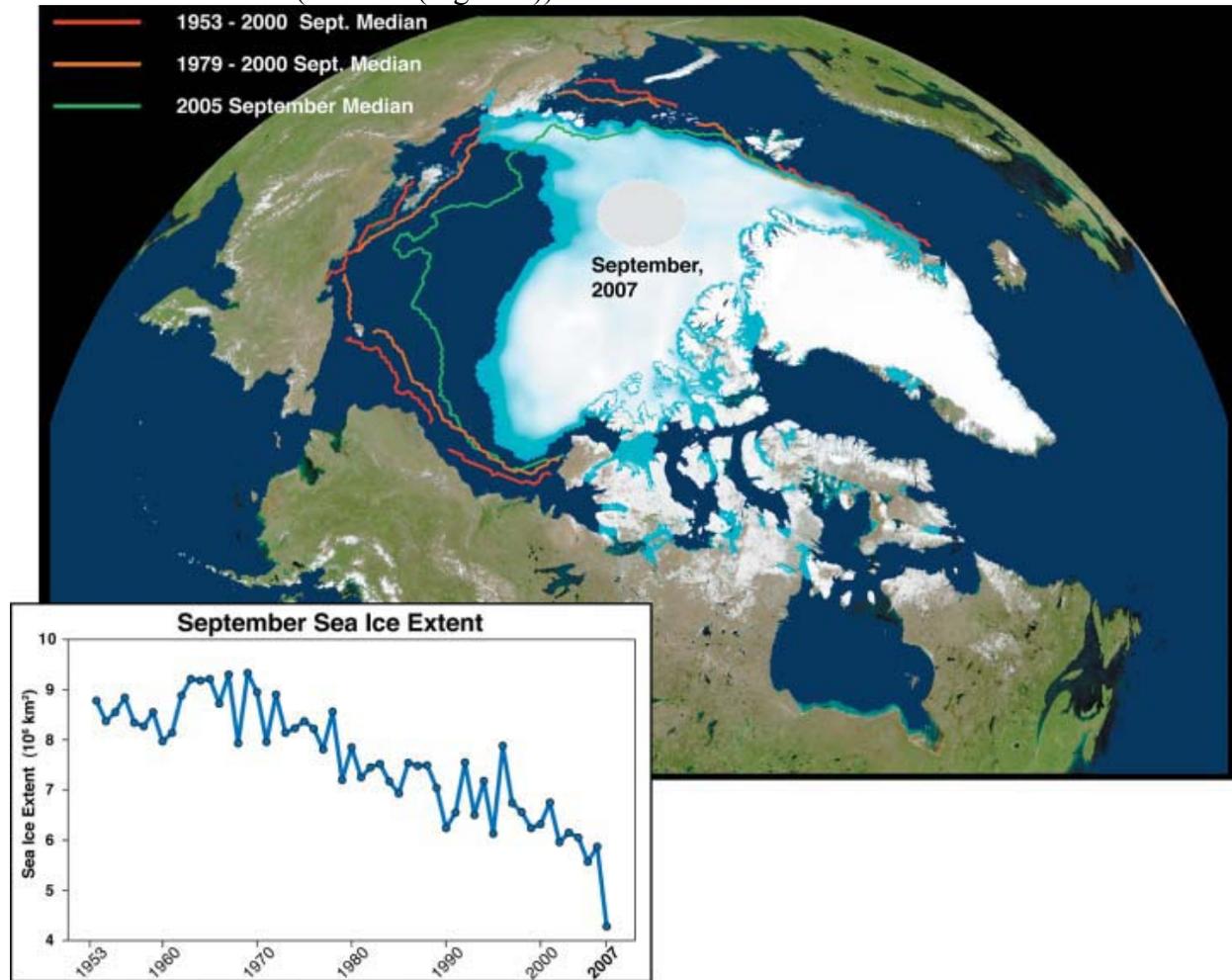
In contrast to many terrestrial and most marine species that may be able to shift northward as the climate warms, polar bears are constrained in that the very existence of their habitat is changing and there is limited scope for a northward shift in distribution. Due to the long generation time of polar bears and the current pace of climate warming, we believe it unlikely that polar bears will be able to respond in an evolutionary sense. Given the complexity of ecosystem dynamics, predictions are uncertain but we conclude that the future persistence of polar bears is tenuous. (emphasis added).

Since 2004, several dramatic trends have emerged. First, the Arctic sea ice melt has accelerated far beyond what was predicted even just several years ago, and second, impacts to polar bear populations have increasingly been documented, including both those that were predicted by Derocher et al. (2004) and additional impacts that were not expected.

This rapid warming of the Arctic is reflected in the devastating melt of the Arctic sea ice, which is highly sensitive to temperature changes. Summer sea-ice extent reached an unpredicted and stunning new record minimum in 2007 (Stroeve et al. 2008; NSIDC 2007a,b; Figure 1)

Figure 1: Sea ice concentration for September 2007, along with Arctic Ocean median extent from 1953 to 2000 (red curve), from 1979 to 2000 (orange curve), and for September 2005 (green curve). September ice extent time series from 1953 to 2007 is shown at the bottom.

Source: Stroeve et al. (2008:13 (Figure 1)).

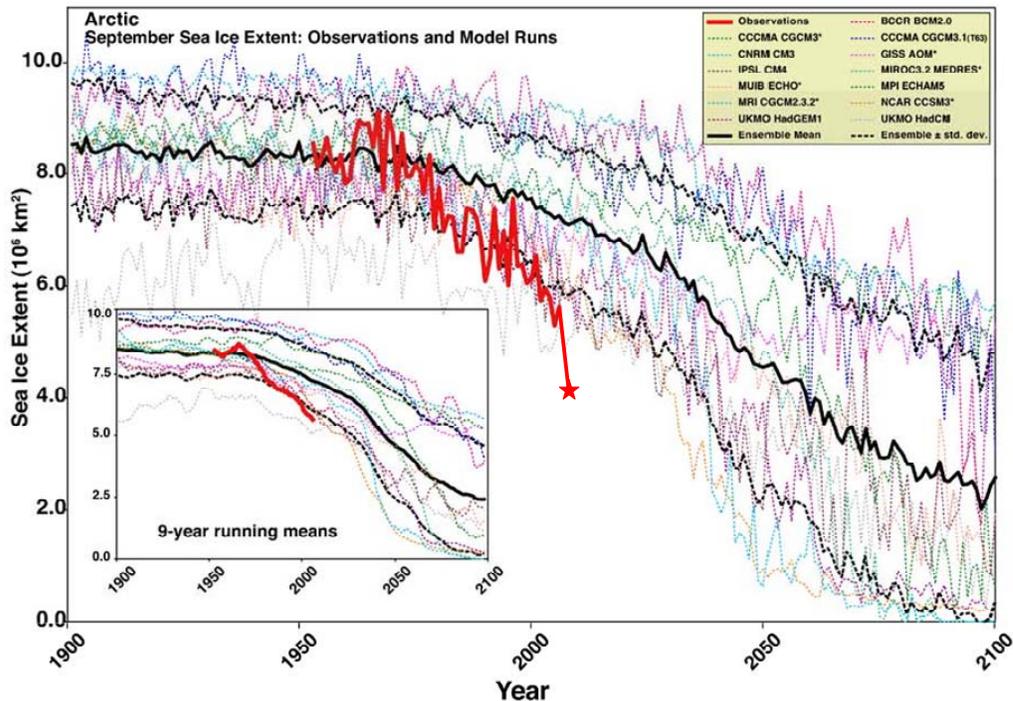


At 1.63 million square miles, the minimum sea-ice extent on September 16, 2007 was about one million square miles¹⁰ below the average minimum sea ice extent between 1979 and 2000 (NSIDC 2007a), and 50% lower than conditions in the 1950s to the 1970s (Stroeve et al. 2008). The 2007 minimum was lower than the sea-ice extent most climate models predict would not be reached until 2050 or later (Figure 2). Leading sea ice researchers now believe that the Arctic could be completely ice free in the summer as early as 2012 (Borenstein 2007) or 2030 (Stroeve et al. 2008).

¹⁰ One million square miles is equal to about the area of Alaska and Texas combined.

Figure 2: Arctic Summer Sea Ice Extent: Observations Compared to Model Runs

Source: After DeWeaver (2007); Stroeve et al. (2007).



Since 2004 scientists have also documented increasing impacts to polar bears. The Western Hudson Bay polar bear population has now declined by 22% — from 1,194 bears in 1987 to 935 bears in 2004 (Aars et al. 2006). The researchers attribute this decline to “increased natural mortality associated with earlier sea ice breakup and to the continued harvest of approximately 40 polar bears per year (Lunn et al. 2002), which at some point ceased to be sustainable” and found no support for alternative explanations (Regehr et al. 2007:2680). Regehr et al. (2007) predict that the more northerly polar bear populations will experience declines similar to those observed in Western Hudson Bay.

The Southern Beaufort Sea population is now also classified by the Polar Bear Specialist Group (“PBSG”) as declining (Aars et al. 2006:34). The population was estimated at 1,800 bears in 1986 and at 1,526 bears between 2001-2006 (Aars et al. 2006).¹¹ The Southern Beaufort Sea population has also experienced statistically significant declines in cub survival, cub skull size, and adult male weight and skull size, the same types of declines observed in Western Hudson Bay prior to the population decline (Regehr et al. 2006).

Regehr et al. (2006:14) report several instances of polar bear starvation in the Southern Beaufort Sea population in the spring of 2006:

¹¹ While the overlap of the more recent study’s confidence interval with the previous point estimate prohibits an unequivocal statistical conclusion that the sub-population has declined, multiple lines of evidence indicate a population in decline (Aars et al. 2006).

In spring of 2006, three adult female polar bears and one yearling were found dead. Two of these females and the yearling had depleted their lipid stores and apparently starved to death. Although the third adult female was too heavily scavenged to determine a cause of death, her death appeared unusual because prime age females have had very high survival rates in the past (Amstrup and Durner, 1995).

Figure 3: Polar Bear in the Final Stages of Starvation
(Photo by Heiko Wittenborn).



Figure 3 shows a polar bear in the final stages of starvation. This photo was taken on September 4, 2007 on the Caniapiscou River in Canada, 160 km inland from Ungava Bay. While we cannot say for sure that this bear starved to death as a direct result of global warming, as we do not know the bear's history or origin, we do know that global warming will increase the number of bears that suffer this fate.

Polar bear experts have also observed evidence of male polar bears killing and consuming two adult female polar bears and one yearling male in early spring 2004 (Amstrup et al. 2006). These experts state

During 24 years of research on polar bears in the southern Beaufort Sea region of northern Alaska and 34 years in northwestern Canada, we have not seen other incidents of polar bears stalking, killing, and eating other polar bears. We hypothesize that nutritional stresses related to the longer ice-free seasons that have occurred in the Beaufort Sea in recent years may have led to the cannibalism incidents we observed in 2004 (Amstrup et al. 2006).

Stone and Derocher (2007) reported an additional incident of polar bear cannibalism in summer 2006 in Svalbard, Norway. An adult male bear in poor physical condition killed and ate a seven month old cub while both the polar bear mother and zodiacs full of tourists watched (Stone and Derocher 2007). The authors ascribe the incident to nutritional stress (Stone and Derocher 2007).

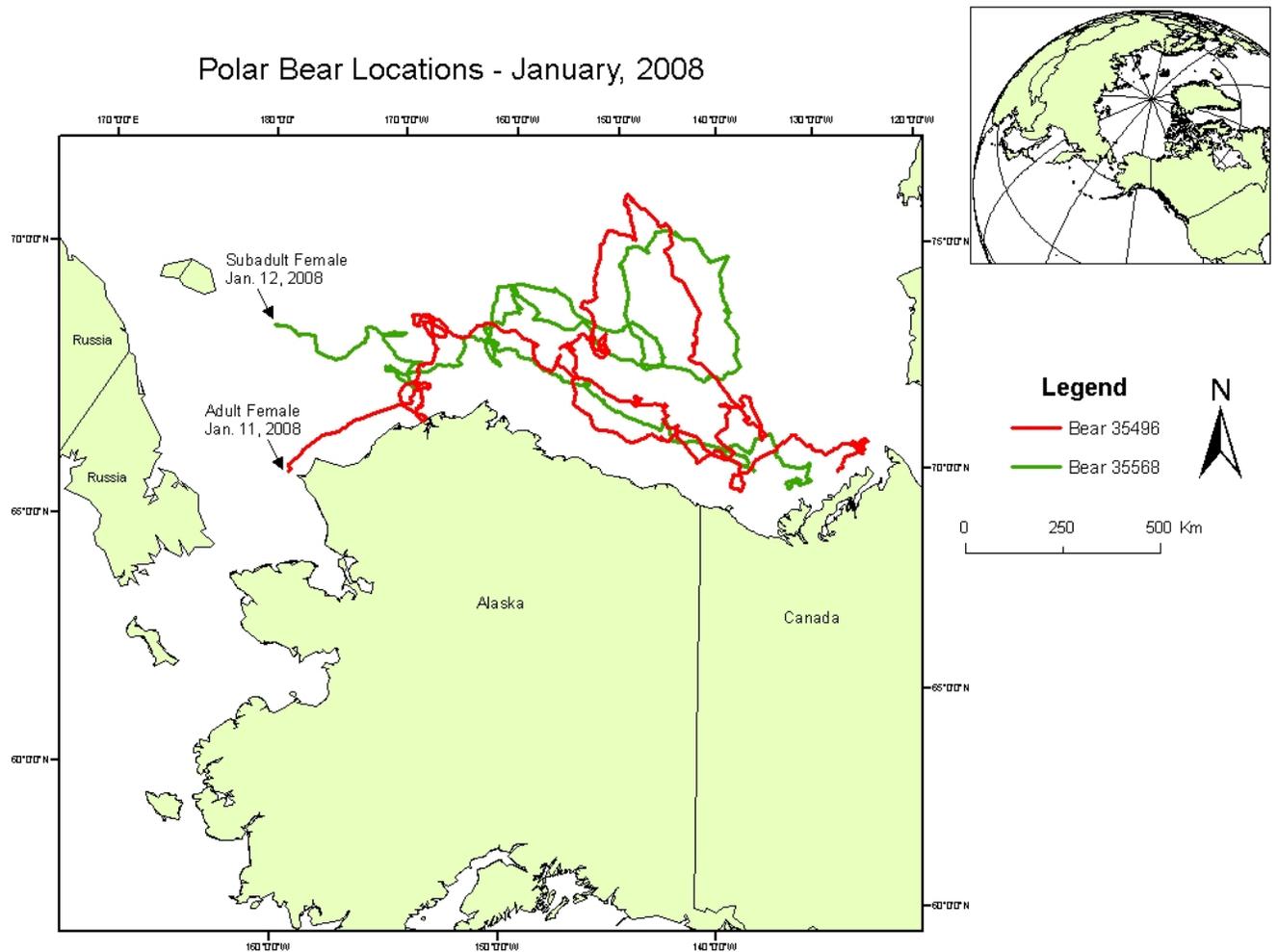
Impacts that were not previously predicted have been observed as well. In 2004, researchers with the U.S. Minerals Management Service observed the carcasses of four bears that had drowned in the Beaufort Sea during a period of high winds and rough seas between 10 and 13 September 2004 (Monnett and Gleason 2006). Because these scientists were able to observe only a relatively small area during their aerial surveys, they estimate via spatial extrapolation that 27 bears may have died during this time period (Monnett and Gleason 2006). Lone females and females with cubs may also be particularly prone to mortality during long-distance travel in open water, leading to “rather serious population-level implications” (Monnett and Gleason 2006). They conclude

Our observations of higher numbers of swimming polar bears in open water than previously supposed should be considered by analysts and managers relative to marine transportation, ice-breaking, oil and gas development and other potential activities in open water (Monnett and Gleason 2006).

While the scientific publication process often leads to a delay between the observation of impacts and the transmission of that information to the public, media, and decisionmakers, it is apparent that further changes, both those previously predicted and those not anticipated, continue to occur. For example, this year researchers tracking radio collared bears in Canada have observed movements on a scale that is unprecedented, including the movement of bears from the Canadian portion of the Southern Beaufort Sea population into the Chukchi Sea (A. Derocher, pers.com.; Figure 4). While it is too early for scientists to draw firm conclusions from these preliminary observations (A. Derocher, pers. com.), this is further evidence of an ecosystem and species undergoing rapid change. One of the world’s leading polar bear scientists stated on 14 January 2008 “My sense is that the ‘traditional’ movement patterns aren't possible now given the massive melt this past summer” (A. Derocher, pers. com.).

Figure 4: Selected Locations of Bears 35496 and 35568 through 12 January 2008

Source: Andrew Derocher, unpubl. data.



In 2007, the U.S. Fish and Wildlife Service (“FWS”) requested that the Department of Interior’s U.S. Geological Survey (USGS) address a series of research questions relating to the status of the polar bear. The FWS asked the USGS to do the following in support of the listing process: (1) develop population projections for the Southern Beaufort Sea polar bear population and analyze existing data on two polar bear populations in Canada; (2) evaluate northern hemisphere sea-ice projections, as they relate to polar bear sea-ice habitats and potential future distribution of polar bears; and (3) model future range-wide polar bear populations by developing a synthesis of the range of likely numerical and spatial responses to sea-ice projections. The USGS produced nine administrative reports addressing these questions and in doing so significantly advanced the understanding of sea-ice loss and its implications for polar bears.

To address the question of the future status of the polar bear in a warming Arctic, the USGS conducted polar bear population modeling based on 10 general circulation models (“GCMs,” or “climate models”) that most accurately simulate future ice conditions (Amstrup et

¹² See <http://ice-glaces.ec.gc.ca/App/WsvPageDsp.cfm?id=11892&Lang=eng>.

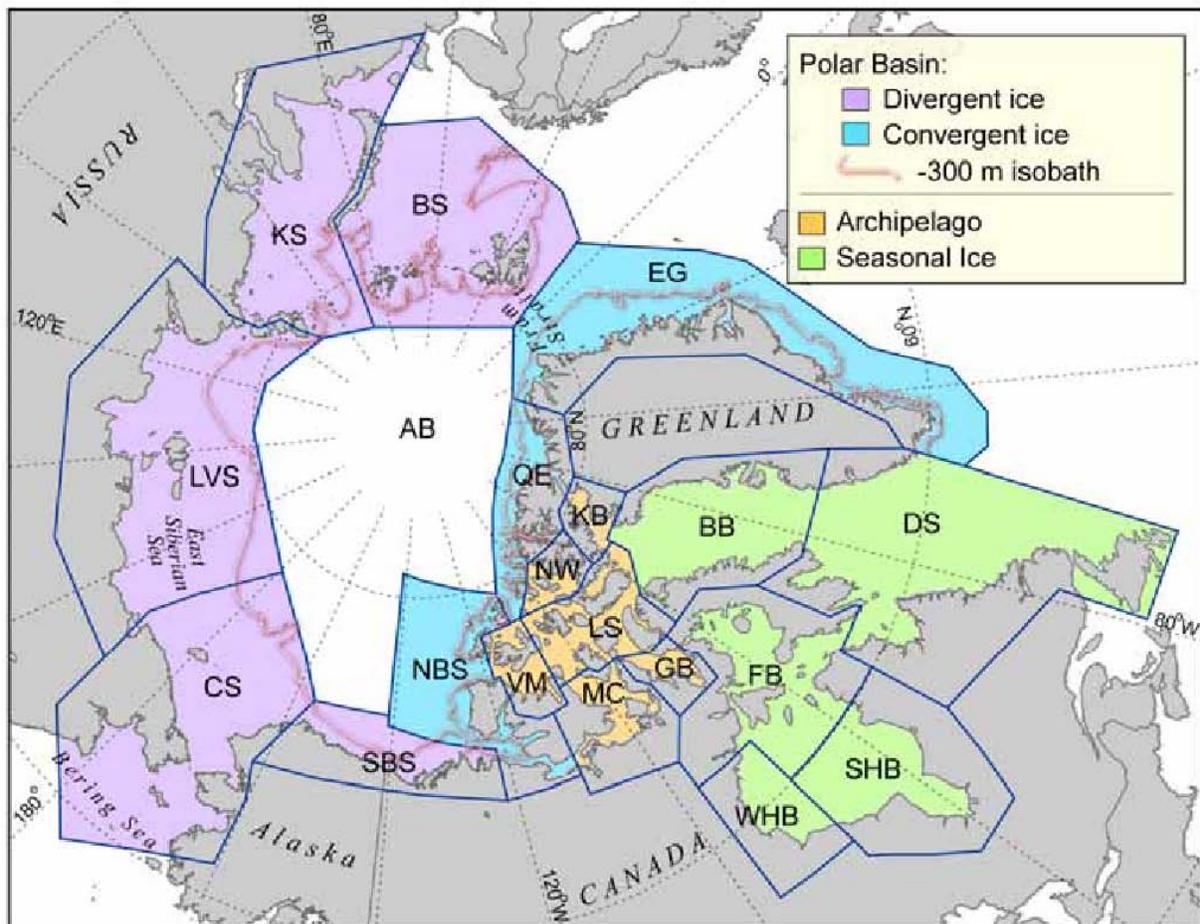
al. 2007). The USGS used the Intergovernmental Panel on Climate Change (“IPCC”) A1B “business as usual” scenario of future emissions to run the climate models (Amstrup et al. 2007). In the A1B scenario, atmospheric carbon dioxide concentrations reach 717 parts per million by 2100.

The USGS divided the world’s polar bear populations into four ecological regions:

The (1) Seasonal Ice Ecoregion which includes Hudson Bay, and occurs mainly at the southern extreme of the polar bear range, (2) the Archipelago Ecoregion of the Canadian Arctic, (3) the Polar Basin Divergent Ecoregion where ice is formed and then advected away from near-shore areas, and (4) the Polar Basin Convergent Ecoregion where sea ice formed elsewhere tends to collect against the shore (Amstrup et al. 2007:1).

Figure 5: Map of Polar Bear Ecoregions used by USGS

Source: Amstrup et al. (2007:82).



The USGS projected the future range-wide status of polar bears using both a deterministic model of past, current, and future polar bear carrying capacity which assumed a linear relationship between bear density and annual average sea ice extent,” and a Bayesian network model that

combined “empirical data, interpretations of data, and professional judgment into a probabilistic framework” (Amstrup et al. 2007:1). The deterministic model did not include seasonal changes in ice availability or other stressors, and thus provided an optimistic view of the impact of sea ice loss on polar bear populations (Amstrup et al. 2007). The Bayesian network model did incorporate information about annual and seasonal sea ice loss as well as other population stressors and thus provides a more realistic projection of future impacts (Amstrup et al. 2007). The “overall outcome” of the Bayesian network model was “a statement of the relative probabilities that the population in each ecoregion would be larger than now, same as now, smaller, rare, or extinct” (Amstrup et al. 2007:15). The results of the USGS study are profoundly disturbing.

The USGS projects that polar bears will be extinct in the Seasonal Ice and Divergent Ice ecoregions by the middle of this century (Amstrup et al. 2007). These two ecoregions account for two thirds of the world’s polar bears, including all of the bears in Alaska. The “good news” is that polar bears may survive in the high Canadian Archipelago and portions of the Convergent Ice ecoregion through the end of this century. However, their extinction risk is still extremely high: over 40% in the Archipelago and over 70% in Northwest Greenland (Amstrup et al. 2007:66-67 (Table 8)). Moreover, the most likely outcome for each of these ecoregions by the end of this century is also extinction (*Id.*).

Table 4 displays a subset of the output from the USGS Bayesian Network model. Projections are given only for the ensemble mean (“middle of the road”) sea ice projections of the 10 climate models used. The most likely (or “dominant”) outcome and the probability of extinction at year 45 and year 100 for reach of the four ecoregions are displayed.

Table 4: Most Likely Modeled Outcome and Probability of Extinction for Each of the Four Polar Bear Ecoregions Based on the Ensemble Mean Projections of the 10 Climate Models (Source: Amstrup et al. (2007:66-67 (Table 8)).

Ecoregion	Time Period	Most Likely Outcome^a	Probability of Extinction
Seasonal Ice	Year 45	EXTINCT	77.19%
	Year 100	EXTINCT	88.15%
Divergent Ice	Year 45	EXTINCT	80.33%
	Year 100	EXTINCT	83.89%
Convergent Ice	Year 45	EXTINCT	35.06%
	Year 100	EXTINCT	77.30%
Archipelago	Year 45	SMALLER	10.56%
	Year 100	EXTINCT	41.07%

^a Outcome possibilities for the model are “larger than now,” “same as now,” “smaller,” “rare,” or “extinct.”

In addition, the USGS emphasizes that because all of the available climate models have to date underestimated the actual observed sea-ice loss, the assessment of risk to the polar bear may be conservative (*e.g.* Amstrup et al. 2007:34,36). Perhaps most worrisome is the

observation that part of an area in the Canadian Archipelago expected to provide an icy refuge for the polar bear in 2100 lost its ice in the summer of 2007 (Amstrup et al. 2007:35,96).

The USGS projections of polar bear extinction risk are based on the IPCC A1B “business as usual” scenario, near the center of the distribution of all IPCC scenarios, in which atmospheric carbon dioxide concentrations reach 717 parts per million by 2100 (Nakićenović 2000). If future emissions meet or exceed the A1B scenario, the eventual extinction of polar bears is virtually guaranteed, as extinction risk will exceed 40% even in the high Canadian Archipelago in 2100, and warming will continue after 2100. The USGS reports, however, do not address the question of how much polar bear extinction risk can be reduced if greenhouse gas emissions are curtailed significantly below those assumed in the A1B scenario. Decreasing greenhouse gas emissions substantially can limit the Arctic sea-ice melt and therefore lower extinction risk for the polar bear.

While not explicitly making an Endangered Species Act listing recommendation, the information contained in the USGS reports, together with the substantial body of relevant peer reviewed literature and additional data and observations, definitively answers the question of whether the polar bear is in fact in danger of extinction and therefore warrants the protections of the Act with an emphatic “yes.”

As grim as the outlook for the polar bear is, it is not yet hopeless. Unlike the terrestrial ice-sheets of Greenland, the melting of which may become irreversible on human-relevant timeframes, the Arctic sea ice, portions of which melt and reform every year, may be capable of relatively rapid recovery following climate stabilization. Assuming greenhouse emission targets can be met, including reductions of short-lived pollutants like black carbon and methane, the climate can be stabilized, and with subsequent reductions in atmospheric CO₂ levels, the Arctic sea ice can recover to levels supporting long-term viable populations of polar bears and other ice-dependant species.

The key to polar bear persistence then, is weathering the very bumpy ride through the next half-century. To shepherd the polar bear through the ensuing decades, we must reduce all other stressors on the species and its habitat and tailor national and international management of the sensitive Arctic ecosystem to the new reality of a rapidly changing Arctic. Listing the polar bear under the Endangered Species Act, protecting its critical habitat in the Chukchi Sea and elsewhere from oil development, and developing and implementing a recovery plan for the species, are essential steps in this process. The polar bear can not wait much longer for us to begin.

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