UNITED STATES DISTRICT COURT FOR THE DISTRICT OF COLUMBIA

IN RE POLAR BEAR ENDANGERED SPECIES ACT LISTING AND § 4(d) RULE LITIGATION	**Misc. Action No. 08-0764 (EGS)** **MDL Docket No. 1993**
This Document Relates To: **No. 1:08-cv-2113, *Center for Biological Diversity, et al. v. Kempthorne, et al.***	

PLAINTIFFS CENTER FOR BIOLOGICAL DIVERSITY, NATURAL RESOURCES DEFENCE COUNCIL AND GREENPEACE, INC.'S MOTION FOR SUMMARY JUDGMENT REGARDING THE LISTING RULE

Pursuant to Federal Rule of Civil Procedure 56 and the Court's August 21, 2009 Case Management Order (Dkt # 115), Plaintiffs Center for Biological Diversity, Natural Resources Defense Council, and Greenpeace, Inc. move this Court for summary judgment on the First Claim for Relief in their Third Amended Complaint regarding the Federal Defendants' failure to properly classify the polar bear as an endangered species in all or parts of its range. This motion is based on the accompanying Memorandum of Points and Authorities, the Declarations of Melanie Duchin, Jenny Ross, and Kieran Suckling filed currently, the pleadings, records and files in this action, and other such documentary and oral evidence that may be supplied at the hearing.

DATE: October 20, 2009

Respectfully Submitted,

By: /s/ Kassia R. Siegel

Brendan R. Cummings
Kassia R. Siegel
CENTER FOR BIOLOGICAL DIVERSITY

P.O. Box 549
Joshua Tree, CA 92252
Phone: (760) 366-2232
Facsimile: (760) 366-2669
bcummings@biologicaldiversity.org
ksiegel@biologicaldiversity.org

Benjamin Longstreth (DC Bar # 974015)
Andrew Wetzler
Rebecca Riley
Natural Resources Defense Council
1200 New York Ave., N.W. Suite 400
Washington, D.C. 20005
Telephone: 202-289-6868
Facsimile: 202-289-1060
blongstreth@nrdc.org
awetzler@nrdc.org
rriley@nrdc.org

Attorneys for Plaintiffs Center for Biological Diversity, Natural Resources Defense Council, and Greenpeace, Inc.

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MEMORANDUM OF POINTS AND AUTHORITIES OF PLAINTIFFS CENTER FOR BIOLOGICAL DIVERSITY, NATURAL RESOURCES DEFENCE COUNCIL AND GREENPEACE, INC. IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT

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I. INTRODUCTION

In September 2007, leading polar bear researchers within the Department of the Interior issued a series of scientific reports investigating the future of the polar bear in a rapidly warming Arctic. These reports paint a grim picture for the future of the species. Two-thirds of the world's polar bears, comprising more than half of the bear's range and including all polar bears in the United States, will likely disappear by mid-century, with few, if any bears remaining anywhere by century's end. As dire as this outlook for the bear's future is, it is likely overly-optimistic. As the reports themselves recognize, the climate models that form the basis of the Interior Department's investigation severely underestimate the actual observed rate of sea-ice loss; sea-ice loss in September 2007 exceeded the loss predicted by the majority of the models for 2050. Moreover, Interior's forecasts were based on "middle of the road" emissions trajectories. Actual emissions currently exceed even the worst-case scenarios used in climate modeling. Loss of "only" two-thirds of the world's polar bears by mid-century is increasingly looking like a best-case scenario for the species.

The disastrous impacts of global warming on the polar bear are not just something predicted for the future; they have already arrived. Polar bears are starving, drowning, and resorting to cannibalism as the ice melts. In addition, the population levels of the two best-studied populations are declining. Moreover, global warming is not the only threat to the species, nor is it occurring in isolation; many polar bear populations are also subject to severe and unsustainable levels of hunting, the contamination of their food with toxic chemicals, and increased oil and gas development in their habitat. The polar bear is not just hovering on the brink; it has already been pushed over the edge.

The Endangered Species Act (ESA), 16 U.S.C. §§ 1531 *et seq*., requires the Secretary of

the Interior to list a species as "endangered" if it "is in danger of extinction throughout all or a significant portion of its range." 16 U.S.C. § 1532(6) (emphasis added). A species is "threatened" if it "is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." 16 U.S.C. § 1532(20). Thus, if the best available science showed that polar bears were in danger of becoming extinct in a significant portion of their range, the Secretary was obligated to list the species as an endangered—and not merely a threatened—species.

Despite this clear statutory command, and the Interior Department's own studies showing that two-thirds of the world's polar bears, occupying more than half of the species' geographic range, face at least a 77% chance of extinction by mid-century, the Secretary somehow concluded that the polar bear was not in danger of extinction in a "significant portion of its range." By listing the polar bear as "threatened" rather than "endangered," the Secretary ignored the "best available science," the expert recommendations of the United States Marine Mammal Commission, and the plain language of the ESA. As a consequence, polar bears have been denied protections to which they are lawfully entitled and which they desperately need. Plaintiffs Center for Biological Diversity, Natural Resources Defense Council and Greenpeace challenge this arbitrary and unlawful decision. The Secretary's decision should be remanded with directions to the Secretary to issue a new final listing determination for the polar bear consistent with both the science and the law.

II. STATUTORY FRAMEWORK

The ESA requires the Secretary of the Interior, through the U.S. Fish and Wildlife Service, to determine whether any species is "endangered" or "threatened." Only those species that have been so listed receive protection under the statute. 16 U.S.C. §1533(a). A species is

"endangered" if it "is in danger of extinction throughout all or a significant portion of its range." 16 U.S.C. § 1532(6). A species is "threatened" if it "is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." 16 U.S.C. § 1532(20). The term "species" is defined broadly under the ESA to include species, subpecies, and "any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature." 16 U.S.C. § 1532 (16).

Section 4 of the ESA sets forth a detailed process by which the Secretary of Interior must add to or modify the list of threatened and endangered species via notice and comment rulemaking. 16 U.S.C. § 1533. In making all listing determinations, the Secretary must consider five statutory listing criteria: (A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. 16 U.S.C. § 1533(a)(1). If a species is imperiled by any one or more of these five factors, the Secretary must list the species. 16 U.S.C. § 1533(1).

The Secretary must base all listing determinations "solely on the basis of the best scientific and commercial data available." *Id.* at § 1533(b)(1)(A). Reliance upon the best available scientific data, as opposed to requiring absolute scientific certainty, "is in keeping with congressional intent" that an agency "take preventive measures before a species is 'conclusively' headed for extinction." *Defenders of Wildlife v. Babbitt*, 958 F. Supp. 670, 680 (D.D.C. 1997). In a listing decision, "the best available science standard gives 'the benefit of the doubt to the species.'" *Center for Biological Diversity v. Lohn*, 296 F. Supp. 2d 1223, 1239 (W.D. Wash. 2003) (citing *Conner v. Burford*, 848 F.2d 1441, 1454 (9th Cir. 1988)).

Once a species is listed, an array of statutory protections applies. For example, Section 7 requires all federal agencies to ensure that their actions neither "jeopardize the continued existence" of any listed species nor "result in the destruction or adverse modification" of its "critical habitat." 16 U.S.C. § 1536(a)(2). Additionally, ESA Section 9 and its regulations prohibit, among other things, "any person" from intentionally or "incidentally" "taking" listed species without a permit from the Secretary. 16 U.S.C. §§ 1538(a)(1)(B) & 1539; 50 C.F.R § 17.31.

The primary regulatory distinction between the "threatened" and "endangered" classifications relates to the applicability of Section 9's prohibition on take. The ESA directly applies Section 9's prohibitions only to species listed as "endangered." 16 U.S.C. § 1538. However, Section 4(d) requires the Secretary to promulgate "protective regulations" for "threatened" species where the agency deems them "necessary and advisable to provide for the conservation of such species," including regulations that apply any or all of the prohibitions of Section 9. 16 U.S.C. § 1533(d).

Shortly after the ESA was enacted, the Secretary promulgated a blanket regulation pursuant to Section 4(d) that, absent a separate species-specific rule, extended all of Section 9's protections for endangered species to all threatened species. 50 C.F.R. § 17.31(a). As a result, the prohibitions of Section 9 and the processes for exemption from such prohibitions through an incidental take permit or an incidental take statement generally apply to both threatened and endangered species.

In some instances, as in this case, the Secretary has promulgated species-specific Section 4(d) rules exempting certain activities from the general take prohibition contained in 50 C.F.R. § 17.31(a). Activities that are permitted by a Section 4(d) rule are deemed not to violate Section 9

and 50 C.F.R. § 17.31(a), even though they may harm, injure, or even kill a threatened species, and no incidental take permit or take authorization pursuant to an incidental take statement is required. Section 4(d) Rules are only available to species listed as "threatened." If the species is listed as "endangered," otherwise prohibited take can only be permitted through an incidental take permit or incidental take statement.

III. STATEMENT OF FACTS

A. Polar Bears in a Warming Arctic

Polar bears live only in the Northern Hemisphere, where sea ice can be found for substantial portions of the year. ARL[1] 117216-7. There are nineteen currently-recognized polar bear populations, which Interior has grouped into four "Ecoregions" found within five countries: the United States (in Alaska), Canada, Denmark (in Greenland), Norway, and Russia. ARL 117220 (Figure 1), 117221-2, 161392 (map in color). Worldwide polar bear abundance is estimated at 20,000-25,000 bears. ARL 117219.

Polar bears are marine mammals and are completely dependent upon Arctic sea ice for survival. ARL 117216, 117259. Polar bears need sea ice as a platform from which to hunt ice-dependent seals, their primary food source; to make seasonal migrations between the sea ice where they feed and their terrestrial denning areas; and to find mates. ARL 117259. Because polar bears can only hunt effectively when on the ice, they undergo partial or complete fasting and nutritional stress when forced onto land either by the seasonal retreat of the sea ice or to give birth to their cubs. ARL 117263, 117280. Female polar bears give birth in snow dens excavated either on land or in the snow on top of the drifting sea ice. ARL 117218-9.

The warming of the climate due to society's production of greenhouse pollution is now

[1] Citations to the administrative record are abbreviated "ARL" for citations to the record prepared for the Listing Rule and "AR4D" for citations to the record prepared for the 4(d) Rule.

not subject to reasonable dispute. ARL 151197. Since 1850, the global average air temperature has increased by about 0.76º C (1.37º F). *Id.* The rate of warming is accelerating, with the rate over the past 50 years nearly twice that of the past 100 years. *Id.* The full impact of greenhouse gases released today takes many decades to be fully realized. Because of this phenomenon, dubbed the "climate change commitment," the climate will continue to warm regardless of future greenhouse gas emissions. Thus, even if anthropogenic greenhouse emissions fell to zero and remained at zero in the future, the planet would continue to warm by at least an additional 0.4º C (0.72º F). ARL 117234, 151206 (climate change commitment shown by the orange line).

For a number of reasons, the Arctic experiences greater and more rapid warming than temperate regions. ARL 153416. Average Arctic air temperatures have increased at almost twice the rate of the rest of the world in the past 100 years, and some areas have warmed at 10 times the world average over the past three decades. ARL 117228, 117274. Even using "middle-of-the-road" projections of future greenhouse gas emissions levels, average temperatures in the Arctic are projected to increase an additional 5º C (9º F) by the end of this century. ARL 117234. Winter temperatures are projected to increase over the Arctic Ocean by up to 10º C (18º F) by the end of the century. ARL 153403.

As a result of this warming, as well as changes in atmospheric and oceanic circulation patterns, Arctic sea ice is melting very rapidly. ARL 117224-8. In September 2007, the Arctic sea-ice extent hit a new record minimum that was 23% lower than the previous record low in 2005, 39% lower than the long term average from 1979-2000, and 50% below sea-ice conditions of the 1950s-1970s. ARL 117224-5, ARL 152650, 160255 (NASA images depicting Arctic sea ice in September 1979 and 2007). The sea-ice extent in the winter is also declining, as is the age and thickness of the ice that remains. ARL 117226-7. The length of the sea ice melt season is

increasing. ARL 117227.

The Arctic sea ice is melting far faster than projected by scientific models, with 2007 ice extent falling far below what any of the models projected for that year. ARL 117237 (Figure 7). Perhaps of most concern, there was less ice in the Arctic in September 2007 than more than half of the models project for 2050. *Id.* (2007 ice extent below model "ensemble mean" for 2050).

Because of their specialized habitats and life history, polar bears are particularly vulnerable to sea ice loss. ARL 117274. Polar bears cannot survive without "large and accessible seal populations and vast areas of ice from which to hunt." ARL 117266. Even short of complete disappearance of sea ice, polar bears will experience a cascade of impacts from global warming impairing nearly every aspect of their existence, including:

- A reduction of the hunting season caused by delayed ice formation in the fall and earlier melting in the spring causes reduced fat stores, reduced body condition, and therefore reduced survival and reproduction. ARL 117265.

- A reduction of ice-dependent prey such as ringed seals threatens the polar bear's food supply, as prey numbers decrease or are concentrated on ice too far from land for polar bears to reach. ARL 117263-4.

- Increased travel distance between sea ice and preferred denning sites on land leads to reduced denning success and population size. ARL 117267-9.

- More and larger open water areas that must be traversed increases the risk of drownings during long distance swimming or swimming in rough weather, and the risk of hypothermia for young cubs not yet able to withstand submersion in icy water. ARL 117266, 117270.

- Reductions in sea-ice thickness and concentration increase the energetic costs of

traveling, as moving through fragmented sea ice and open water takes more energy than walking across consolidated sea ice. ARL 117261.

- Increased human/bear interactions lead to higher bear mortality, 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. ARL 117283-4.

The combined effects of these impacts on individual bears' reproduction and survival result in population declines. ARL 117270-1.

Nor are these impacts just future predictions; they have already been documented. The populations on which the most extensive research has been conducted, Western Hudson Bay in Canada and Southern Beaufort Sea in Alaska, are both known to be in decline due to the impact of global warming and sea-ice loss.[2] ARL 117242. The Western Hudson Bay polar bear population has declined by 22% — from 1,194 bears in 1987 to 935 bears in 2004 – due to the combined impact of global warming and overhunting. ARL 117271. Researchers believe that within the next 15-25 years, Western Hudson Bay polar bears will be unable to obtain enough seals to build the body fat they need to successfully reproduce, and cub survival will become negligible. ARL 117270.

The Southern Beaufort Sea population has also suffered from dramatic sea ice losses and is in decline. ARL 117221, 117272. The population was estimated at 1,800 bears in 1986 and at 1,526 bears between 2001 and 2006. ARL 117272. This population has also experienced statistically-significant declines in cub survival, cub skull size, and adult male weight and skull size. *Id.*

[2] Less definitive trend information is available for other polar bear populations. At the time of listing, scientists considered five of the world's polar bear populations as "declining," six as "data deficient," five as "stable," two as "increasing" (both recovering from severe overhunting), and one as "unclassified." ARL 117221, *see also* 53203-4 (PBSG status table).

In 2006, researchers found at least three bears in the Southern Beaufort Sea population that had starved to death. ARL 117272, ARL 160256 (photo of another polar bear in final stages of starvation in Canada in 2007). In 2004, researchers recorded three incidents of polar bear cannibalism due to food stress, also in the Southern Beaufort Sea population, the first such observations in that region in decades of research. ARL 117272. Another incident was reported from Svalbard, Norway, in 2006. ARL 160284. Numerous polar bears have also drowned. Department of Interior researchers observed the carcasses of four bears that had drowned in the Beaufort Sea during a storm in September 2004, and believe that about 27 bears drowned altogether during that storm. ARL 117267, 159161. Another drowning was reported from Svalbard in 2006. ARL 117267. Scientists expect more bears to drown as the sea ice continues to melt. ARL 117267, 159157.

Interior scientists interpret these observations as a prelude to mass polar bear mortality events in the future: "As changes in habitat become more severe and seasonal rates of change more rapid, catastrophic mortality events that have yet to be realized on a large scale are expected to occur." ARL 117279 (emphasis added).

Not surprisingly, given the serious impacts polar bears are already suffering, the future is bleak for this species. At the request of the Secretary, the U.S. Geological Service (USGS), another Interior Department scientific agency, conducted a number of studies addressing the future status of polar bears in a warming world. ARL 58950. To carry out this analysis, the USGS divided the world's polar bears into four ecological regions based on sea-ice conditions and polar bear population characteristics as follows: (1) the Seasonal Ice Ecoregion which includes Hudson Bay, and occurs mainly at the southern extreme of the polar bear range, (2) the Archipelago Ecoregion in the high Canadian Arctic, (3) the Divergent Ice Ecoregion where ice is

formed and then moved away by prevailing wind and ocean currents, which includes all Alaska bears, and (4) the Convergent Ice Ecoregion where sea ice formed elsewhere tends to collect against the shore. ARL 117221-2, 161392 (color map), 147117 (Executive Summary).

The USGS presented their results in a series of nine reports, culminating in the report entitled *Forecasting the Range-wide Status of Polar Bears at Selected Times in the 21st Century*, which presents the results of the USGS's modeling effort. The Report's model output provides a relative probability that polar bear populations in each Ecoregion would be "larger than now," "same as now," "smaller," "rare," or "extinct." ARL 161325-6; 161376-7 (Table 8).

The most likely outcome for polar bears within 45 years in the Seasonal and Divergent Ice Ecoregions is extinction. ARL 161332, 161376-7 (Table 8), 161401 (Figure 10). The probability of extinction in 45 years under the mean sea-ice projection is 77.19% in the Seasonal Ice Ecoregion, 80.33% in the Divergent Ice Ecoregion, 35.06% in the Convergent Ice Ecoregion, and 10.56% in the Archipelago Ecoregion. Table 1 (displaying data from ARL 161376-7 (Table 8), 161401. By the end of the century, extinction becomes the most likely outcome for the Convergent Ecoregion, as well as the "dominant" outcome in the Archipelago Region, with extinction risk 88.15%, 83.89%, 77.30% and 41.07% for the Seasonal, Divergent, Convergent and Archipelago Ecoregions, respectively. ARL 161376-7, 161401.

Table 1: Probability of Polar Bear Extinction under Mean Sea Ice Projections. Displaying Data from ARL 161376-7 (Table 8).

Ecoregion	Number of Bears (ARL 117221-2)	Probability of Extinction Year 45	Probability of Extinction Year 100
Seasonal	7,200	77.19%	88.15%
Divergent	9,500	80.33%	83.89%
Convergent	2,200	35.06%	77.30%
Archipelago	5,000	10.56%	41.07%

The modeling confirmed the polar bear's complete reliance on sea ice for survival, and prompted the USGS scientists to ask two additional questions: "First, is [there] anything that humans could do, short of bringing back more ice, that would qualitatively alter our projected outcomes. Second, how much different would sea ice need to be to cause a qualitative change in overall outcomes." ARL 161343.

The USGS's answer to the first question within the Seasonal and Divergent Ice Ecoregions is that the negative impact of sea-ice loss is so overwhelming that even removing all other threats to polar bears cannot significantly decrease their risk of extinction. ARL 161343. In the Convergent Ice Ecoregion, management of other threats could increase the polar bear's chance of survival through mid-century, though by the end of the century extinction once again becomes the dominant outcome regardless of other management actions. ARL 161344. In the Archipelago Region, controlling other threats can improve the polar bear's chance of survival through the end of the century. ARL 161344. The answer to the second question is that future sea ice extent would have to be more extensive than projected by even the most optimistic sea ice models "to see any qualitative change in the probability of extinction in any of the ecoregions, even in year 45." ARL 161345.

The overall conclusion of the USGS research effort is sobering:

> **Projected changes in future sea ice conditions, if realized, will result in loss of approximately 2/3 of the world's current polar bear population by the mid 21st century. Because the observed trajectory of Arctic sea ice decline appears to be underestimated by currently available models, this assessment of future polar bear status may be conservative.**

ARL 147118 (emphasis in original). As dramatic as it is, this conclusion actually tends towards understatement, because, as both the Secretary and USGS acknowledged, the projections likely underestimate the extinction risk to polar bears for two main reasons.

First, the climate model projections on which the USGS projections are based all project a much slower melting trend for sea ice than what has actually been observed. ARL 117278, 147118. There was less ice in the Arctic in 2007 than more than half of the models project for 2050. ARL 117237 (Figure 7). The most hopeful finding was that some polar bears could survive in the Archipelago Ecoregion through the end of the century in reduced numbers. ARL 117278, 161346. However, the USGS noted that such optimism may be unwarranted as "[t]he southern portion of the Archipelago Ecoregion…was clear of sea ice by 23 August 2007 (Figure 15). [This] calls into question a main conclusion of our modeling effort: that polar bears in the Archipelago Ecoregion may be insulated from sea ice change for many decades." ARL 161346.

Second, the USGS projections were based on assumptions about future greenhouse gas emissions that underestimate current trends. Since future emissions levels are not yet known, climate modeling is conducted based on a range of possible future values. Standardized emissions scenarios released by the Intergovernmental Panel on Climate Change (IPCC) in 2000 range from the low end "B1" scenario, in which atmospheric carbon dioxide concentrations reach 549 parts per million ("ppm") by 2100, to the mid range "A1B" scenario, in which they reach 717 ppm by 2100, to the high end "A2" scenario, in which they reach 856 ppm by 2100. ARL 117231. The USGS utilized the "A1B" scenario. ARL 147118, 161357. As it turns out, carbon dioxide emissions have increased far faster than anticipated by the IPCC, and today actual emissions exceed what is projected by even the *highest* IPCC scenario. ARL 105018-9, 160231, 160232 (Figure 1).[3]

[3] Another reason that carbon dioxide concentrations are increasing faster than expected is that the Earth's carbon cycle is now absorbing a smaller percentage of the carbon dioxide released by humans. While this phenomenon has long been understood, it is happening faster than anticipated, consistent with "a carbon cycle that is generating stronger-than-expected and sooner-than-expected climate forcing." ARL 117291-2.

Thus, while the warming the Earth's climate system will experience even if greenhouse emissions dropped to zero is substantial enough to put the polar bear at severe risk, actual warming this century will be much greater. Greenhouse gas emissions grow larger each year, which "underscores the current deficiencies of regulatory mechanisms in addressing root causes of climate change." ARL 117291. As the U.S. Marine Mammal Commission noted in urging an endangered listing for polar bears in the Seasonal and Divergent Ice Ecoregions, bears in these areas "already are in danger of extinction unless the declining trends in sea ice coverage observed in recent years are somehow reversed. There is no present reason to expect such a reversal." ARL 126309-10.

B. The Unsustainable Harvest of Polar Bears

While the impacts of global warming alone are sufficient to cast severe doubt about the future of polar bears, global warming is not the only threat to the species. Among the myriad other threats to the species, such as widespread toxic contamination of the Arctic food web and the risk of oils spills, direct mortality from unsustainable hunting is the most significant. ARL 117278, 161341. Hunting is a severe threat to numerous populations of polar bears, including several of the ones most impacted by global warming.

During the 1950s and 1960s, poorly-managed trophy hunting created a conservation crisis that led to the formation of the Polar Bear Specialist Group (PBSG) and the 1973 International Agreement on the Conservation of Polar Bear. ARL 117281. The International Agreement resulted in hunting restrictions, and many polar bear populations began to recover from severe overharvest levels. *Id.*

Today, however, several factors combine to once again elevate overhunting as an urgent conservation issue. First, as polar bear populations decline due to global warming, the number of

bears that can be "sustainably" killed each year also declines. ARL 117271, 117284. Second, the melting ice is forcing bears to spend more time on land in many areas, where they are more vulnerable to every kind of hunting, whether it be for trophies, subsistence, poaching or in defense of life or property. ARL 117284, 161341. At the same time it has become clear that hunting quotas should be adjusted downward to account for populations stressed and declining due to global warming, some jurisdictions have actually increased their quotas. ARL 117281.

Canada is the only country that continues to allow trophy hunting and commercial trade of polar bears, while Alaska and Greenland authorize subsistence take, and Russia suffers from high levels of polar bear poaching. ARL 117281-2. Currently, about 800 bears are known to be shot each year. ARL 117283 (sum of "actual removal" column). A very large number of additional bears, perhaps as many as 200 or more, are illegally poached in Russia, but not included in this figure. ARL 117283 (actual removal for Chukchi Sea population given as "43 – AK Unk # in Chukotka,"), 117243 (the Chukchi Sea population harvest level is "close to or greater than the unsustainable harvest levels experienced prior to 1972 (when approximately 178 bears were taken per year)"). In Canada, where hunting is well-documented, overharvest is causing several populations to decline, with the PBSG reporting the risk of a serious decline occurring due to overharvest at 99.9% for Baffin Bay, 98.7% for Kane Bain, 64.3% for Norwegian Bay, 90.1% for Western Hudson Bay, and 11.7% for Davis Strait. ARL 53271 (Table 13) (data from "One Year (2003-04)" column).

C. Procedural History

Plaintiffs' petition to list the polar bear under the ESA was submitted to the Secretary on February 16, 2005. ARL 4040-4209. Over the 39 months between the petition submission and the listing of the species in May 2008, the outlook for the polar bear changed dramatically for the

worse. Scientists found that impacts to the polar bear and its sea-ice habitat that had been predicted to occur decades in the future were already happening, and a flood of scientific publications, reports, and observations documented the rapid loss of Arctic sea ice, the starvation and drowning of polar bears, and confirmed that the best-studied populations of polar bears were declining. *See supra* at 6-9. The debate among scientists shifted from whether protection of the polar bear might be premature to whether it was already too late.

Over the course of these three-plus years, scientists within the Department of the Interior did a remarkable job of processing the listing petition, compiling and generating the best available science regarding the polar bear, Arctic sea ice and global warming, and assembling a comprehensive review of the current status and likely future of the species. Their ultimate conclusion was the only one that was scientifically defensible: that the species clearly warranted the protections of the ESA. Nevertheless, as the process played out in a highly-politicized atmosphere, and the critically-imperiled status of the bear became ever-more clear, the important question of what level of protection the species should receive, either overall, or at the population level, was never squarely addressed by Interior's polar bear experts. As such, the ultimate conclusion by the Secretary that the species (either in whole or in part) did not warrant "endangered" listing was ultimately a political, rather than scientific decision, and in the end, a decision that does not withstand scrutiny.

Under the ESA, the Secretary was required to issue an initial finding stating whether Plaintiffs' petition "presents substantial scientific or commercial information indicating that the petitioned action may be warranted," within 90 days. 16 U.S.C § 1533 (b)(3)(A); 50 C.F.R. § 424.14 (b)(1). Nevertheless, the Secretary did not take any action on the petition until Plaintiffs filed an action in District Court in December 2005. *Center for Biological Diversity v.*

Kempthorne, No. 05-5191 JSW (N. Dist. Cal.). On February 9, 2006, the Secretary published a 90-day finding. ARL 5597-8. The parties then settled the case with a consent decree requiring the Secretary to issue the 12-month finding by December 27, 2006. *Center for Biological Diversity*, No. 05-5191 JSW, Dkt. #32.

The status of the polar bear under the ESA was evaluated by a team of U.S. Fish and Wildlife Service Region 7 (Alaska) Marine Mammals Management personnel (the Service "science team").[4] The science team spent the better part of a year assessing the status of the polar bear, and compiled their findings in a document entitled *Range-Wide Status Review of the Polar Bear* (*Ursus maritimus*). ARL 139236. The Status Review formed the basis for the Proposed Rule to list the species range-wide as "threatened" that was released by the Secretary on December 26, 2006, and published in the Federal Register on January 9, 2007. ARL 59985-60021. The Proposed Rule found that, due to projected sea-ice loss, the polar bear was likely to become an endangered species in the foreseeable future, defined by the Secretary as 45 years, and therefore warranted listing as "threatened" under the statute. *Id.*

In February, 2007, the Service and USGS formalized a plan for the USGS to provide additional scientific analysis and advice for the Secretary to use in its final listing determination. ARL 58950. The Service set to work on its own tasks, which included compiling and synthesizing new science relating to the polar bear, and soliciting, reviewing, and responding to public comments, all on a schedule to ensure release of the final decision within the one-year statutory deadline. ARL 58984-58988.

On September 7, 2007, the USGS released the results of its study in a series of nine

[4]The Service's "science team" was comprised of Rosa Meehan, the Division Chief; Scott Schliebe, Polar Bear Program Supervisor; Tom Evans, Polar Bear Biologist; Susann[e] Miller, Polar Bear Biologist; and Karyn Rode, Polar Bear Biologist. ARL 3800.

reports. ARL 82124. As discussed *supra* at 9-12, the results of the USGS reports were incredibly grim, predicting the loss of two-thirds of the world's polar bears by mid-century, and a significant chance of complete global extinction for the species by century's end. ARL 147118.

Following the release of the USGS reports, the Service re-opened the comment period on the Proposed Rule to allow for further public comment on this significant new information. ARL 117239. Among the numerous comments received were those of the U.S. Marine Mammal Commission which urged an endangered listing for bears in the Seasonal and Divergent Ice Ecoregions.[5] ARL 126309.

The USGS's ecoregion approach to forecasting the future status of the polar bear highlighted the importance of looking below the global species level when analyzing global warming's impacts on the bear. In other words, because global warming was affecting different populations of polar bears in different ways and on different time horizons, it would be necessary not only to consider the global polar bear species as a single entity for listing purposes, but also to look at whether any polar bear populations might warrant differential treatment as "endangered" rather than "threatened." In part to deal with this issue, the Service scheduled a workshop to carry out a process know as "Structured Decision Making" (SDM).[6] ARL 111182.

The Service prepared a report setting out the SDM process and the schedule and materials necessary to conduct the process. ARL 111185-111226. An SDM team was appointed and held

[5] To ensure all decisions related to marine mammals are made on the basis of the best scientific information, Congress established the United States Marine Mammal Commission and charged it to make recommendations to federal agencies on matters related to marine mammals. Deviation from the Commission's recommendations must be explained in detail. 16 U.S.C. § 1402(d).

[6] SDM is "an interactive process between scientists and decision makers that is facilitated by independent analysts…Of particular advantage to ESA decision makers is the use of risk assessment methods within the structured decision making framework to derive the likelihood of future extinction events…Structured decision making also provides a transparent record of the decision process because of its thorough and explicit treatment of how and why scientific information and value judgments are used." ARL 111186.

many meetings throughout the summer of 2007. ARL 111178-111183. Service Director Hall "felt strongly that we should do SDM if we're allowed to do it." ARL 111181. One of the explicit goals of the SDM team was "to make a preliminary decision about the status of the appropriate spatial units." ARL 111182. The Service's lead polar bear biologist, Scott Schliebe, emphasized the need to evaluate what constitutes a "significant portion of the range" (SPR) for the polar bear, as this exercise had not yet been undertaken. ARL 82728. Steve Amstrup, the lead author of the USGS Forecasting Report, was scheduled to give a talk relating to the polar bear Ecoregions and distinct population segment (DPS) designation for the polar bear. ARL 82737, 111182.

Some within the agencies, however, became concerned that this process would create "unhelpful facts" in the administrative record. ARL 82762 ("[Teresa Woods] would like to meet with us Tuesday afternoon at 2 to talk about possible pitfalls in creating unhelpful facts in the admin record as part of the structured decision-making process.") Shortly thereafter, the Secretary's office sent word that the SDM meetings were to be cancelled. ARL 82870. Michael Young of the Solicitor's office wrote in an email:

> I have just received word from Bryan Arroyo that, as a result of a meeting with the Secretary this morning, all of the polar bear meetings scheduled for the latter part of this week ("structured decision making") have been canceled...Due to the acknowledged need to build a solid scientific record on the SPR issues—and the clear opportunity to focus on those issues this week—I'm at a loss as to the delay in meeting with the science group.

ARL 82872. The SDM workshop never occurred, and the review of the proper listing status for the polar bear was taken out of the hands of the polar bear science team in Alaska and placed in the hands of the political team in Washington. For this reason, the draft final rule transmitted from the Alaska Office to the Washington Office on December 14, 2007 lacks the section addressing protection for the polar bear in a significant portion of its range or in one or more

distinct population segments that later appears in the Final Rule. ARL 96925, 96927-97159, 97632, 97633-97969, 117297-117301.

At the same time that the final listing rule left the polar bear science team, Service and Interior political appointees decided to issue a 4(d) rule for the polar bear. AR4D2804 (email from Doug Krofta, chief of the Service listing branch, to other Service staff stating "We received direction today from Bryan Arroyo concerning drafting a 4(d) rule for the polar bear. This direction came from a conversation with the Director and Secretary…."). Because the ESA authorizes the issuance of a 4(d) rule only for threatened species, listing the polar bear as "endangered" would have made issuance of the 4(d) rule impossible. 16 U.S.C. § 1533(d).

The Final Rule asserts that the Service "evaluated whether there were any specific areas or populations that may be disproportionately threatened such that they currently meet the definition of an endangered species." ARL 117298. However, the record reflects that any such evaluation was certainly not conducted by Interior's polar bear biologists. The purpose of the SDM workshop was for the agency's scientists and managers to evaluate this issue together, and to ensure a "transparent record of the decision process" with a "thorough and explicit treatment of how and why scientific information and value judgments are used," (ARL 111186), but because the workshop was cancelled, no such record was created.

Instead, an entirely new section entitled "Distinct Population Segment (DPS) and Significant Portion of the Range (SPR) Evaluation" ("DPS/SPR Evaluation"), was inserted into the Final Rule shortly before its publication. There is little paper trail showing the development of this section or any scientific reasoning behind it. Most of the statements in this section appear for the first time in the record at the 11th hour, were never subjected to peer review or public comment, and, as detailed below, are contradicted by other evidence in the record. Indeed, those

few statements in this section that did appear in earlier drafts of the rule and had been peer reviewed were roundly rejected by polar bear experts. For example, the statement: "[m]oreover, there are no morphological, physiological, or behavioral differences across the range of the species that may indicate adaptations to environmental variation, genetically based differences, or unique life-history components in any part of the species' range," appears both in the Final Rule (ARL 117298) and in an earlier draft. ARL 96589. The USGS objected to this sentence:

> p. 159, last ¶ Last sentence. This statement does not seem to us to be true. We do see unique life history components that are related to where a polar bear lives within the overall range. That is, the polar bears in the seasonal ice ecoregion come ashore and fast for 4-8 months while polar bears in the polar basin may be on ice and never come to land – they may den on ice. The age of first breeding is later in the SBS, etc., etc. This statement seems to contradict the ecoregion idea- that there are some major differences in the ice regimes that do influence how polar bears make a living in the different parts of their range. Note that this contradicts how you handled this in Comment 63 and 68 (response to comments on USGS reports) where you acknowledge ecological adaptations of polar bears in different ecoregions.

ARL 96841 (emphasis added), 96589.

Scott Schliebe, the head of the science team, was given a chance to review the draft DPS/SPR Evaluation, and his comments show that he too did not agree with the analysis.

> Not being all that familiar with dps or spr I may be off track but some of the information didn't make sense to me.
> I know that the train has left the station and the doc. has moved forward, but offer these in case they're useful later.
> - It seems like we're very selective in our use of info to evaluate spr/dps….
> - My most significant concern is that this section and how the reference limitations and caveats are used to rule out dps and spr's for an endangered designation will be used to refute the threatened designation when its contested.

ARL 105289.

Schliebe's concerns were never addressed: the draft on which he provided these comments and the final rule are nearly identical but for a few insignificant wording changes. *Compare* ARL 105294-105308 *with* ARL 117297-117301.

After cancellation of the SDM process and the transmission of the draft final rule to Washington, high level political appointees handled the listing decision. The record reflects that the Secretary and others were concerned with political, rather than scientific, factors. Notes from a meeting held April 22, 2008, list such topics as "Lawsuits Climate [change] Not examine Sufficiently" and "Offense vs. Defense" for discussion. ARL 112032. Notes from a May 14, 2008 meeting list topics such as "Courts, 9th Circuit, Future Administrations" as reasons "for or against" the listing decision, and state "Bottom line: with listing, we are in driver's seat to shape policy/legal context." ARL 116781. On May 15, 2008, the Secretary issued a rangewide threatened listing for the polar bear, along with a 4(d) rule that did indeed shape the legal and policy context by purporting to exempt greenhouse gases and other pollution that originates outside the range of the polar bear from the ESA's reach. ARL 117215. Had the polar bear or any polar bear distinct population segment been listed as "endangered," the Secretary could not have issued the 4(d) rule.

IV. ARGUMENT

A species must be listed as "endangered" if it "is in danger of extinction throughout all or a significant portion of its range." 16 U.S.C. § 1532(6) (emphasis added). Despite finding that areas in which polar bears would likely be wholly extinct by mid-century may represent "significant portions" of the species' range, the Secretary nevertheless arbitrarily and unlawfully determined that the species was somehow not "in danger of extinction" in these areas and therefore should not be listed as "endangered." Similarly, despite overwhelming evidence to the contrary in the record, the Secretary arbitrarily and unlawfully concluded that none of the long-recognized populations or population clusters of polar bears was sufficiently "discrete" to warrant recognition as a distinct population segment (DPS) eligible for separate listing as

"endangered." In foregoing listing the polar bear as "endangered," or listing specific DPSs as "endangered" and others as "threatened," and instead listing the species as only "threatened" range-wide, the Secretary violated the ESA's requirement that listing decisions be based "solely on the best scientific and commercial data available." 16 U.S.C. § 1533(b)(1)(A). This decision, unsupported by either the record or the plain language of the ESA, allowed the Secretary to promulgate a 4(d) rule for the species, reducing its protections.[7]

A. The Polar Bear is "In Danger of Extinction Throughout all or a Significant Portion of its Range" and Therefore Must be Listed as Endangered

1. A Species at High Risk of Extinction is "Endangered"

As discussed above, a species is "endangered" if it "is in danger of extinction throughout all or a significant portion of its range." 16 U.S.C. § 1532(6). A species is "threatened" if it "is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." 16 U.S.C. § 1532(20). It is important to recognize that, while the definition of a "threatened" species is necessarily forward-looking (a species is threatened if it is likely to become endangered in the "foreseeable future") so, too, is the definition of an "endangered species." Simply put, a species "in danger" of extinction is not currently extinct. Rather, it is a species facing a risk of extinction in the future.

Moreover, a species that is currently facing a high probability of extinction by definition cannot be merely threatened, because the threatened category is only for species that are not

[7] Plaintiffs have standing to bring this action. Plaintiffs are conservation organizations, each with a mission to protect wildlife populations and preserve their natural habitat. *See* Declarations of Melanie Duchin, Kieran Suckling, and Jenny Ross filed concurrently. Plaintiffs' members visit, observe and enjoy polar bears and their habitat. *Japan Whaling Assn. v. American Cetacean Society*, 478 U.S. 221, 231, n. 4 (1986). Plaintiffs will suffer injuries in fact, those injuries are traceable to Defendants' actions, and they would be redressed by a favorable decision of this Court setting aside Defendants' arbitrary and unlawful actions. *See Friends of the Earth, Inc. v. Laidlaw Envtl. Servs., Inc.*, 528 U.S. 167, 180-84 (2000).

currently in danger of extinction but instead likely to become so in the future. Accordingly, the Secretary may not raise the bar for the threatened category by conflating the two distinct classifications of "threatened," and "endangered." *Western Watersheds Project v. Foss*, 2005 U.S. Dist. LEXIS 45753 at 49 (D. Idaho Aug. 19, 2005) ("By using the standard, 'high risk of extinction' in the 'foreseeable future,' the FWS conflates the terms 'endangered' and 'threatened,' and creates a higher standard for a 'threatened' species than Congress intended….")

In addition, the ESA does not require that a species be in danger of extinction everywhere. Instead, it is enough if a species is in danger of extinction throughout a "significant portion" of its range.[8] Thus, if the best available science showed that polar bears were in danger of becoming extinct in a significant portion of their range, the Secretary was obligated to list the species as an endangered—and not merely a threatened—species.

2. The Best Available Science Demonstrates that Polar Bears will Disappear from More Than Half of Their Range by Mid-Century

The USGS reports released in September 2007 unquestionably constitute the best available science, and the Secretary expressly acknowledged all the reports, including the USGS Forecasting Report in particular, as "the best available scientific information." ARL 117242. The USGS reports were subject to both peer review and public comment, and the Secretary found "no significant scientific disagreement regarding the adequacy or accuracy of the scientific information used in the reports." ARL 117239. The Secretary further found that the IPCC

[8] The requirement that a species be listed based on its status in a "significant portion" of its range reflects a "consistent policy decision by Congress that the United States should not wait until an entire species faces global extinction before affording a domestic population segment of a species protected status." *Defenders of Wildlife v. Norton*, 239 F. Supp. 2d 9, 12 (D.D.C. 2002), citing *Southwest Ctr. for Biological Diversity v. Babbitt*, 926 F. Supp. 920, 924 (D. Ariz. 1996) and H.R. Rep. No. 412, 93d Cong., 1st Sess. 10 (1973), reprinted in 1978 U.S.C.C.A.N. 2989, 2998.

climate modeling on which the USGS reports are based constitutes the "best available scientific information." ARL 117231. The U.S. Marine Mammal Commission stated that "[t]he approach used by the USGS is state-of-the-art scientific and statistical practice for selecting and validating predictive models, and such procedures are commonly used to identify the best scientific information available." ARL 126311. *See also* ARL 124902 (letter from climate scientists explaining that the climate models used by the USGS constitute the best available science).

According to the USGS Forecasting Report, polar bears in the Divergent Ice Ecoregion have an 80% likelihood of extinction by year 45 and bears the Seasonal Ice Ecoregion have a 77% likelihood of extinction by year 45.[9] Table 1, ARL 161376-7. Collectively, these Ecoregions represent more than half of the geographic range of the polar bear and contain more than two-thirds of the world's polar bears, and clearly constitute a "significant portion" of the polar bear's range. A species facing an over 77% chance of extinction throughout a significant portion of its range even within the artificially short 45-year timeframe used by the Secretary as the "foreseeable future" cannot reasonably be considered anything less than currently "in danger of extinction," and as such must be listed as "endangered," not "threatened."

In denying endangered status to the polar bear the Secretary also broke with past practice, ignoring extinction risk thresholds previously used in ESA listing decisions that would, if applied here, have necessitated an endangered listing. For example, the Secretary previously specified that a listed sea duck, the Steller's eider, should be reclassified from "threatened," to "endangered" when the probability of extinction within 100 years exceeds 20%. ARL 158264. Even in the Archipelago Ecoregion, the polar bear faces an over 40% chance of extinction within 100 years, twice the risk which the Secretary finds qualifies the Steller's eider for "endangered"

[9] As discussed supra at 11-12, even this dire projection is likely overly optimistic.

status. The extinction risk is far higher for polar bears in all other Ecoregions. *See* Table 1. As Plaintiffs pointed out during the listing process for the polar bear, the Secretary cannot lawfully deviate so sharply from past practice without explanation. ARL 126168. "An agency acts arbitrarily when it departs from its precedent without giving good reason." *Friends of the Wild Swan v. United States Fish & Wildlife Serv.*, 12 F. Supp. 2d 1121, 1135 (D. Or. 1997) (citing *Northern Cal. Power Agency v. FERC*, 37 F.3d 1517, 1522 (D.C. Cir. 1994).[10]

Despite this evidence, however, the Service determined that the polar bear did not meet the definition of an endangered species. In the DPS/SPR Evaluation that was added to the Final Rule, the Secretary purports to analyze whether the two most imperiled Ecoregions as well as three of the most imperiled populations of the species (the Seasonal Ice and Divergent Ice Ecoregions, and the Western Hudson Bay, Southern Beaufort Sea, and Baffin Bay populations, respectively), should be listed as endangered. While the Secretary acknowledges that all of these groups may be both significant and endangered, the Secretary ultimately concluded that none are actually in danger of extinction.[11] ARL 117299-117300. In each case, the Secretary's conclusion was arbitrary and unlawful because it is contrary to the scientific evidence.

a. The Secretary Arbitrarily Discounted the USGS Studies When Deciding that the Polar Bear was Not in Danger of Extinction Throughout a "Significant Portion" of its Range

While the Secretary and other expert agencies repeatedly acknowledged that the USGS reports constitute the best available science, *see supra* at 23-24, in the DPS/SPR Evaluation, the

[10] Much lower thresholds for an endangered finding have also been recommended by agency scientists. *See, e.g. Center for Biological Diversity v. Lohn*, 296 F. Supp. 2d 1223, 1232 (W.D. Wash. 2003) (an agency-convened group of scientists recommended that a 1% probability of extinction in 100 years could qualify a species as endangered.); *see also* 73 Fed. Reg. 62919, 62923, Endangered Status for the Beluga Whale (October 22, 2008) (26% chance of extinction within 100 years qualifies the beluga whale as "endangered").

[11] The Secretary thus never made a final determination on whether any of the Ecoregions or populations constitute a "significant portion" of the polar bear's range. ARL 117301

Secretary invents a list of reasons to disregard the USGS studies. Reciting uncertainties and limitations associated with the USGS modeling, including the fact that it is a "preliminary effort" that requires "additional development," the Secretary concludes that "[b]ecause of these limitations, we have determined that the BM model outcomes are not a sufficient basis, in light of the other available scientific information, to find that threats to polar bears currently warrant a determination of endangered status for the two ecoregions." ARL 117300.

Under the ESA, the Secretary cannot disregard the USGS modeling because it is not conclusive or perfect. Courts have repeatedly emphasized that the ESA "contains no requirement that the evidence be conclusive in order for a species to be listed. Application of such a stringent standard violates the plain terms of the statute, and therefore justifies reversal of the agency's decision." *Defenders*, 958 F. Supp. at 679. As this Circuit has held, "[e]ven if the available scientific and commercial data were quite inconclusive, [the Secretary] may--indeed must--still rely on it at that stage." *Southwest Ctr. for Biological Diversity v. Babbitt*, 215 F.3d 58, 60 (D.C. Cir. 2000) citing *City of Las Vegas v. Lujan*, 891 F.2d 927, 933 (D.C. Cir. 1989). "The statutory standard, requiring that agency decisions be made on the 'best scientific and commercial data available,' rather than absolute scientific certainty, is in keeping with congressional intent in crafting the ESA. Congress repeatedly explained that it intended to require the FWS to take preventative measures before a species is 'conclusively' headed for extinction." *Defenders*, 958 F. Supp. at 679-680.

Moreover, the USGS reports are anything but inconclusive. They represent the culmination of many decades of research in polar bear ecology as well as climate science. While the USGS itself discusses improvements that can and will be made to its modeling, the results are exceptionally robust. The USGS explained

> We have made every effort to ensure that the model structure was appropriate and credible, and that the inputs were parameterized according to best available knowledge on polar bears and their environment….We are as confident as we can be at this point in model development that the model is performing correctly and providing outcomes that can be useful in qualitatively forecasting the potential future status of polar bears.

ARL 161335.

The Secretary's reliance on uncertainty in model forecasts to reject an endangered designation is not only legal error, but logical and scientific error as well. Uncertainty in modeling means that the risk of extinction for polar bears could actually be somewhat higher or somewhat lower than the modeling point estimates. The Secretary has no basis for concluding that the existence of some remaining uncertainty supports an inference of only a lower risk of extinction for the polar bear than the model results indicate. Such an assumption is an affront to the "institutionalized caution" Congress embodied in the ESA. *Tennessee Valley Auth. v. Hill*, 437 U.S. 153, 194 (U.S. 1978).

The Secretary also discounts the USGS modeling by stating that "in light of the other available scientific information," the polar bear is not endangered. ARL 117300. Yet the Secretary does not, and cannot, point to any such information indicating that polar bears are less imperiled than indicated by the USGS modeling, despite his use of the phrase "in light of the other available scientific information." The USGS reports contain the only such quantitative analysis of future extinction risk for polar bears – there is no countervailing evidence on which to rely. Moreover, the other lines of evidence in the record overwhelmingly support the conclusion that polar bears are in grave peril: they are specialized ice-dependent predators at particular risk from loss of their sea-ice habitat; severe impacts are already apparent in the two most well-studied populations; the ice is melting far faster than forecast by the best available models; and greenhouse emissions are increasing faster than even the most greenhouse gas intensive scenario

used to run those models. Having acknowledged that the polar bear is actually at more risk than the USGS modeling indicates (*e.g.,* 117278, 117280), the Secretary cannot then conclude based on unspecified "other information" that the polar bear is somehow at less risk.

The Secretary also states "it is more appropriate to focus on the general direction and magnitude of the projected outcomes [of the USGS model] rather than the actual numerical probabilities associated with each outcome." ARL 117300. This language, though a quote from the USGS Forecasting Report itself, is highly misleading because the Secretary omitted the rest of the paragraph:

> When predictions result in high probability of one population outcome state and low or zero probabilities of all other states, there is low overall uncertainty of predicted results….Consistency of pattern among scenarios (e.g., different GCM runs [i.e., sea ice projections]) is also important to note. If the most probable outcome has a much higher probability than all of the other states, and if the pattern across time frames and GCM models is consistent, it is most likely important to note that outcome and pattern….

ARL 161339 (emphasis added).

Actually applying these criteria shows that the USGS projections are highly certain for the Seasonal Ice and Divergent Ice Ecoregions. The probability of any outcome other than extinction by mid-century is low: in the Divergent Ice Ecoregion, a 13% chance that polar bears will be "rare," 6% chance of "smaller;" 0.18% chance of "the same," and a 0.00% chance that the population will grow. ARL 161377, *see also* 161376 (similar probabilities for the Seasonal Ice Ecoregion). As the USGS stated, but the Secretary here ignored, "[t]he low probability afforded to outcome states other than extinct suggested a clear trend in these ecoregions toward probable extirpation by mid century." ARL 161332. Moreover, there was consistency across different sea ice projections, providing further confidence in the results. ARL 161376-77, 161313 ("Similarly, model results indicated that sea ice conditions would have to be

substantially better than even the most conservative GCM projections to result in a qualitatively different outcome for any of the ecoregions"), 161343 (explaining there are reasons "in addition to its consistency with the conventional wisdom of the polar bear community, to believe the directions and general magnitudes of the USGS modeling is reasonable."). Correctly assessing the "general direction" of the results only strengthens the conclusion that polar bears in the Seasonal Ice and Divergent Ice Ecoregions are in danger of extinction, and therefore must be listed as "endangered."

The Secretary points next to the "gradual rate of population decline in three populations within the ecoregions." This rationale has two flaws. First, it contradicts the plain language of the statute. If a population is "in danger of extinction," that population is endangered, regardless of whether the population is only undergoing a gradual decline or is even currently stable. Second, it ignores the wealth of evidence in the record projecting precipitous, not gradual, population declines. The Final Rule states elsewhere that "[a]s changes in habitat become more severe and seasonal rates of change more rapid, catastrophic mortality events that have yet to be realized on a large scale are expected to occur." ARL 117279. In a report on the southern Beaufort Sea population (Hunter et al. 2007), the USGS concludes "[t]he interpretation of these results is clear: the SB environment declined in quality (as far as polar bear populations are concerned) over the study period to a point where, if nothing changes, the population will decline rapidly to extinction," and "[o]ur projections of future population dynamics based on sea ice forecasts from 10 GCMs all show polar bear populations crashing within the next century." ARL 82309, 82310 (emphasis added).

Each of the Secretary's reasons for concluding that polar bears are not endangered in the Seasonal and Divergent Ice Ecoregions thus ignores the plain meaning of the definition of an

"endangered species" as well as the best available science, and is contradicted by the evidence in the record, and in most cases, in other portions of the Final Rule itself.

The Secretary is likely to argue that he has great discretion in choosing the numerical extinction risk that separates a "threatened" species from an "endangered" species. But this court need not address precisely where such a dividing line might lie, because the Secretary's assertion that a species that faces an over 77% chance of extinction throughout the majority of its range should be classified as merely "threatened' is absurd on its face. Polar bears in the Seasonal Ice and Divergent Ice Ecoregions, which constitute more than half of the species' range, are overwhelmingly likely to become extinct even within the arbitrarily short 45 year time period considered by the Secretary: "'extinct' was by far the most dominant outcome with very low probabilities forecast for all other outcome states in all time periods." ARL 161332 (emphasis added). The Secretary thus violated the law by concluding under these circumstances that the polar bear is not yet "in danger of extinction… throughout all or a significant portion of its range." The court need not grapple with the question of exactly how close a species must be to the edge of the extinction cliff before it crosses the threshold from "threatened," to "endangered," because in this case it is abundantly clear that at least two-thirds of the world's polar bears have already been pushed over the cliff and are in free-fall. This is not a close case.

b. The Three Polar Bear Populations Assessed by the Secretary are in Danger of Extinction

The Secretary also discussed the status of the Western Hudson Bay, Southern Beaufort Sea, and Baffin Bay populations and concluded that none are in danger of extinction.[12] Again, in each case, the Secretary ignored the best available science and rendered an arbitrary and

[12] The Secretary also never analyzed whether any of the 16 other polar bear populations might also be endangered.

unlawful conclusion.

In dismissing endangered status for the Western Hudson Bay polar bears, the Secretary selectively ignores facts acknowledged elsewhere and asserts that because "reproduction and recruitment[13] are still occurring," the population is not currently in danger of extinction. ARL 117300. The Secretary states, in essence, that because polar bears are still capable of reproducing and raising young, they cannot yet be endangered. This raises the bar for an endangered finding from "in danger of extinction throughout all or a significant portion of its range," to "functionally extinct." A species that can no longer successfully reproduce is functionally extinct because while there are adult members of the species still in existence, without the birth and survival of juveniles, the species will become extinct within a timeframe no longer than the maximum lifespan of currently living members of the species - in the case of polar bears in the wild, within about 20-25 years.

While bears in Western Hudson Bay are still reproducing, they are unlikely to do so for much longer. Researchers believe female polar bears must reach a minimum body weight of 189 kg to successfully reproduce. ARL 117270. The average body mass of females in the Western Hudson Bay population has declined from 290 kg in 1980 to about 230 kg in 2004 and continues to drop. ARL 160281, 117270. Therefore, cub production "will probably be negligible within the next 15-25 years." ARL 117270. The Secretary's assertion that polar bears in Western Hudson Bay are not yet endangered because they can still reproduce today is thus in direct contravention of the plain meaning of the definition of an "endangered species" and of the statutory directive that the Secretary "take preventative measures before a species is 'conclusively' headed for extinction." *Defenders*, 958 F. Supp. at 679-680.

[13] Recruitment refers to the survival of young to adulthood.

The Secretary's conclusions for the Southern Beaufort Sea population are similarly flawed. The Secretary cites to the USGS report by Hunter et al. 2007 and states that it "predicted a gradual population decline of about one percent per year (similar to the rate of decline observed in Western Hudson Bay), and an extinction probability of around 35-40 percent per year at year 45 (see Figure 14 of Hunter et al. 2007).[14] ARL 117300. This statement misrepresents the Hunter et al. 2007 report. The authors found that the Southern Beaufort Sea population would decline at about 1% per year if average sea ice conditions experienced between 1979 and 2006 were maintained. ARL 82310. However, Hunter et al. 2007 did not predict that sea ice conditions would remain the same, but rather used the sea ice projections from leading climate models, all of which project that sea ice conditions will get much worse for polar bears. ARL 82308. They further found that the risk of extinction "exceeds 75% by the end of the century," (ARL 82309) and "[o]ur projections of future population dynamics based on sea ice forecasts from 10 GCMs all show polar bear populations crashing within the next century." ARL 82310 (emphasis added). Scott Schliebe, a polar bear expert who could not fail to miss the distinction, stated politely in reviewing this section "[i]t seems like the evaluation stems from 'current' conditions/status and does not adequately consider foreseeable future…." (ARL 105289), but the political team ignored his concerns and published the Final Rule with the error in place. ARL 117300. The Secretary's conclusions here are also completely at odds with his own Response to Comments on the USGS report. ARL 105003 ("[s]etting the ratio of good to bad years based on current observations [i.e. assuming ice conditions remain the same] would be inconsistent with climatologic research…." and the report is "the best available scientific information"), 105005.

[14] While 1% may sound "gradual," the Southern Beaufort Sea population would decline to between 1.5 bears and 15 bears if a 1% per year rate of decline were sustained through 2100. ARL 82314, 82308-9.

For the Baffin Bay population, the Secretary concludes that "[w]ithout statistically reliable indices of declines in survival, body condition indices, or population size, and with evidence of earlier spring breakup dates but equivocal information on future sea ice conditions, we cannot conclude that the species is currently in danger of extinction in Baffin Bay, but can conclude it is likely to become so in the foreseeable future." ARL 117301. Once again, in direct contravention of the ESA, the Secretary demands perfect and complete data that do not exist prior to granting the polar bear the protection it deserves.

Moreover, the Secretary's claims that the data are equivocal with regards to the Baffin Bay population are simply untrue. The Baffin Bay population is severely overharvested: the risk of serious decline is 99.9% due to hunting levels alone. ARL 53271 (Table 13) (data from "One Year (2003-04)" column). Despite the clear evidence of unsustainable harvest, in December 2004, the government of Nunavut in Canada increased its annual quota from 64 to 105 bears for Baffin Bay. ARL 53215.

The immediate problem of overharvest of these bears is compounded by the threat of melting ice. The Secretary points to the fact that sea ice models do not project significant ice loss in the Baffin Bay region until after 2050 as a reason for denying endangered status, while acknowledging at the same time that "[t]hese results are at apparent odds with observed sea ice trends," which show the ice is actually melting earlier. ARL 117301. Scientists are well aware of the faster-than-forecast sea ice melt, and the USGS examined the phenomenon in one of its 9 reports which form the basis of its conclusions. ARL 161131-161177. This understanding, coupled with the most recent extreme melt years, have led scientists to revise their estimates of when the Arctic will become ice-free, and they are now predicting an ice-free Arctic as soon as 2030. ARL 160219. As one sea ice researcher wrote, "I believe we are poised to rapidly lose all

of our ice." ARL 83931. The faster than forecast melting of the sea ice is a reason to grant polar bears "endangered" status, not to deny it to them.

3. The Secretary Arbitrarily Truncated the "Foreseeable Future" to Minimize the Perceived Risk to the Polar Bear

The Secretary also acted arbitrarily and capriciously by defining the "foreseeable future" as only 45 years from the present, despite the fact that the status of the polar bear at the end of the century is not only entirely foreseeable, but was in fact already forecast by USGS scientists. ARL 117257. The Secretary's attempt to defend his choice of the 45 year time period (ARL 11257-9) does not remedy the fact that the 45 year time period is contrary to the plain language of the term "foreseeable future." *See, e.g.*, *Western Watersheds*, 2005 U.S. Dist. LEXIS 45753 at 41 (citing Merriam-Webster's Dictionary of Law definition of "foreseeable" as "such as reasonably can or should be anticipated: such that a person of ordinary prudence would expect it to occur or exist under the circumstances").[15] Similar to the decision overturned in *Western Watersheds*, here the Secretary, confronted with alarmingly high extinction risk at both the 45-year and 100-year time horizons (see Table 1), chose to simply ignore everything beyond 45 years.

The Secretary attempts to defend his choice by pointing to increasing uncertainty in future temperatures beyond the next 40-50 years. ARL 117257. That temperatures in 2100 are "less certain" than temperatures in 2050 does not make them "unforeseeable." The Secretary acknowledges the fact, discussed *supra* at 6, that we are already committed to a certain amount of future warming due to the lag time in the climate system, even if anthropogenic greenhouse emissions had fallen to zero as of the year 2000. ARL 117257. Thus, because much of the

[15] Similarly, *Black's Law Dictionary* defines "forseeability" as "[t]he quality of being reasonably anticipatable."

warming in the next several decades is already committed, current and future emissions only affect about half the outcome, and future temperatures vary by a relatively small amount. ARL 117257. Beyond 2050, current and future emissions have a much larger impact: greater emissions today bring even greater warming in the future. ARL 117257. The Secretary's logical leap, however, that these truisms mean that temperatures beyond 2050 are unforeseeable, is irrational and incorrect.

The Secretary had the benefit of sophisticated modeling efforts from the IPCC, USGS, and other institutions, all of which provide temperature and sea ice projections through at least 2100. The only IPCC scenario in which future warming is relatively modest is under circumstances where emissions have fallen to zero as of the year 2000 and remain zero. ARL 117233, 151206. This, of course, has not happened. Under all other emissions scenarios, large temperature increases will occur through 2100: the only question is how large. *Id.* Significantly, the USGS provided the probability of extinction for polar bears in the year 2100 based on the A1B "middle of the road" scenario, a scenario already exceeded by actual emissions through 2006. ARL 105018-9, 160231-22. The Secretary's decision to don blinders to all information beyond 2050 under these circumstances violates the plain language of the statute as well as its mandate to protect species proactively.[16]

Finally, the Secretary must consider what is foreseeable in the context of the relevant

[16] Nor is it unusual for the federal government to rely on 100 year projections to make listing decisions. As the Proposed Rule itself notes, the FWS adopted a 100 year definition of "foreseeable future" when analyzing threats to the greater sage grouse. ARL 59992. Similarly, the National Marine Fisheries Service (NMFS) regularly uses 100 year time frames when examining the status of marine mammals under the ESA. Thus, when NMFS reclassified the stellar sea lion into two distinct populations, it employed 100 year models to assess the threats to those populations. *See* 62 Fed. Reg. 24345, 24346, Change in Listing Status of Steller Sea Lions Under the Endangered Species Act (May 5, 1997); *see also* 73 Fed. Reg. 62919, 62923 (26% chance of extinction within 100 years qualifies the beluga whale as "endangered").

ESA listing factors, in this case the "inadequacy of existing regulatory mechanisms." 16 U.S.C. § 1533(1)(D). The Secretary found that "although there are some existing regulatory mechanisms to address anthropogenic causes of climate change, there are no known regulatory mechanisms in place at the national or international level that directly and effectively address the primary threat to polar bears – the rangewide loss of sea ice habitat." ARL 117292. Having concluded that regulatory mechanisms are inadequate to control greenhouse gas emissions, the Secretary must assess the threat to the polar bear based on the assumption that greenhouse gas emissions will continue. The USGS did so, and concluded that polar bears would likely be extinct in most, if not all of their range, within 100 years; the Secretary may not ignore these results by truncating his analysis after 45 years.[17]

While Plaintiffs believe it is clearly arbitrary and illegal for the Secretary to define away as "unforeseeable" the status of polar bears in 2100 as actually foreseen by his own scientists, it is ultimately not necessary for this Court to decide whether the 45 year time period selected as the "foreseeable future" is lawful in order to rule for Plaintiffs, because polar bears are clearly endangered today, regardless of time period considered.

B. The Secretary Erroneously Concluded that the Polar Bear is not Comprised of any Distinct Population Segments

In addition to a "significant portion of its range" analysis, the ESA also requires the Secretary to address whether any "distinct population segment" (DPS) of a species should be listed separately as "endangered." The requirement to consider listing a DPS of a species allows the Secretary, under certain circumstances, to grant a species different status in different portions

[17] Under the Secretary's version of what is "foreseeable," if a person fell out of an airplane at 10,000 feet she would be "endangered," if she fell out at 20,000 feet she would merely be "threatened" as it would take longer for her to hit the ground, while if she fell out at 30,000 feet, the additional length of time it would take for her to hit the ground would mean that her fate was not "foreseeable."

of its range.[18] Under the Secretary's DPS policy, a population segment that is both "discrete" and "significant," must be considered for listing under the Act as a DPS. 61 Fed. Reg. 4722, Policy Regarding the Recognition of Distinct Vertebrate Population Segments Under the Endangered Species Act (Feb. 7, 1996). A population segment is discrete if it satisfies either of the following conditions:

> 1. It is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors.
>
> 2. It is delimited by international governmental boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D) of the Act.

61 Fed. Reg. 4722, 4725.

The Final Rule rejects any DPS designation for the polar bear by stating that "there are no population segments that satisfy the discreteness criterion of the DPS policy."[19] ARL 117298. There are two overarching problems with the Secretary's conclusion: first, it is based on statements completely at odds with the scientific information in the record; and second, the Secretary looked only at individual polar bear populations and never addressed whether any one or more of the four Ecoregion population clusters qualified as a DPS.

1. The Secretary's Rejection of DPS Designation is Contrary to the Evidence in the Record

The core of the Secretary's argument, which consists of only two paragraphs, is that "there are no morphological or physiological differences across the range of the species that may indicate adaptations to environmental variations," and "small genetic differences are not

[18] In the original listing petition Plaintiffs explicitly requested that the Secretary address the separate status of polar bear populations as DPSs. ARL 4049.

[19] Because the Secretary found no population segments that satisfied the discreteness prong, the Secretary did not move on to the significance prong.

sufficient to distinguish population segments under the DPS Policy." ARL 117298. Both of these claims are contradicted by the evidence in the record and completely ignore the significant behavioral differences among polar bears in different populations and Ecoregions.

As discussed *supra* at 19-20, the statement that "there are no morphological or physiological differences across the range of the species that may indicate adaptations to environmental variations," is one of the few statements in the DPS/SPR Evaluation that occurs in an earlier version of the rule subjected to peer review. Polar bear experts rejected it: "[t]his statement does not seem to us to be true….This statement seems to contradict the ecoregion idea-that there are some major differences in the ice regimes that do influence how polar bears make a living in the different parts of their range." ARL 96841, ARL 96589.

The USGS repeated in another memorandum that it had "emphatically" concluded that there are major and significant differences among polar bear populations:

> Also, we believe that the underpinning of the USGS reports is based on the ecoregion structure….An important, and fairly emphatic, conclusion from the body of 2007 USGS work was that the life-history dynamics, demography, and present and future status of polar bears in the 4 ecoregions are different, owing largely to different ice dynamics, its spatiotemporal availability, how it has responded to global warming and how it is predicted to respond in the future. In these Ecoregions, the relationships between polar bears and their sea ice habitat are fundamentally different….

ARL 88920 (emphasis added).

Dr. Steve Amstrup, one of the world's leading polar bear experts, commented

> The ecoregion concept was pivotal to our understanding of how polar bears are likely to respond to habitat changes range-wide. Your current draft, however, gives it short shrift. I suggest that this concept should be explained carefully as part of your introductory material on polar bears, and then this concept should be carried forward through all subsequent discussions….

ARL 89878.

Indeed, the Service's own polar bear experts repeatedly emphasized behavioral and

ecological differences between polar bear populations, stating, for example:

> [w]e do not believe that it is scientifically sound to make a direct comparison of the Southern Hudson Bay (SHB) and Davis Strait populations, which are accustomed to and have behaviorally adjusted to a seasonally ice-free environment, with populations in the Arctic Basin, which are accustomed to live with sea ice more or less year-round, or with populations in the Canadian archipelago, which also have differences in their life history that may be related to sea ice.

ARL 105014. The Secretary's rejection of the evidence in the record and the opinion of his own scientific experts that there are, in fact, significant differences between bears in the various Ecoregions, constitutes a failure to use the best available science as required by the ESA.

In addition, scientists examining whether polar bears in Canada should be managed as "Designatable Units" under Canada's Species at Risk Act (directly analogous to a DPS under the ESA), stated "there is considerable variation in important aspects of the biology and habitat of polar bears in Canada and therefore [we] conclude that a DU approach to their conservation is warranted….the DUs we have proposed represent units that are genetically, geographically, and ecologically separable." ARL 127680 (emphasis added). These experts further concluded "[c]onsidering the vast geographic distribution of the species and the spatially variable ecological impacts of climate change, the continued consideration of polar bears as a single biological unit is untenable." ARL 127683.

Where, as here, the agency fails to follow the advice of its own experts and fails to provide a rational connection between the facts and its conclusions, the decision must be overturned. *Defenders*, 958 F. Supp. at 679.

2. The Secretary Failed to Evaluate Whether Any Polar Bear Ecoregion Should be Designated as a DPS

A second problem with the Secretary's DPS analysis is that the Secretary addressed only whether any single polar bear population should be classified as a DPS, and ignored entirely the

question of whether any of the Ecoregion population clusters should be classified as a DPS. ARL 117298. The Secretary's failure to address this issue is particularly troubling since the Marine Mammal Commission, a body created by Congress for the express purpose of providing expert scientific advice to the Secretary on ESA listing and other matters, urged an endangered DPS listing for the Seasonal Ice and Divergent Ice Ecoregions. ARL 126309-126315. The Marine Mammal Commission stated that these Ecoregions are "already are in danger of extinction unless the declining trends in sea ice coverage observed in recent years are somehow reversed. There is no present reason to expect such a reversal." ARL 126310.

The USGS, though it was charged only with providing scientific analysis and explicitly refrained from providing a listing status recommendation, nonetheless commented that the draft final rule lacked an explanation of why endangered status was rejected.

> We found that the "ecoregion" concept as presented in Amstrup et al. (2007) [USGS Forecasting Report] is treated inconsistently throughout the document. In some places in the Rule…the ecoregional differences are acknowledged and accurately described, but in other places (especially the final finding section), those differences seemed to be brushed over…
> The Draft Final Rule does not clearly articulate the scientific reasoning behind dismissing an "endangered" designation for parts of the range (see p. 317) for example. <u>How did the scientific evidence lead to the status determination of "threatened" vs. "endangered?"</u>

ARL 101097 (emphasis added). The Secretary never provided the missing analysis.

C. The Secretary Ignored and Downplayed other Significant Threats to the Polar Bear

The Secretary acknowledges that "polar bears today experience multiple stressors that were not present during historical warming periods," including "harvest, contaminants, oil and gas development, and additional interactions with humans," and thus "both the cumulative effects of multiple stressors and the rapid rate of climate change today create a unique and unprecedented challenge for present-day polar bears in comparison to historical warming

events." ARL 117260. Nonetheless, the Secretary found that the polar bear is threatened solely by global warming and the melting of its sea ice habitat. ARL 117296-7. In so doing, the Secretary ignored relevant information and misapplied the ESA's five-factor listing analysis.

1. Polar Bears are Endangered by Severe Overhunting in Some Areas

Hunting has long been a significant threat to the polar bear and has once again risen to unsustainable levels. *See supra* at 13-14. Currently, about 800 polar bears are known to be shot each year, ARL 117283 (sum of "actual removal" column), and perhaps as many as 200 or more are illegally poached in Russia but not included in this figure. ARL 117243. The Secretary conducted an analysis looking at the risk of polar bear population decline over the next 10 years from current hunting levels, and found significant risk in eight Canadian populations: 84.4% risk of decline in Norwegian Bay, 80.6% in Lancaster Sound, 12.9% in Gulf of Boothia, 13.1% in Foxe Basin, 99.9% in Western Hudson Bay, 99.9% in Kane Basin, 99.9% in Baffin Bay, and 18.9% in Davis Strait. ARL 117283 (Table 2) (data from "1 yr mean kill" column).

The Secretary subsequently summarizes the status of hunting on several polar bear populations, acknowledging that additional populations are overharvested:

> For one of the populations, Chukchi Sea, severe overharvest is suspected to have occurred during the past 10–15 years, and anecdotal information suggests the population is in decline (Aars et al. 2006, pp. 34–35). The Chukchi Sea, Baffin Bay, Kane Basin, and Western Hudson Bay populations may be overharvested (Aars et al. 2006, pp. 40, 44–46). In other populations, including East Greenland and Davis Strait, substantial harvest occurs annually in the absence of scientifically derived population estimates (Aars et al. 2006, pp. 39, 46).

ARL 117282. Nevertheless, the Secretary then states a conclusion contrary to what this data actually demonstrates: "[w]e find, however, that overutilization does not currently threaten the polar bear throughout all or a significant portion of its range." ARL 117284.

There is evidence in the record that indicates that with regard to hunting, Service

biologists were forced to reason backwards from a predetermined conclusion that overharvest would not be found a threat to the species. Steve Oberholzer, Assistant Special Agent of Law Enforcement for the Service, suggested adding the following sentence to the hunting section: "[c]ontinued over harvest and increased mortality from bear human encounters, however, when coupled with [expected] environmental stresses, *will result in the endangerment of the polar bear throughout a significant portion of its range* in the foreseeable future." ARL 85095 (emphasis added). Scott Schliebe then circled "will result in the endangerment of the polar bear throughout a significant portion" and wrote "can't say this conflicts w/ our finding." ARL 85095.

The record is quite clear that Service biologists felt very strongly that overharvest poses a threat to individual populations. On February 12, 2009, Scott Schliebe suggested edits to a paragraph relating to subsistence harvest prepared by staff in Washington. AR4D 6151. The original paragraph read in part "range-wide, the lawful subsistence harvest of polar bears and the associated creation, sale and shipment of authentic handicrafts and clothing ~~are not threats to the species~~ **do not threaten the species with extinction**." AR4D 6151 (emphasis in original). Schliebe wrote "I believe that harvest is a threat and will continue to play a more instrumental role in exacerbating declines during future years." *Id.* Rosa Meehan, Schliebe's supervisor, then sent the suggested edits to Kurt Johnson and Douglas Krofta in Washington, noting "Kurt and Doug- I know things are moving (have moved) along, however, we remain concerned about how subsistence harvest is portrayed. Here is some language developed by Scott that helps clarify the issue. If we can make these changes, it will be helpful." AR4D 6405. Douglas Krofta responded that "it was determined that the edits were not appropriate at this time." ARL 6404. Scott Schliebe then responded "[t]hat's too bad. As written the sentence is incorrect and intentionally misrepresents the situation." AR4D 6404. Five days later, Krofta responded by defending the

paragraph as written and stating "[a]bsent facts, and not speculation, to the contrary, our impression continues to be that the cooperative management approach has been successful in maintaining a sustainable subsistence hunting program for polar bears in Alaska. To the extent that new facts call for a change in position, we are prepared to consider them with care and to make appropriate changes to the preamble text." AR4D 6403.

Meehan's email in response summarizes the biologists' concerns about hunting:

> [A]s we have been saying emphatically for the last year or so, the population demographics for this specific population have changed and so has our understanding of the potential effects of current harvest levels….Putting out a rule that applies to this population specifically (Southern Beaufort Sea) that basically says that harvest into the future will not be a problem is simply incorrect and creates significant difficulties for us….

AR4D 6402.

Alaska Assistant Regional Director LaVerne Smith then added:

> We are going to have to take a careful but adjusted course as we manage a pop that USGS says will go to zero in 30 years----no way you won't have to adjust subsistence harvest levels as the pop declines….I know the lawyers [disagree] with us but I haven't seen what data or expertise they are basing their wording on..

AR4D 6401.

The unsustainable hunting levels in some areas are particularly disturbing in light of the USGS findings that hunting is the most important variable after sea ice in determining whether polar bears will survive. ARL 161341. The arbitrary conclusion that overhunting does not threaten the polar bear is thus intimately intertwined with the fact that polar bear biologists never evaluated this threat to the polar bear by population or Ecoregion.

2. The Secretary Misapplied the Listing Standard Regarding Overhunting

Having reviewed an enormous amount of information showing polar bear population declines and future threats from global warming, the Secretary then concludes that

"overutilization does not currently threaten the polar bear throughout all or a significant portion of its range." ARL 177284. In order to dismiss this threat, the Secretary illegally relied on uncertain future management actions. Despite the fact that jurisdictions in Canada charged with maintaining sustainable harvest levels have allowed those levels to remain far above sustainable levels for several years, the Secretary assumes that the situation will change for the better. ARL 117284 ("While overharvest is occurring for some populations, laws and regulations for most management programs have been instituted and are flexible enough to allow adjustments in order to ensure that harvests are sustainable.") The Secretary applied the same assumption to other areas, like Russia, that have no management program in place whatsoever to control the enormous poaching problem. *Id.* There is no rationale or evidence to support this assumption. ARL 117281-4. As one peer reviewer of the USGS reports stated, "[w]hat is the basis for stating that there is every reason to believe that hunting will be well managed soon in areas where it currently is not?" ARL 82141. The Secretary has no answer.

Courts have repeatedly struck down the Secretary's dismissal of a current threat based on uncertain future management actions, because such wishful thinking violates the protective listing standard of the ESA. *See Biodiversity Legal Foundation v. Babbitt*, 943 F. Supp. 23, 26 (D.D.C. 1996); *Defenders of Wildlife v. Norton*, 258 F.3d 1136, 1146 (9th Cir. Cal. 2001); *Federation of Fly Fishers v. Daley, 131 F. Supp. 2d 1158, 1165 (N.D. Cal. 2000)*; *Oregon Natural Resources Council v. Daley*, 6 F. Supp. 2d 1139, 1152 (D. Or. 1998). Yet the Secretary repeats his error here.

In addition to wishfully asserting that nonexistent or inadequate management measures to control hunting were "adequate regulatory measures" under the ESA's five-factor listing standard, the Secretary compounded his error by attempting to raise the bar on the five factor

analysis more generally. The Secretary states "that polar bear harvest *by itself*, in the absence of declines due to changes in sea ice habitat, would not be a sufficient threat to justify listing the species in all or a significant portion of its range." ARL 117241 (emphasis added). The Secretary cannot look at this threat in isolation, particularly when he has repeatedly acknowledged, as he must, that loss of sea ice and overharvest affect polar bears in cumulative ways: that is, "harvest is likely exacerbating the effects of habitat loss in several populations. In addition, polar bear mortality from harvest and negative bear-human interactions may in the future approach unsustainable levels for several populations, especially those experiencing nutritional stress or declining population numbers as a consequence of habitat change." ARL 117284. Whether or not overharvest would be enough *by itself*, in the absence of ongoing global warming, to imperil polar bears is simply irrelevant to the question at hand because global warming is happening, and it will impact all polar bear populations. The Secretary was required to analyze whether the significant threat of overharvest, when combined with the threat from global warming, put the polar bear (or any DPS or SPR) in danger of extinction. Absent this analysis, the conclusion that the species does not warrant listing as endangered cannot stand.

V. CONCLUSION

For all of the foregoing reasons the Court should grant Plaintiffs' Motion for Summary Judgment and declare that the Secretary violated the ESA and the APA in failing to list the polar bear as "endangered" in all or parts of its range. The Court should remand the May 15, 2008 Final Listing Rule to the Secretary with instructions to issue a new final listing determination consistent with the ESA. Such new listing determination must be made by a date certain, with the current "threatened" listing for the polar bear remaining in place pending completion of the remand and the issuance of a new final listing rule.

DATE: October 20, 2009

Respectfully Submitted,

By: /s/ Kassia Siegel

Brendan Cummings
Kassia Siegel
Center for Biological Diversity
P.O. Box 549
Joshua Tree, CA 92252
Phone: (760) 366-2232
Facsimile: (760) 366-2669
bcummings@biologicaldiversity.org
ksiegel@biologicaldiversity.org

Benjamin Longstreth (DC Bar # 974015)
Andrew Wetzler
Rebecca Riley
Natural Resources Defense Council
1200 New York Ave., N.W. Suite 400
Washington, D.C. 20005
Telephone: 202-289-6868
Facsimile: 202-289-1060
blongstreth@nrdc.org
awetzler@nrdc.org
rriley@nrdc.org

Attorneys for Plaintiffs Center for Biological Diversity, Natural Resources Defense Council, and Greenpeace, Inc.