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)**
This Document Relates To Listing Rule Cases: *State of Alaska v. Salazar, et al.*, No. 1:08-cv-1352; *Safari Club Int'l, et al. v. Salazar, et al.*, No. 1:08-cv-1550; *California Cattlemen's Ass'n, et al. v. Salazar, et al.*, No. 1:08-cv-1689; *Center for Biological Diversity, et al., v. Salazar, et al.*, No. 1:08-cv-2113; *Conservation Force, et al. v. Salazar, et al.*, No. 1:09-cv-245	**MDL Docket No. 1993**

PLAINTIFF STATE OF ALASKA'S MOTION FOR
SUMMARY JUDGMENT ON LISTING RULE CLAIMS

Pursuant to LCvR 7(h) and the Court's August 21, 2009 order (Doc. #115), Plaintiff State of Alaska ("Alaska") moves for summary judgment on its Listing Rule Claims in No. 1:08-cv-1352.

This motion is supported by Alaska's contemporaneously-filed supplemental memorandum of points and authorities supporting its motion for summary judgment, and by the joint memorandum of points and authorities supporting the motion for summary judgment of Alaska, Safari Club International, et al., Conservation Force, et al., and California Cattlemen's Association, et al. on their Listing Rule Claims.

Pursuant to LCvR 7(f), Alaska requests oral argument on this motion, consistent with the oral argument proposal in the fourth joint status report (Doc. #114 at 4-5).

Consistent with the Court's August 21, 2009 order, Alaska will be submitting to the Court two copies of all filings associated with this summary judgment motion in both CD-ROM and hard copy. Those submissions will be provided within approximately seven to ten days of the filing of this motion.

WHEREFORE, Plaintiff Alaska respectfully requests that summary judgment be entered on its Listing Rule Claims as set forth herein and in the referenced memoranda of points and authorities.

DATED this 20th day of October, 2009.

Respectfully submitted,

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STATE OF ALASKA'S SUPPLEMENTAL MEMORANDUM OF POINTS AND AUTHORITIES SUPPORTING ITS MOTION FOR SUMMARY JUDGMENT AND THE JOINT MOTION FOR SUMMARY JUDGMENT OF ALASKA, SAFARI CLUB INTERNATIONAL, ET AL., CONSERVATION FORCE, ET AL., AND CALIFORNIA CATTLEMEN'S ASSOCIATION, ET AL. ON LISTING RULE CLAIMS

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Pursuant to the Court's August 21, 2009 Order, Plaintiff State of Alaska ("Alaska" or the "State") files this supplemental brief in further support of its own and the joint motion for summary judgment filed by Alaska and others in the Listing Rule cases. (Doc. # 127.)

Introduction

Alaska brought this action challenging the Fish and Wildlife Service's (the "Service") listing of the polar bear as "threatened" throughout its range under the Endangered Species Act ("ESA"), 16 U.S.C. §§ 1531–1544. (*See* 73 Fed. Reg. 28212-303 (May 15, 2008) ("Final Rule", ARL117215-307.) Alaska seeks to set aside the Final Rule based on the Service's failure to follow the procedure required by law and failure to adequately consider the relevant ESA factors.

This supplemental brief addresses Alaska's unique claim that the Service failed to comply with Section 4(i) of the ESA, 16 U.S.C. § 1533(i). That Section requires the Service to specifically consider and directly respond to comments received from a State agency that disagree with all or part of a proposed ESA listing regulation. *Id.* Here, Alaska, through its Department of Fish and Game ("ADFG"), provided specific and substantive comments disagreeing with the proposed polar bear listing in response to both the proposed rule (ARL124734-35, 124961-125006), and to the nine United States Geological Survey ("USGS") reports prepared for the Service following the proposed listing (ARL084242-43; ARL084248-74). Although the Service provided Alaska, some five weeks after the Final Rule, with a letter and enclosures purporting to respond to Alaska's comments (ARL011361-408), for several key items those responses did not provide the statutorily required "written justification" for the Service's "failure to adopt regulations consistent with [the Alaska State] agency's comments," 16 U.S.C. § 1533(i), as follows:

- The Service's "Carrying Capacity" model predicted a 10 to 22 percent global decrease in the total area of polar bear sea-ice habitat by Year 45,

but the Service did not explain why such a habitat reduction would cause the species to be "in danger of extinction;"

- The Service acknowledged the numerous limitations and methodological incompleteness of the Bayesian Network model used to forecast future polar bear population levels, but it failed to adequately explain why it was nonetheless reasonable to rely on the model's predictions to support a "threatened" listing;

- The Service failed to adequately justify its reliance on the outputs of three USGS reports to forecast declining trends in the polar bear population in the Southern Beaufort Sea. The Service acknowledged that there was no current statistically significant decline in that population, but insisted without adequate explanation that a statistically significant decline would occur in the future;

- Alaska disagreed with the Service's biological basis for using a 45-year period to define the "foreseeable future," and the Service's record shows that it used the wrong lifetime reproductive period inputs in calculating the timeframe of three polar bear generations;

- The Service failed to adequately justify its "threatened" determination throughout the polar bear's range based on climate modeling outputs that incorporate significant uncertainty compounded by admitted regional variability in the timing and extent of any effects felt by polar bear populations throughout the species' range.

Because the Service failed to provide an adequate, record-supported written justification pursuant to ESA Section 4(i) on these points, the Final Rule should be vacated and remanded.

Background

I. Factual Background

A. Polar Bear Population

Polar bears (*Ursus maritimus*) are marine mammals found throughout ice-covered seas in the Northern Hemisphere. Polar bears are adapted to living on sea ice, and seasonally may spend significant time on land. (ARL117216.) Polar bears now number 20,000–25,000 worldwide (ARL117219), as compared to 8,000–10,000 in 1965–1970 (ARL062085). The worldwide distribution of polar bears is characterized as a number of different population groupings for

management purposes. The USGS has identified four ecoregion populations, while the International Union for Conservation of Nature and Natural Resources ("IUCN") describes nineteen populations worldwide. (ARL117221.) The Final Rule recognizes the same nineteen populations. (ARL117219.) The Chukchi Sea and Southern Beaufort Sea populations, the two populations associated with Alaska and United States Territory, and shared with Russia (Chukchi Sea) and Canada (Southern Beaufort Sea), total an estimated 3,500 polar bears. (ARL117221.) The current worldwide polar bear population has not significantly grown or declined in recent years. This overall stability is reflected in the recent publications of the IUCN Polar Bear Specialists Group which reports that some subpopulations have declined, others have increased, and some remain stable. (ARL117219-21.)

B. The Polar Bear Listing Determination And Alaska's Comments

In response to a petition from the Center for Biological Diversity, the Service proposed to list the polar bear as "threatened" (*see* 72 Fed. Reg. 1064-1099 (Jan. 9, 2007) ("Proposed Rule," ARL053526-62)), based on the determination that "the polar bear is threatened by habitat loss and inadequate regulatory mechanisms to address sea ice recession." (ARL053558.) On April 9, 2007, Alaska, through ADFG, provided comments in disagreement with the Proposed Rule. (ARL124961-5006.) On September 7, 2007, the USGS published nine reports and made them available for public comment. (ARL082241-82549; ARL161107-161436.) The Service relied on the reports to further support the Service's determination that the species was "likely" to become endangered in the foreseeable future. (*Id.*) On October 22, 2007, Alaska, through the Office of the Governor, provided comments on the USGS reports supplementing the comments originally submitted through ADFG. These supplemental comments elaborated on ADFG's disagreement with the assumptions and stated bases underlying the Proposed Rule. (ARL084242-43; ARL084248-74.) On May 15, 2008, the Secretary published the Final Rule

determining a "threatened" status for the polar bear under the ESA. (ARL117215-307.) Five weeks after the Final Rule, Alaska received, through the Office of the Governor, a letter and enclosures dated June 23, 2008, from then-Service Director Dale Hall, purporting to respond to Alaska's earlier comments. (ARL011361-408.)

Alaska's Interests and Standing

I. Alaska's Interests Affected By The Polar Bear Listing

Alaska has an interest in the management, conservation, and regulation of all wildlife and other natural resources within its jurisdiction, including the polar bear and its habitat. Alaska Const. Art. VIII, §§ 1, 2, 4; Alaska Stat. § 16.05.020. Alaska is the only State whose territory and adjacent waters include the polar bear's range. (*see* ARL117217; ARL117220.) Alaska has in place affirmative conservation measures, including international agreements and cooperation with other government agencies through research, monitoring, and conservation practices, designed to protect and conserve the polar bear and avoid the need for the species to be listed under the ESA. (ARL117242; ARL117286.)

The Final Rule will have a significant adverse impact on Alaska and the welfare of its citizens. Additional regulation of the polar bear and its habitat under the ESA may deter or limit activities such as commercial fisheries, oil and gas exploration, development, transportation, and tourism within and off-shore of Alaska. Many Alaskans rely on these activities for employment, and the State and its municipalities rely on tax and royalty revenues from these activities and related commerce to provide services for their citizens. The listing and resulting regulatory measures also will adversely affect municipal governments (which are political subdivisions of the State under Alaska Stat. §§ 29.04.010, 29.04.020) located on or near coastal areas within the range of the polar bear, by interfering with the municipalities' efforts to provide public services to Alaska residents and affecting their land use planning, platting, and regulatory activities.

Polar bears are also important for subsistence purposes to Alaska Natives; this subsistence harvest is provided for in the ESA and the Marine Mammal Protection Act.

II. Alaska's Standing To Pursue Its Section 4 ESA Claims Is Self-Evident

Where a party's standing is self-evident, it need not submit additional evidentiary submissions to support its standing allegations. In *Fund for Animals, Inc. v. Norton*, 322 F.3d 728, 734 & n.5 (D.C. Cir. 2003), the D.C. Circuit held that the Mongolian government had standing to intervene in a suit challenging the Service's listing of central Asian argali sheep as threatened. Mongolia's standing was "self-evident" because fees paid by sport hunters would cease if the plaintiffs prevailed. *Id.* Like the Mongolian government, Alaska's standing is self-evident given Alaska's interests in the Final Rule, its unique role as a State in the ESA listing process, and the presence of polar bears within the State. Also, in *Maine v. Norton*, 257 F. Supp. 2d 357, 373-75 (D. Me. 2003), the district court held that the State of Maine had standing to challenge the listing of Atlantic Salmon under the ESA. Thus, Alaska has the requisite standing here. (*See also* Joint Brief at 6-7 (Doc. #127) (discussing ESA standing requirements).)

Standard of Review

The standard of review for Alaska's Section 4(i) claim is the same as that in the Joint Brief at pages 7-9. For Section 4(i) claims too, the Administrative Procedure Act ("APA") authorizes a court "to 'hold unlawful and set aside agency action . . . found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law,' 5 U.S.C. § 706(2)(A), or 'without observance of procedure required by law,' *id.* at § 706(2)(D)." *San Luis v. Badgley*, 136 F. Supp. 2d 1136, 1146-47 (E.D. Cal. 2000).

Argument

I. ESA Section 4(i) Requires A Written Justification For The Service's Failure To Adopt A Listing Rule Consistent With Alaska's Comments

Beyond the Service's general obligation under ESA Section 4(b)(4) to respond to comments received on a proposed listing, the Service under Section 4(b)(5)(A)(ii) has a specific obligation to solicit comments from a State, and to respond to adverse State comments under Section 4(i). 16 U.S.C. § 1533(b)(5)(A)(ii); *id*. § 1533(i). Specifically, when "a State agency . . . files comments disagreeing with all or part of the proposed regulation, and the Secretary issues a final regulation which is in conflict with such comments . . . the Secretary shall submit to the State agency a written justification for [the] failure to adopt regulations consistent with the agency's comments." *Id*. § 1533(i). The ESA defines a "State agency" as "any State agency [or] department . . . which is responsible for the management and conservation of fish, plant, or wildlife resources within a State." *Id.* § 1532(18).

Section 4(i)'s legislative history highlights that Congress intended a unique and crucial role for States in the ESA listing process. The Senate Report on S. 2309, 97th Cong. (1982), which was the Senate vehicle for consideration of the ESA Amendments of 1982, stated that:

> [a]s part of the public comment process, the Secretary would be required to provide to the State agency responsible for the conservation of fish or wildlife or plants in each State in which the species is believed to occur actual notice of any proposed regulation concerning the listing of such species. He would also be required to invite the comment of that agency on the proposed regulation. **The involvement and advice of such State agencies in the Federal regulatory process is crucial and must not be ignored**.

S. Rep. No. 97-418, at 12 (1982) (emphasis added). Ultimately the proposed language for current Section 4(i) was adopted in the final version of the House bill, which was approved by

the conference committee and enacted by Congress. *See* H.R. REP. NO. 97-835, at 25 (1982) (Conf. Rep.), *as reprinted in* 1982 U.S.C.C.A.N. 2860, 2866.

Similarly, under the Service's regulation implementing Section 4(i), "the Secretary shall provide such [State] agency with a written justification for the failure to adopt a rule consistent with the agency's comments." 50 C.F.R. § 424.18(c). The preamble to this regulation states that "the Services interpret this provision of the Act to provide that State agencies be **adequately informed** of the basis for any action that is not in agreement with that agency's recommendation." (49 Fed. Reg. 38900, 38906 (Oct. 1, 1984) (emphasis added).)

II. The Service Did Not Comply With ESA Section 4(i) For Alaska's Comments

Alaska's comments disagreed with the Service's proposal to list the polar bear as threatened throughout its range. Despite the Service's mandatory obligations under Section 4(i), Alaska received only a post-decision response from the Service five weeks after the Service's promulgation of the Final Rule. (ARL011361-62.) Thus, the Final Rule was decided and promulgated *before* the Service finalized this response to Alaska's comments. A review of the Service's responses in certain key areas demonstrates the lack of due consideration by the Service and a failure to provide the required adequate written justification.

A. The Service Failed To Adequately Respond To Alaska's Comments On The Carrying Capacity Model

Alaska identified issues and gaps in the Service's analysis and use of the Carrying Capacity model. The Service relied on this model as part of the support for a "threatened" determination, purportedly because the polar bear population would reach a level where it would be "endangered" at Year 45, the year the Service used to define the "foreseeable future." (ARL084265-66.) The Carrying Capacity model predicted a global-wide decline in polar bear sea ice habitats of between 10 and 22 percent by Year 45, and it assumed a 1:1 linear correlation

between habitat loss and potential population decline based on unchanging polar bear densities across available habitat. (ARL117276-77.)

On the density point, the USGS report admitted that "the assumption that polar bear density would not change over time is almost certainly not valid" (ARL082463), but the Service failed to address the implications of this assumption in its response. *See Greater Yellowstone Coal. v. Kempthorne*, 577 F. Supp. 2d 183, 198 (D.D.C. 2008) ("a model must be rejected as arbitrary and capricious 'if there is simply no rational relationship between the model and the known behavior of [the items] to which it is applied'") (quoting *Chem. Mfrs. Ass'n v. EPA*, 28 F.3d 1259, 1265 (D.C. Cir. 1994)).

On the effect of the modeled carrying capacity reduction, the Service failed to explain, or "justify" as Section 4(i) requires, how a 10 to 22 percent reduction in *either* current polar bear habitat area or total worldwide population would lead to an endangered status at Year 45. The Service provided no estimate or reference setting out what the Service considered an adequate polar bear population size—i.e., a minimum viable population that would be self-sustaining in the wild. The Service's failure to consider or justify a minimum viable population level where the polar bear would be threatened or endangered is a fatal flaw in the Service's analysis. *See Am. Wildlands v. Norton*, 193 F. Supp. 2d 244 (D.D.C. 2002). In *American Wildlands*, the Service had identified hybridization as a threat to the westslope cutthroat trout, but did not evaluate that threat in considering whether the trout population was viable. *Id.* at 253. That failure to consider such relevant information rendered the Service's decision arbitrary and capricious. *Id.; see also Defenders of Wildlife v. Norton*, 258 F.3d 1136, 1143 (9th Cir. 2001) ("[I]t simply does not make sense to assume that the loss of a predetermined percentage of habitat or range would necessarily qualify a species for listing."); *Cook Inlet Beluga Whale v.*

Daley, 156 F. Supp. 2d. 16, 20 (D.D.C. 2001) (agency is not required list any species with a declining population, more must be shown in record to require listing).

Moreover, the USGS report acknowledged that the carrying capacity model "is not a demographic model, nor is it an estimation of actual, expected population sizes of polar bears." (ARL082463.) But the Service still used the model results to forecast polar bear population status. (*See* ARL117277 ("Outcomes of . . . carrying capacity change were categorized . . . to describe the status of polar bear populations: enhanced, maintained, decreased, or toward extirpation.").) And contrary to the direction that an ESA listing not be based on "speculation or surmise," *Bldg. Indus. Ass'n of Superior Cal. v. Norton*, 247 F.3d 1241, 1246-47 (D.C. Cir. 2001), some of the model inputs here were specifically based on surmise, violating this standard. (*See* ARL082462, USGS report stating that "we surmised [population] numbers that seemed appropriate based upon the area of habitat;" ARL082474 ("Pooling subpopulations where numbers are merely guesses [as was done here], with those where precise estimates are available . . . prevents meaningful specific calculation.").)

The Service side-stepped these key issues in its responses to Alaska. While the Service discussed the differences between the Carrying Capacity model and the Bayesian Network model, and the input variables and data incorporated into each model (ARL011406), the Service simply never answered Alaska's questions about the Carrying Capacity model's shortcomings. In *San Luis*, regional water authorities challenged the Service's listing of a fish species as "threatened." The Service had failed to submit the required written justification under Section 4(i) and ignored substantive objections to the listing decision made by state agencies. 136 F. Supp. 2d at 1150-51. Therefore, the court held that the listing decision violated the ESA and

Section 4(i). *Id.* at 1151. So too here the Service effectively ignored the specific carrying capacity model points raised by Alaska and violated Section 4(i).

B. The Service Did Not Provide An Adequate Justification Responding To Alaska's Comments On The Bayesian Network Model

Alaska commented that the second polar bear population forecasting model from the USGS, the Bayesian Network model, inappropriately used a single expert's input, contrary to the model's protocol to have input from multiple experts. (ARL084265; ARL117278.) The Bayesian Network model is supposed to use qualitative inputs and expert judgment regarding the relationships between various polar bear population stressors and polar bear demographics to obtain probabilistic estimates of future polar bear distributions and relative numbers. (ARL117277.) The Service admitted that this scientific protocol was not followed, stating that "[t]he current prototype is based on qualitative input from a single expert, and input from additional polar bear experts is needed to advance the model beyond the alpha prototype stage." (ARL011405.) The Service attempted to remedy this limitation by noting that "the BM report was reviewed by four scientists not previously involved with the model development." (*Id*.) But this is non-responsive. Peer review of the report cannot fix the fundamental, original flaw of not having the input of multiple experts on polar bears into the Bayesian Network model itself, rather than in a review of the report on the admittedly non-final product. (USGS BM model report, ARL082478, stating that model "still must be vetted through other polar bear experts".)

The Service admitted to several other flaws in the Bayesian Network model, including that it is a (1) "preliminary effort that requires additional development;" (2) has "uncertainties associated with statistical estimation of various parameters such as the extent of sea ice or size of polar bear population;" and (3) "needs further refinement to develop variance estimates to go with its outcomes." (ARL011405; *see also* ARL117278.) The Service downplayed these

problems by stating that the focus is on the "general direction and magnitude of the probabilities of projected outcomes rather than the actual numerical probabilities associated with each outcome." (Final Rule, ARL117278; Response to Alaska Comments, ARL011405.) It defies logic, however, for the Service to be more confident in the direction and magnitude of projected outcomes when it lacks confidence in the very model and outputs on which the general size and direction of the trends are based. Generalizing from a model that was not properly prepared or finalized according to the model protocols does not eliminate these flaws in the model's application. *See Greater Yellowstone Coal.*, 577 F. Supp. 2d at 198. Thus, the Service failed to provide a meaningful "justification" under Section 4(i).

C. The Service Failed To Adequately Respond To Alaska's Comments On The USGS Reports On Polar Bear Populations In The Southern Beaufort Sea

Alaska commented that certain USGS reports overstated the trend of ice-free days and the related possible adverse impact on the Southern Beaufort Sea ("SBS") polar bear population. First, Alaska identified that the Regehr et al. (2007) report (ARL082241-90) was unable to show a significant relationship between the number of ice-free days and survival rates of adult and subadult males and females from 2001-2006. (ARL084261.) Second, Alaska noted that Rode et al. (2007) (ARL161239-69) also showed a non-significant trend over time in the number of days annually with greater than fifty percent ice cover in the region. (ARL084261-62.) Third, Alaska commented that the stochastic model in Hunter et al. (2007) (ARL082291-341) had limited validity because it relied on the assumptions in Regehr et al. (2007) that polar bear populations would decline in relationship to the number of ice-free days, although trends for neither could be statistically established. (ARL084262.) Fourth, Alaska commented that Hunter et al. (2007) suggested relative polar bear population stability in the SBS area from 1986 to 2006, and that although one-third of that period had "bad" ice years, no decline in the overall polar bear

population was observed. (ARL084263.) Therefore, Alaska commented, the extrapolations of polar bear population survival rates in the SBS area were invalid.

In response, the Service admitted that "the increasing trend in the number of ice-free days was not statistically significant from 1979-2006." (ARL011400; Final Rule, ARL117300.) The Final Rule also acknowledged that Hunter et al. (2007) suffered from the assumptions presented in Regehr et al. (2007) and "was subject to large degrees of sampling and model selection uncertainty, the length of the study period (5 years) was short, and the spatial resolution of the GCMs [general circulation models] at the scale of the southern Beaufort Sea is less reliable than at the scale of the entire range of the polar bear." (ARL117300 (citation omitted).)

Nonetheless, the Service insisted that "a consistent trend for Arctic-wide diminished sea ice exists." (ARL011400; Final Rule, ARL117300.) Moreover, the Final Rule promotes the Hunter and Regehr reports as "build[ing] on previous analyses to provide sufficient evidence to demonstrate that . . . reductions in sea ice occurring now and very likely to continue to occur within the foreseeable future . . . [and] the linkage between reduced sea ice and population reductions has been established." (Final Rule, ARL117253; ARL117257.) The Service attempts to justify relying on Hunter and Regehr to determine the polar bear will "likely" become endangered throughout its range by stating that it had "confidence in the general direction and magnitude of the trend of the model outcomes," although it had little confidence in the "specific percentages associated with each outcome." (Final Rule, ARL117300-01.)

The Service provided Alaska an empty response, short of the statutorily required "written justification." The Service glossed over the Regehr and Hunter reports' suggestions of relative population stability and the uncertainties presented by the models, and instead used the models to predict declining trends in the polar bear population in the SBS and other areas. (Final Rule,

ARL117273.) In short, the Service never explained or supported how the population trend models it used rationally related to the current observations indicating that there is no long-term statistically significant current trend in declining sea ice cover in this area, and no statistically significant current decline in polar bear population numbers. The Service failed to make the required rational connection between the facts found in these reports and the choices made of asserting that these reports forecast declining polar bear population trends in the SBS and elsewhere. *See Carlton v. Babbitt*, 26 F. Supp. 2d 102, 106, 112 (D.D.C. 1998) (finding lack of rational connection in ESA listing reclassification decision). Consequently, the Service failed to satisfy its Section 4(i) obligation to address Alaska's comments and provide meaningful, written justification for the Final Rule. *See San Luis*, 136 F. Supp. 2d at 1150-52.

D. The Service Failed To Provide Alaska With Adequate Justification For The Biological Basis For Selecting 45 Years As The Foreseeable Future

Alaska also disagreed with the Service's use of a 45-year period to represent three generations of polar bears in defining the "foreseeable future." Alaska specifically called for a shorter time period. (ARL125155-56; ARL084248; ARL084254.) The Service established its 45-year time period based on the "foreseeable future" definition it had applied for other species, the IUCN Red List process, and three biological life generations of polar bears. (ARL117258; *see also* ARL054600 (2007 Service Powerpoint explaining biological basis for 45 years).)

The record does not support the Service's choice of 45 years as the appropriate period for three polar bear life generations. (ARL117243-44.) The Service claims to have used the "IUCN Red List process" to determine polar bear generation time, providing that "[a] generation span, as defined by IUCN, is calculated as the age of sexual maturity . . . plus 50 percent of the length of the lifetime reproductive period." (ARL117258; IUCN Red List process, ARL140985.) The Service calculated the age of sexual maturity for the polar bear as 5 years, and the "lifetime

reproductive period" as "20 years." (ARL117258.) But as shown in the Joint Brief, the actual length of one generation for the polar bear using the IUCN methodology adopted by the Service should be approximately 11 years. Thus, three generations would be 33 years, not 45 years. (*See* Joint Brief at 14-16.) The Service thus failed to consider the relevant factors on this point, *see Am. Wildlands*, 193 F. Supp. 2d at 253, and failed to satisfy its obligation under Section 4(i) to provide Alaska a written justification.

E. The Service Failed To Adequately Justify Its Reliance On The Outputs From Climate Change Modeling

As Alaska commented, the climate models relied upon by the Service to list the polar bear are replete with uncertainty, including a high level of regional variability in the predictions generated by these models. (ARL125139-41; ARL084251-58.) Based on the Service's own assessment, the existing level of uncertainty does not allow it to affirmatively determine that a currently healthy species is "likely" (i.e., 67-90% certain, *see* Joint Brief at 9-11) to become extinct in the "foreseeable future." While the Final Rule continues to acknowledge some of this uncertainty (ARL117231-32 ("while most aspects of climate stimulations have some degree of uncertainty, projections of Arctic climate change have relatively higher uncertainty")), the Service does not explain how it nonetheless supported under the ESA statutory standards the determination that the polar bear is "likely" to be in danger of extinction in the foreseeable future.

With regard to regional variability in climate change, for example, the Service seemed to agree with Alaska, stating "there is a considerable natural variability in the sea ice thickness and movement" and that "climate change and its effects on various physical processes (such as ice formation and advection, snowfall, precipitation) vary spatially and temporally." (ARL011369.) But several pages later in its response to Alaska's comments, the Service contradicted itself and

insisted that it does not have enough long-term polar bear population data to determine whether sea ice loss is "affecting or will affect polar bears similarly across the circumpolar region." (ARL011389.) The Final Rule contains similarly inconsistent positions: "Populations in different ecoregions will experience different rates of change and timing of impacts. Within the foreseeable future, however, all ecoregions will be affected." (ARL117279.) The Service acknowledges regional variability, but then treated all regions the same without defining what the threshold of those effects is.

This internal inconsistency and the Service's failure to justify its reliance on the outputs of inherently uncertain climate models to conclude that the polar bear will likely become endangered within the foreseeable future renders the Services decision arbitrary and capricious. *See Greater Yellowstone Coal. v. Servheen*, No. CV 07-134-M-DWM (D. Mont. Sept. 21, 2009), slip op. at 27-30 (inconsistency between cited science and agency's conclusions undermines required rational connection between the facts and agency's conclusion). Thus, the Service failed to fulfill its duty under Section 4(i).

Conclusion

The Service failed to adequately respond under Section 4(i) to these crucial points and advice raised in Alaska's comments. Accordingly, the Final Rule should be vacated and remanded to the Service for further consideration, including adequate consideration of the key comments and involvement of the Alaska Department of Fish and Game, which consideration Congress has said, and sought to insure with Section 4(i)'s requirements, "must not be ignored."

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Respectfully submitted,

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