SYMPOSIUM ARTICLES

ENDANGERED SPECIES ACT LISTINGS AND CLIMATE CHANGE: AVOIDING THE ELEPHANT IN THE ROOM

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The Endangered Species Act (ESA), with its reputation as the nation's strongest environmental law, might be expected to impose some limits on greenhouse gas (GHG) emissions adversely affecting listed species due to rising global temperatures. Although the federal government recently conceded that some species warrant listing because of climate change, the accompanying listing decisions revealed a federal refusal to apply the ESA to constrain GHG emissions. In this Article, we explain those decisions—involving the American pika, the polar bear, the wolverine, and the Gunnison sage-grouse—and their implications. We conclude with some surprising observations about the Obama Administration's apparent endorsement of Justice Scalia's approach to the ESA's habitat protections, the Administration's endorsement of constitutional standing rules to limit the effective scope of the statute, the growing significance of the distinction between endangered and threatened species, and the unintended boomerang effects of the administrative reforms of the statute in the 1990s.

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I. INTRODUCTION

For most of its forty years, the Endangered Species Act (ESA)[1] has developed a widespread reputation for being the most hard-edged of the nation's environmental laws, the alleged "pit bull" of the environment, according to Professor Rohlf.[2] With the recent release of the fifth report of the United Nations' Intergovernmental Panel on Climate Change (IPCC)—a report that for the first time endorsed a carbon-emissions cap and concluded that there was a virtual certainty that the cause of warming global temperatures is anthropogenic[3]—we thought it would be instructive to ask how the nation's leading environmental law is combating the greatest environmental and animal challenge of our time.

The short answer is: not well at all. Listing agencies now seem prepared to acknowledge the existence of climate change-inducing gases and their adverse effects on species' habitat when making listing decisions. However, these agencies have fashioned accompanying rules, primarily through section 4(d) of the statute,[4] that have largely eliminated the ESA's capability to confront the climate change-induced

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[1] 16 U.S.C. §§ 1531–1544 (2012).

[2] Daniel J. Rohlf, *There's Something Fishy Going on Here: A Critique of the National Marine Fisheries Service's Definition of Species under the Endangered Species Act*, 24 Envtl. L. 617, 619 (1994). Professor Rohlf wrote the Introduction for this symposium issue. Daniel J. Rohlf, *The Endangered Species Act at Forty: The Good, the Bad, and the Ugly*, 20 Animal L. 250 (2014).

[3] Intergovernmental Panel on Climate Change, *Climate Change 2013: The Physical Science Basis* 60 (Cambridge U. Press 2013) (available at http://www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf (accessed Apr. 12, 2014)) (concluding that it is "extremely likely [95–100% probability] that human activities caused more than half of the observed increase in global average surface temperature from 1951 to 2010"). The Fifth Assessment Report is being released in four parts between September 2013 and November 2014. This report is made up of the full reports prepared by the Working Groups (I, II, and III) and their summaries for policy makers as well as the Synthesis Report. This citation refers to the final report by the IPCC's Working Group I contribution.

[4] 16 U.S.C. § 1533(d).

causes of the listings. The effect is Sisyphean:[5] the listing agencies can recognize and publicly disclose the peril that climate change is causing to species and their habitat, but they have made themselves powerless to do anything about it.

In this Article, we examine four climate change-imperiled species and the ESA's application thus far. One species was denied listing;[6] one was listed but denied any meaningful ESA protections;[7] and two are proposed as of this writing, one as an "endangered" species,[8] the other as a "threatened" species.[9] The results are hardly positive for the species we consider. The listing agencies seem determined to prevent the ESA from becoming an agent of climate-change mitigation. Perhaps this aversion to taking any meaningful climate-change action will prevent a hostile Congress from amending the ESA.[10] However, these developments are unwelcome news for those concerned about the mounting climate-change crisis,[11] and they are certainly unhappy news for species listed under the ESA due to warming global temperatures.

II. THE AMERICAN PIKA

The American pika is a small mammal, related to rabbits and hares, that inhabits high elevation talus fields in alpine and subalpine areas extending south from Western Canada into the Rocky Mountains and the Sierra Nevada.[12] Like the polar bear, wolverine, and sage-grouse, the pika faces serious threats from climate change.[13]

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[5] According to Greek mythology, Sisyphus was a king punished by the god Zeus for chronic deceitfulness and sentenced to roll a boulder up a hill, watch it roll back, and repeat the action in perpetuity.

[6] *See infra* pt. II (discussing the American pika).

[7] *See infra* pt. III (discussing the polar bear).

[8] *See infra* pt. V (discussing the Gunnison sage-grouse).

[9] *See infra* pt. IV (discussing the North American wolverine).

[10] *See e.g.* Elly Pepper, Nat. Resources Def. Council Staff Blog, *March/April 2013 Legislative Threats to the Endangered Species Act*, http://switchboard.nrdc.org/blogs/epepper/marchapril_2013_legislative_th.html [http://perma.cc/XMT4-435W] (May 2, 2013) (accessed Apr. 12, 2014) (highlighting recent legislative opposition to the ESA).

[11] *See e.g.* Andrew C. Revkin, N.Y. Times, Dot Earth Blog, *Climate Panel's Fifth Report Clarifies Humanity's Choices*, http://dotearth.blogs.nytimes.com/2013/09/27/ipcc-global-warming-report-clarifies-humanitys-choices/ [http://perma.cc/UC4B-Y9BB] (Sept. 27, 2013) (accessed Apr. 12, 2014) (explaining the IPCC's fifth report on global warming science and discussing general climate change concerns).

[12] Ctr. for Biological Diversity, *Petition to List the American Pika (*Ochotona princeps*) As Threatened or Endangered under the United States Endangered Species Act* 2, 7 (October 1, 2007) (available at http://www.biologicaldiversity.org/species/mammals/American_pika/pdfs/American-pika-federal-petition-10-01-2007.pdf [http://perma.cc/6XQD-4PN3] (accessed Apr. 12, 2014)) [hereinafter *Petition to List American Pika*].

[13] 12-month Finding on a Petition to List the American Pika As Threatened or Endangered, 75 Fed. Reg. 6438, 6444 (proposed Feb. 9, 2010).

A. The Pika and Climate Change

A notable characteristic of the American pika is its temperature sensitivity—individuals can die after even brief exposure to temperatures greater than 77.9 degrees Fahrenheit.[14] Because of this temperature sensitivity, the range and suitable habitat of pikas increases with elevation in the southern extent of its geographic range.[15] In Canada, populations reside at sea level, but in the American Southwest, the species rarely lives below 8,202 feet.[16]

The restricted distribution of the American pika is a relatively recent trend.[17] Pika occupied low-elevation areas in the Great Basin between 7,000 and 5,000 years ago, but changing climate trends have led to warmer and dryer conditions, forcing these populations into high-elevation refugia.[18] Climate change and the resulting effects on vegetation shaped this shift in habitat range.[19] Ongoing climate change has the potential to further restrict the range of, and contribute to changes in, pika habitat through increased negative ecological and anthropogenic change.[20] Certain climate variables having "physiological, ecological, and demographic consequences" on American pika include the "number of extremely hot or cold days, average summer temperatures, and duration of snow cover."[21]

B. The Pika Listing Decision

On October 1, 2007, the U.S. Fish & Wildlife Service (FWS or Service) received a petition from environmental groups to list the American pika under the ESA.[22] The environmentalists argued that although the entire species qualified for listing as threatened, five subspecies inhabiting the Great Basin merited listing as endangered due to "their small population size, declining population trend, declining range extent, and the substantial long-term threat that global warming poses to their persistence."[23]

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[14] *Id.* at 6440.
[15] *Id.*
[16] *Id.* at 6440–41.
[17] *Id.* at 6440.
[18] *Id.*
[19] 75 Fed. Reg. at 6440.
[20] *Id.* at 6444.
[21] *Id.* at 6445.
[22] *Petition to List American Pika*, *supra* n. 12, at ii.
[23] *Id.* Under the Endangered Species Act, FWS or the National Marine Fisheries Service may 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). The agencies may list a species as threatened if it is "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." *Id.* at § 1532(20). This distinction is important because, although every protection of the ESA applies to species listed as endangered, FWS has the authority under section 4(d) of the statute to promulgate rules that can reduce protections for threatened species. *See infra* nn. 91–115 and accompanying text (discussing the polar bear's section 4(d) rule) and nn. 162–169 and accompanying text (discussing the proposed section 4(d) rule for the wolverine).

Initially, FWS responded to the petitioners by stating that it could not address the listing petition because other listing actions and court-ordered settlements consumed nearly all the agency's listing funding.[24] This response prompted a suit challenging the agency's failure to list the pika.[25] In 2009, the conservationists and FWS settled the suit, with the Service agreeing to submit a preliminary determination concerning the status of the pika by May 1, 2009 and, if warranted, to make a final listing decision by February 1, 2010.[26]

The agency initially decided that the petition presented substantial information indicating that the pika was threatened because of "[t]he present or threatened destruction, modification, or curtailment of its [habitat or] range," as a result of effects related to climate change.[27] Consequently, FWS issued a notice that the pika may warrant ESA listing, thus beginning an in-depth status review in May 2009.[28]

Recognizing that climate change posed a major threat to the American pika, FWS collaborated with the National Oceanic and Atmospheric Administration (NOAA) in assessing the best available climate science on warming predictions across the pika's range.[29] Using this information, the agency conducted a risk assessment concerning the effects of increasing global surface temperatures on the pika.[30] However, after analyzing the species' biology, population trends, and major threats—including the dangers to pika from climate change—FWS decided in 2010 that the American pika did not warrant listing, either for the species as a whole or the five subspecies for which the environmentalists sought endangered status.[31]

According to FWS, there were a number of ways the American pika could be adversely affected by global warming, which the agency claimed throughout its listing decision were "documented and . . . attributable to anthropogenic climate change."[32] For example, pikas rely on subsurface shelters to escape hot summer daytime temperatures and to obtain insulation during cold winter months. Because American pikas are small and do not hibernate, reduced snowpack due to warming temperatures can mean a lack of insulation from cold winter temperatures.[33] Conversely, the Service thought that "warmer summer temperatures may affect the ability of juvenile pikas to successfully disperse and colonize new areas," resulting in a decline in range for an

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[24] 75 Fed. Reg. at 6438.

[25] *Id.*

[26] *Id.*

[27] 74 Fed. Reg. 21301, 21306 (May 7, 2009).

[28] *Id.*

[29] 75 Fed. Reg. at 6445.

[30] *Id.*

[31] *Id.* at 6438.

[32] *Id.* at 6445.

[33] *Id.* at 6446.

entire pika metapopulation "if [territorial] juveniles are unable to colonize new patches."[34]

Despite these identified climate change threats to the species, FWS decided that it did not anticipate the increased summer temperatures would adversely affect the pika on a range-wide basis.[35] This decision was due, in part, to the fact that the low elevation areas most at risk from climate change did not represent a substantial amount of pika habitat.[36] Since increased summer temperatures from climate change would not have an adverse effect on the majority of pika populations, the agency claimed that the species was not threatened by climate change, and therefore did not warrant ESA listing.[37] Consequently, the pika will face increased global temperatures without ESA protection. As Professor Ruhl memorably predicted, "[t]he pika is toast."[38]

III. THE POLAR BEAR

Polar bears are the largest living bear species, characterized by a large, stocky body and "fur color that varies from white to yellow."[39] Because polar bears evolved in sea ice habitats, they have developed unique physiological and biological adaptations. These adaptations include water-repellant guard hairs and dense underfur, teeth specialized for a carnivorous—rather than omnivorous—diet, and large paddle-like feet with tiny papillae on the underside for increased traction on ice.[40]

Because the polar bear's primary habitat is Arctic sea ice, it is often considered a marine mammal.[41] Polar bears inhabit most of the ice-covered seas in the Northern Hemisphere.[42] Across most of their range, polar bears remain on the sea ice year-round or spend only short periods on land.[43] Although their central range includes deep-water regions, polar bears prefer areas of sea ice located over and near the continental shelf, likely due to higher biological productivity in these areas and increased availability of prey.[44]

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[34] *Id.*

[35] 75 Fed. Reg. at 6446.

[36] *Id.* at 6452.

[37] *Id.* at 6453.

[38] J.B. Ruhl, *Climate Change and the Endangered Species Act: Building Bridges to the No-Analog Future*, 88 B.U. L. Rev. 1, 2 (2008).

[39] Determination of Threatened Status for the Polar Bear (*Ursus maritimus*) throughout Its Range, 73 Fed. Reg. 28212, 28212 (May 15, 2008).

[40] *Id.* Papillae are small, soft bumps used for friction. *Id.*

[41] *Id.* Because they spend the majority of their time on sea ice or in the ocean, polar bears are legally a "marine mammal." *See* 16 U.S.C. § 1362(6) (2006) ("The term 'marine mammal' means any mammal which (A) is morphologically adapted to the marine environment (including sea otters and members of the orders Sirenia, Pinnipedia and Cetacea), or (B) primarily inhabits the marine environment (such as the polar bear) . . . .").

[42] 73 Fed. Reg. at 28212.

[43] *Id.* at 28213.

[44] *Id.*

A. The Polar Bear and Climate Change

Both summer sea ice and sea ice extent are important factors for polar bear survival.[45] Since October 1978, scientific papers and studies have documented an overall downward trend in Arctic sea ice extent, including a roughly 4.5% decrease in summer sea ice extent per decade.[46] According to FWS, both observed and anticipated changes in sea ice cover caused by climate change have and will continue to have profound effects on polar bears.[47] As sea ice becomes more fragmented, it is expected that available food resources will decline,[48] likely leading to reduced residency time and increased energetic costs to polar bears that can reduce body weight and condition, and adversely affect reproduction and survival rates.[49] Reduced sea ice due to climate warming will severely alter the distribution and abundance of ringed seals.[50] Since ringed seals are a crucial food source for polar bears, this prey reduction will decrease polar bear body condition.[51] This reduction will affect the ability of polar bears to successfully breed and will decrease feeding opportunities necessary for the species to recover fat stores lost in the winter, when fat stores are lowest and energetic demands are highest.[52]

B. The Polar Bear Listing Decision

In February 2005, environmental groups petitioned to list the polar bear as threatened under the ESA due to global warming.[53] After receiving no response from FWS, the environmentalists filed a lawsuit seeking to force the agency to make a determination on the listing.[54] In

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[45] *Id.* at 28220. The term "sea extent" defines whether a region is considered ice-covered. Ice concentrations above a certain threshold—usually 15%—qualify as ice-covered. Because satellite sensors can often mistake summer ice surface water for open water, scientists measure both extent and area to avoid underestimating the summer ice concentration. Natl. Snow & Ice Data Ctr., *Frequently Asked Questions on Arctic Sea Ice*, http://nsidc.org/arcticseaicenews/faq/#area_extent [http://perma.cc/U6F2-58E6] (June 2008) (accessed Apr. 13, 2014).

[46] 73 Fed. Reg. at 28220.

[47] *Id.* at 28256.

[48] *Id.* at 28257.

[49] *Id.*

[50] *Id.* at 28266.

[51] *Id.*

[52] 73 Fed. Reg. at 28267.

[53] Ctr. for Biological Diversity, *Petition to List the Polar Bear (*Ursus maritimus*) As a Threatened Species under the Endangered Species Act* ii (Feb. 16, 2005) (available at http://www.biologicaldiversity.org/species/mammals/polar_bear/pdfs/15976_7338.pdf [http://perma.cc/8UYE-8PHB] (accessed Apr. 12, 2014)) [hereinafter *Petition to List Polar Bear*].

[54] *See* U.S. Fish & Wildlife Serv., *Marine Mammals Management: Polar Bear: Endangered Species Act*, http://www.fws.gov/alaska/fisheries/mmm/polarbear/esa.htm [http://perma.cc/ZKS7-R7RH] (accessed Apr. 12, 2014) (noting that the listing petitioners filed suit against the Secretary of Interior and FWS on December 15, 2005 for "failing to make the 90-day finding within the statutory timeframe").

2006, the Service reached another settlement, like it had with the pika, and agreed to issue a proposed ruling on the polar bear listing by the end of the year.[55] Although FWS proceeded to propose the polar bear as a threatened species in December 2006, it missed the statutory deadline for making a final decision.[56] Consequently, in March 2008, conservationists again filed suit.[57] One month later, a federal judge concluded that the Service violated the ESA by delaying its final listing decision on the polar bear and ordered the agency to make a final decision by May 2008.[58]

In response to the court decision, FWS listed the polar bear as a threatened species[59] by the judicially imposed deadline.[60] As conservationists had hoped, the polar bear became a galvanizing symbol of the species-level effects of climate change. If humans did not act quickly to stop the advance of carbon dioxide emissions, polar bears' principal habitat—sea ice—would melt. In listing this "poster-child of the Arctic,"[61] FWS connected the dots between greenhouse gas (GHG) emissions, rising temperatures, melting sea ice, and the survival of a charismatic species for the first time in the agency's long history of ESA implementation.[62]

Under the ESA, the Service may list a species as threatened or endangered on the basis of any of five "listing criteria" included in the Act, using the "best scientific and commercial information available."[63]

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55 72 Fed. Reg. 1064, 1065 (Jan. 9, 2007).

56 *Id.* Under the ESA, "[t]o the maximum extent practicable," the listing agency must make a finding within 90-days of receiving a listing petition as to whether the petition presents "substantial scientific or commercial information indicating that the petitioned action may be warranted." 16 U.S.C. § 1533(b)(3)(A). At this 90-day stage, if the agency finds that a listing may be warranted, it must make a finding within 12 months after receiving the petition that the petitioned action is not warranted, warranted, or warranted but precluded by other pending listings. *Id.* at § 1533(b)(3)(B).

57 *Ctr. for Biological Diversity v. Kempthorne*, 2008 WL 1902703 at *1 (N.D. Cal. Apr. 28, 2008).

58 *Id.* at *4.

59 73 Fed. Reg. at 28212 (codified at 50 C.F.R. § 17.11(h)); *see also supra* n. 23 (discussing the distinction between threatened and endangered species under the ESA).

60 *See* 72 Fed. Reg. at 1065 (presenting the 12-month finding on the polar bear by the December 27, 2006 deadline).

61 Clare Palmer, *Harm to Species? Species, Ethics, and Climate Change: The Case of the Polar Bear*, 23 Notre Dame J.L. Ethics & Pub. Policy 587, 588 (2009).

62 73 Fed. Reg. at 28212, 28225–26.

63 16 U.S.C. § 1533(b)(1)(A). A species may be added to the list when the listing agency determines the species is endangered or threatened because of any of five criteria enumerated in the statute:

> (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.

Id. § 1533(a)(1).

If the agency lists a species as threatened, it must also define the "foreseeable future" within which the threatened species is likely to become endangered.[64]

From the outset in the polar bear listing decision, FWS addressed global climate change and its likely causes. Much of the listing rule's preamble and FWS's responses to public and scientific comment addressed threats to sea ice from climate change, especially the effects of anthropogenically caused GHGs.[65] For example, in response to a public comment claiming that atmospheric carbon dioxide is only an indicator of global warming—not a major contributor—FWS maintained that since the beginning of the industrial era, increasing GHGs in the atmosphere have caused widespread warming of the global climate.[66] This warming, the agency observed, has disproportionately affected large areas of the Arctic, the result being "notable reductions in Arctic sea ice."[67] Citing numerous studies and climate projections that point to GHGs as the cause of or large contributor to the loss of Arctic sea ice,[68] the agency decided that the best available science indicated that anthropogenic GHGs contribute to warming, which in turn contributes to Arctic sea ice loss.[69]

FWS cited the loss of sea ice as the key threat to the species within the foreseeable future, and determined that "the best available evidence [was] that Arctic sea ice w[ould] continue to be affected by climate change."[70] After a lengthy discussion of global climate predictions, the agency explained why it chose to identify forty-five

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64 *See e.g.* Memo. from U.S. Dept. of Int., Off. of the Sol., to Acting Dir., U.S. Fish & Wildlife Serv., *The Meaning of "Foreseeable Future" in Section 3(20) of the Endangered Species Act* (Jan. 16, 2009) (available at http://www.doi.gov/solicitor/opinions/M-37021.pdf [http://perma.cc/5AQD-YNJR] (accessed Apr. 12, 2014)) (providing guidance "as to how the Secretary can best explain how a determination under section 4(a)(1) addresses the concept of the foreseeable future").

65 *See e.g.* 73 Fed. Reg. at 28245 ("The [Intergovernmental Panel on Climate Change] has concluded that (1) most of the observed increase in globally-averaged temperatures since the mid-20th century is *very likely* due to the observed increase in anthropogenic GHG concentrations; and (2) it is *likely* there has been significant anthropogenic warming over the past 50 years averaged over each continent . . . ." (emphasis in original)).

66 *Id.* at 28244 ("Since the start of the industrial era, the effect of increased GHG concentrations in the atmosphere has been widespread warming of the climate, with disproportionate warming in large areas of the Arctic (IPCC 2007, p. 37). A net result of this warming is a loss of sea ice, with notable reductions in Arctic sea ice.").

67 *Id.*

68 *See e.g. id.* at 28227 ("For Arctic sea ice, model simulations unanimously project declines in areal coverage and thickness *due to increased GHG concentrations.*" (citing Eric DeWeaver, *Uncertainty in Climate Model Projections of Arctic Sea Ice Decline: An Evaluation Relevant to Polar Bears* 47 (unpublished U.S. Geological Survey Admin. Rpt., 2007) (available at http://www.usgs.gov/newsroom/special/polar_bears/docs/USGS_PolarBear_DeWeaver_GCM-Uncertainty.pdf [http://perma.cc/MVQ5-WQDY] (accessed Apr. 12, 2014)) (emphasis added)).

69 *Id.* at 28244.

70 *Id.* at 28253.

years as the foreseeable future for the species.[71] This time frame, the Service ascertained, was the period over which the best available scientific data allowed the agency to reliably assess the effects of threats to the polar bear.[72]

After deciding that forty-five years was the proper time frame within which to evaluate threats to the polar bear, FWS evaluated the polar bear petition in light of the ESA's five listing criteria.[73] The agency looked primarily to "the present or threatened destruction, modification, or curtailment of [the polar bear's] habitat or range."[74] This factor—habitat loss—is often crucial in FWS's evaluation of whether to list species.[75] For the polar bear, the Service devoted over twenty pages of the Federal Register to analyzing the threats to the polar bear's habitat, nineteen pages of which concerned the effects of climate change.[76]

FWS determined that polar bears are evolutionarily adapted to life on sea ice.[77] The agency described polar bears as "ice-obligate," due to "their reliance on sea ice as a platform for resting, breeding, and hunting."[78] Discussing the projected effects of sea ice changes on polar bears, the Service recognized that extinction theory suggests that species most vulnerable to habitat loss are those that are "specialized, long-lived with long generation times and low reproductive output, and carnivorous with large geographic extents and low population densities."[79] Polar bears possess most of these vulnerabilities.[80]

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71 73 Fed. Reg. at 28253–54.

72 *Id.*

73 *See supra* n. 63 and accompanying text (listing the five criteria the agency may use in determining endangered or threatened status under the ESA as provided in 16 U.S.C. § 1533(a)(1)).

74 73 Fed. Reg. at 28255–77. So crucial were the effects of climate change on polar bears that, according to FWS, the "key issue in determining what timeframe to use for the foreseeable future" concerned the "uncertainty associated with climate model projections at various points in the future." *Id.* at 28253. The Service maintained that much of the uncertainty beyond 2050 is because "there is less confidence in what changes might take place to affect GHG emissions beyond 40–50 years from now." *Id.* The agency made the direct link between GHG emissions as a primary cause of climate change. Because scientists were uncertain about GHG emissions beyond fifty years in the future, they could not be certain about climate change past this time frame. Therefore, forty-five years became the logical foreseeable future within which to evaluate threats to the polar bear because, based on available evidence, it was foreseeable that the polar bear would become endangered within this time frame. *Id.*

75 *See* David S. Wilcove et al., *Quantifying Threats to Imperiled Species in the United States*, 48 BioScience 607, 609 (1998) (explaining that "habitat destruction and degradation emerged as the most pervasive threat to biodiversity, contributing to the endangerment of 85% of the species" studied).

76 73 Fed. Reg. at 28255–77.

77 *Id.* at 28212.

78 *Id.* at 28255.

79 *Id.* at 28270 (internal citations omitted).

80 *Id.*

Without discussing the causes of climate warming—as it had in the listing rule's preamble,[81] responses to public comments,[82] and determination of foreseeable future[83]—or explicitly linking GHGs to polar bear harm, FWS concluded that polar bears were already being affected by rapidly retreating sea ice, which it projected to worsen in the future.[84] Even more dramatically, the Service concluded not only that receding sea ice will continue to negatively affect polar bear life functions, but that as the rate of habitat loss becomes more severe, mass die-offs and other catastrophic mortality events are likely to occur.[85] After discussing how climate change and disappearing sea ice will cause polar bear habitat loss, the agency stated that "[c]ontinued warming will lead to reduced numbers and reduced distribution of polar bears range-wide,"[86] and that "within the foreseeable future, all polar bear populations will be negatively impacted."[87] However, FWS failed to mention the GHGs that it had earlier determined were the root cause of global warming.[88]

The Service concluded that the best available scientific information warranted a determination that polar bear habitat "is declining throughout the species' range, that this decline is expected to continue for the foreseeable future, and that this loss threatens the species throughout all of its range."[89] Thus, the best available scientific evidence justified the species' listing as threatened under the ESA.[90]

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81 *See e.g. id.* at 28227 ("For Arctic sea ice, model simulations unanimously project declines in areal coverage and thickness *due to increased GHG concentrations*." (emphasis added, internal citation omitted)).

82 *See* 73 Fed. Reg. at 28237–52 (compiling public comments and the agency's responses by key issues).

83 *Id.* at 28253.

84 *Id.* at 28275 ("Polar bears currently are exposed to a rapidly changing sea ice platform, and in many regions of the Arctic already are being affected by these changes. Sea ice changes are projected to continue and positive feedbacks are expected to amplify changes in the arctic which will hasten sea ice retreat.").

85 *Id.* ("As changes in habitat become more severe and seasonal rates of change more rapid, catastrophic mortality events [such as mass seasonal die-offs and lack of breeding] that have yet to be realized on a large scale are expected to occur.").

86 *Id.* at 28276.

87 *Id.* at 28275.

88 *See supra* nn. 81–82 and accompanying text (providing FWS's earlier discussions of GHGs).

89 73 Fed. Reg. at 28212.

90 *Id.* Interestingly, FWS's determination that climate change threatened polar bear habitat was also the reason it initially declined to designate critical habitat for the polar bear. Section 4(a)(3) of the ESA requires that, to the maximum extent practicable, the Service designate critical habitat at the same time the agency makes a listing decision. 16 U.S.C. § 1533(a)(3)(A)(i). However, under the agency's regulations, the Service may decide that critical habitat is not determinable when there is insufficient information to analyze impacts of the critical habitat designation, or "the biological needs of the species are not sufficiently well known to permit identification of an area as critical habitat." 50 C.F.R. § 424.12(a)(2)(i)–(ii) (2013). Reasoning that it lacked the necessary information to carefully assess the designation of critical habitat due to the potential for climactic phenomena to cause rapid changes in the environment, FWS concluded that critical

C. The Polar Bear 4(d) Rule

Concurrently with its polar bear listing, FWS published a 4(d) rule[91] for polar bears. The rule defined prohibitions against take of the threatened polar bear so narrowly that the Service effectively exempted most of the reasons it previously gave for listing the polar bear from any possible regulation under the ESA.[92]

The polar bear 4(d) rule specified the prohibitions necessary to provide for the conservation of the species.[93] FWS defined a proscribed take of the polar bear that was largely coextensive with the prohibitions already imposed by the Marine Mammal Protection Act (MMPA).[94] The MMPA forbids the take—that is, hunting, killing, capturing, or harassing—of polar bears, along with imposing a ban on the import, export, and sale of their parts and products.[95] The 4(d) rule announced that these same activities would also constitute a take of polar bears under the ESA,[96] even though the ESA's prohibitions are much broader than the MMPA.[97]

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habitat was not determinable and required further evaluation "in light of projected climate change and other threats." 73 Fed. Reg. at 28298.

91 73 Fed. Reg. at 76249 (amending 50 C.F.R. § 17.40(q)). Section 4(d) of the ESA authorizes the Secretary of the Interior to authorize takes by regulation of threatened species. *See* 16 U.S.C. § 1533(d) ("Protective Regulations: Whenever any species is listed as a threatened species pursuant to subsection (c) of this section, the Secretary shall issue such regulations as he deems necessary and advisable to provide for the conservation of such species.").

92 Special Rule for the Polar Bear, 73 Fed. Reg. at 28306, 28313–15 (interim final rule); Special Rule for the Polar Bear, 73 Fed. Reg. at 76249, 76251 (final rule amending 50 C.F.R. § 17.40(q)).

93 *See generally* 73 Fed. Reg. at 76249 (adopting, in most instances, the regulatory requirements of the Marine Mammal Protection Act of 1972, as amended, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)).

94 16 U.S.C. § 1362(6), (13); 73 Fed. Reg. at 76251.

95 16 U.S.C. § 1423a(a).

96 Because FWS adopted the MMPA's definition of take in its 4(d) rule for the polar bear, the agency also adopted the MMPA's authorizations and exemptions from this definition, including (1) Alaska Natives may hunt polar bears for subsistence purposes; (2) a polar bear may be legally killed in the defense of life or harassed in the defense of property; and (3) the regulating agency may permit the "incidental take" of the protected species by individuals and commercial or government entities in the course of other activities. 73 Fed. Reg. at 76252, 76257–58. After adopting almost every exemption from take contained in the MMPA, the only new prohibition contained in the 4(d) rule was the Service's determination that sport-hunted polar bear trophies taken in Canada after February 18, 1997 could no longer be legally imported, even with MMPA authorization. *Id.* at 76267.

97 The MMPA defines take to mean "harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill . . . ." 16 U.S.C. § 1362(13). Congress's inclusion of harassment in this definition was groundbreaking in that it broadened the prohibitions against the take of a marine mammal by including any act of pursuit, torment, or annoyance which has the potential to injure or disrupt the normal behavior patterns of a marine mammal. *Id.* at § 1362(18)(A). The ESA's definition of take, however, includes "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in any such conduct." *Id.* at § 1532(19). The ESA's inclusion of the word "harm"

Because FWS decided in the polar bear listing that GHG emissions were a major cause of global warming, and therefore of sea ice decline,[98] the agency could have drawn certain conclusions in fashioning its regulatory responsibilities for the newly listed species. First, the Service could have extended the take prohibitions in section 9 of the ESA to include new and existing sources of GHGs. Second, the agency could have concluded that the government's duty under section 7 to ensure that its actions are not likely to jeopardize a listed species or its habitat meant that all new federal sources of GHGs had to undergo polar bear-specific consultation.[99] However, the polar bear 4(d) rule that FWS did adopt merely included the MMPA's definition of take, and expressly declined to reach activities outside the species' current range, such as GHG-emitting energy projects, under either section 7 or section 9.[100]

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in its take definition is particularly important, because it offers protection for listed species against habitat destruction. *See Babbitt v. Sweet Home Ch. of Communities for a Great Or.*, 515 U.S. 687, 708 (1995), discussed *infra* n. 176 (determining the Secretary reasonably construed Congress's intent by defining "harm" to include "significant habitat modification or degradation"). Although the MMPA includes habitat protection as a purpose, it does not include habitat destruction as a proscribed activity and, unlike the ESA, does not provide for the designation of critical habitat. *See* 16 U.S.C. § 1361(2) ("In particular, efforts should be made to protect essential habitats, including the rookeries, mating grounds, and areas of similar significance for each species of marine mammal from the adverse effect of man's actions[.]"); Endangered and Threatened Wildlife and Plants; Definition of "Harm," 64 Fed. Reg. 60727 (Nov. 8, 1999) ("This final rule defines the term 'harm' to include any act which actually kills or injures fish or wildlife, and emphasizes that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.").

98 73 Fed. Reg. at 28244.

99 According to FWS,

> Section 7(a)(2) directs all Federal agencies to insure that any action they authorize, fund, or carry-out does not jeopardize the continued existence of an endangered or threatened species or designated or proposed critical habitat (collectively, referred to as protected resources). The implementing regulations, [50 C.F.R. § 402], specify how Federal agencies are to fulfill their section 7 consultation requirements. Under the implementing regulations [50 C.F.R. § 402], Federal agencies must review their actions and determine whether the action may affect federally listed and proposed species or proposed or designated critical habitat. To accomplish this, Federal agencies must request from the Service a list of species and critical habitat that may be in the project area . . . . Once a species list is obtained or verified as accurate, Federal agencies need to determine whether their actions may affect any of those species or their critical habitat. If no species or their critical habitat[s] are affected, no further consultation is required. If they may be affected, consultation with the Service is required. This consultation will conclude either informally with written concurrence from the Service or through formal consultation with a biological opinion provided to the Federal agency.

U.S. Fish & Wildlife Serv., *Endangered Species: S7 Consultation Technical Assistance: Step-by-Step Instructions*, http://www.fws.gov/midwest/endangered/section7/s7process/7a2process.html [http://perma.cc/6KWF-7D8Y] (updated Oct. 24, 2012) (accessed Apr. 12, 2014).

100 73 Fed. Reg. at 76251.

Although the final version of the 4(d) rule carefully specified that it did not alter the existing ESA section 7 consultation requirements,[101] FWS nonetheless used the rule to suggest that there was little possibility that an agency would actually be required to consult on an action authorizing GHG emissions if it occurred outside the polar bear's geographic range.[102] The Service's 4(d) rule exemption under section 9 for any taking of polar bears incidental to "an otherwise lawful activity within any area . . . except Alaska," suggests that it did not intend the polar bear listing to affect GHG-emitting activities in the lower forty-eight states, even activities directly resulting in GHGs adversely affecting polar bear habitat.[103] FWS concluded that this exemption applied to the ESA's section 7 consultation requirement as well, and that the potential for a federal project to cause more GHG emissions would not be the sole trigger for section 7 consultation on behalf of polar bears.[104]

FWS justified this exclusion from section 9 and implied exclusion from section 7 on what it saw as the lack of a clear causal connection between activities outside the polar bear's current range and the climate change effects that contributed to the polar bear's habitat loss.[105] In its draft 4(d) rule, the agency stated that GHG effects beyond the scope of a federal agency action or authorization "are only appropriately considered in a section 7 analysis if there is a causal connection between the proposed action and a discernible effect to the species or critical habitat that is reasonably certain to occur."[106] FWS's final 4(d) rule claimed that the agency had been unable to trace a path "between an effect of [a] proposed action and [that effect's] impact to the species."[107] Moreover, the Service asserted that indirect effects must be both "caused by the action under consultation" and be "reasonably certain to occur."[108] Citing a 2001 Ninth Circuit case as support, *Arizona Cattle Growers' Assn. v. U.S. Fish & Wildlife*,[109] the agency claimed

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[101] *See id.* ("[T]he special rule does not remove or alter in any way the consultation requirements under section 7 of the ESA.").

[102] *Id.* at 76266 ("We have specifically considered whether a Federal action that produces GHG emissions is a 'may affect' action that requires section 7 consultation with regard to . . . species [or critical habitat] that may be impacted by climate change. . . . [C]ausation . . . narrows section 7 consultation requirements to listed species [and critical habitat] in the 'action area' rather than to all listed species [or all designated critical habitats].").

[103] 73 Fed. Reg. at 28318.

[104] *Id.* at 28313.

[105] *Id.*

[106] *Id.* at 28312.

[107] 73 Fed. Reg. at 76265.

[108] *Id.*

[109] *Ariz. Cattle Growers' Assn. v. U.S. Fish & Wildlife*, 273 F.3d 1229 (9th Cir. 2001). The Arizona Cattle Growers challenged FWS's issuance of several incidental take statements in connection with federal grazing permits issued by the Bureau of Land Management and the U.S. Forest Service. The Ninth Circuit upheld the district court's conclusion that the statements were arbitrary and capricious, in part because FWS failed to provide evidence that the listed species were in fact present on the land, or that

that section 7 consultations must demonstrate a direct causal connection between the action under consultation and an actual take of a listed species.[110] "Speculation" concerning a take, the agency maintained, "is not a sufficient rational connection to survive judicial review."[111] This interpretation imposed an extremely high standard of proof before activities producing GHG emissions would trigger ESA section 7 consultation on listed GHG-affected species. Therefore, under FWS's policy—as explained in the 4(d) rule—"federal action"[112] projects emitting GHGs would not trigger section 7 consultation on behalf of polar bears unless it were possible to establish that adverse effects on the polar bears were reasonably certain to occur.[113]

FWS explained its narrow interpretation of section 7 consultation requirements in the context of GHG emissions by invoking a "floodgates" rationale: unless there was a demonstrated causal connection between an action under consultation and its effects on listed species, every agency action contributing GHGs to the atmosphere would require consultation for every listed species possibly affected by climate change.[114] Because the "best available scientific data" failed to show a close causal connection between a specific federal action and effects to listed species or habitat due to climate change, FWS maintained that future section 7 consultations on listed species and their critical habitat would be limited to federal proposals in a so-called "action area" immediately around the proposal.[115] This reasoning amounted to an unprecedented use of a 4(d) rule to signal the agency's intent to narrowly interpret its section 7 consultation duties and effectively prevent the polar bear listing from becoming a means to impose federal limits on GHG emissions.

D. Litigation over the Polar Bear Listing and 4(d) Rule

Conservation organizations, industry groups, and state and local governments soon challenged the 2008 polar bear listing and its accompanying 4(d) rule,[116] claiming that FWS misinterpreted the ESA in listing the polar bear as a threatened species.[117] Listing the polar

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the federal grazing permits would result in any actual take of the listed species. Thus, any harm to listed species due to habitat modification caused by grazing was speculative. *Id.* at 1233; 73 Fed. Reg. at 76265–66.

110 73 Fed. Reg. at 76266.

111 *Id.*

112 That is, a federal action outside Alaska, the polar bear's current range.

113 73 Fed. Reg. at 76265.

114 *Id.* at 76266.

115 *Id.* (explaining that this required "causation linkage narrows section 7 consultation requirements to listed species [and critical habitat] in the 'action area' [the area immediately in and around a proposed project] rather than to all listed species [or all designated critical habitats]").

116 *In re Polar Bear Endangered Species Act Listing & § 4(d) Rule Litig.*, 748 F. Supp. 2d 19, 20–21 (D.D.C. 2010).

117 *Id.* at 25.

bear as threatened was especially significant because there are no 4(d) exemptions for endangered species.[118]

Judge Emmett Sullivan of the District Court for the District of Columbia agreed with the environmentalists' contention that the Service misinterpreted the ESA by construing the statute to require an imminent danger of extinction before listing a species as endangered.[119] According to Judge Sullivan, FWS should have treated the term "endangered" as ambiguous, justifying its definition as a permissible construction of the statute supported by evidence and explanation.[120] The court, therefore, remanded the listing rule to the agency to provide an interpretation of "endangered species" consistent with the statute.[121] However, the court kept the 2008 listing rule in force during FWS's reevaluation.[122]

Following the 2010 remand, FWS explained why it concluded that the polar bear did not qualify for endangered status at the time of listing.[123] Although the Service now acknowledged the ambiguity of the term "endangered species" and admitted that threats to a species did not need to place it in imminent danger of extinction, it still concluded that the polar bear did not show the kind of "significant population declines or severe retractions in its range" necessary to demonstrate that it was currently "on the brink" of extinction.[124] Judge Sullivan accepted this explanation as an adequate interpretation of the ESA and upheld the 2008 polar bear listing as a threatened species.[125]

The court also considered the validity of FWS's 4(d) rule.[126] The conservationists claimed that the rule violated the ESA by failing to provide adequate conservation measures for the polar bear, and maintained that the Service could not effectively conserve the polar bear without addressing greenhouse gases in its prohibitions against

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118 16 U.S.C. § 1533(d).

119 *In re Polar Bear*, 748 F. Supp. 2d at 22.

120 *Id.* at 29.

121 *Id.* (concluding that because FWS failed to acknowledge ambiguities in the term "endangered species," the court was not required to defer to the agency's existing interpretation).

122 *Id.* at 30.

123 *See In re Polar Bear Endangered Species Act Listing & § 4(d) Rule Litig.*, 794 F. Supp. 2d. 65, 83–85 (D.D.C. 2011) (detailing FWS's supplemental explanation for its May 15, 2008 determination of threatened status for polar bears).

124 *Id.* at 84–85 ("According to FWS, the administrative record in this case demonstrates that, at the time of listing, the polar bear fit none of the four general categories of endangered species identified by the agency as representative of its past listing decisions. Rather, the evidence before the agency showed that at the time of listing the polar bear was a widespread, circumpolar species that had not been restricted to a critically small range or critically low numbers, nor had it suffered precipitous reductions in numbers or range.").

125 *Id.* at 69.

126 *In re Polar Bear Endangered Species Act Listing & § 4(d) Rule Litig.*, 818 F. Supp. 2d. 214, 218 (D.D.C. 2011).

take.[127] Judge Sullivan rejected this argument, concluding that the plain language of the ESA did not require FWS to demonstrate a conservation-based reason for its decision not to apply general species protection regulations (such as new take prohibitions and consultation requirements).[128] Therefore, the agency's 4(d) exemptions were not arbitrary and capricious.[129]

In the polar bear 4(d) rule, the Service explained that even with the best available science, it was not feasible to identify an individual GHG emission source as the cause of a specific adverse warming effect.[130] The court endorsed the agency's decision declining to extend the ESA's incidental take prohibitions outside the range of the polar bear.[131] It decided that the agency had a rational basis for doing so since there was insufficient evidence to suggest that regulating offsite GHG-producing activities would produce direct conservation benefits to the polar bear.[132] Judge Sullivan agreed that "based on the evidence before [the agency,] Section 4(d) of the ESA is not a useful or appropriate tool to alleviate the particular threat to the polar bear from climate change caused by global greenhouse gas emissions . . . ."[133] This 4(d) rule is still in effect.

E. The Polar Bear's Critical Habitat Designation and Its Challenge

Several months after designating the polar bear as a threatened species and promulgating the 4(d) rule, FWS also issued a critical habitat designation for the species.[134] In light of polar bears' dependence on sea ice habitat located over the continental shelf, FWS determined that sea ice on the shallower waters of the continental shelf "is an essential physical feature for polar bears in the southern Beaufort, Chukchi, and Bearing Seas" by providing "space for individual and population growth and for normal behavior."[135] The Service deter-

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[127] *See id.* (highlighting plaintiffs' contention that FWS "[could not] effectively provide for the conservation of the polar bear without addressing global greenhouse gas emissions, which the agency itself identified as the cause of increasing Arctic temperatures that are expected to lead to a significant decline of the polar bear's sea ice habitat").

[128] *Id.* at 228–29 (noting that "[n]othing in the regulation, or in the ESA itself, requires the agency to demonstrate a conservation basis for *not* applying the general regulation at 50 C.F.R. § 17.31(a)" (emphasis in original)).

[129] *Id.* at 219.

[130] 73 Fed. Reg. at 76266.

[131] *In re Polar Bear*, 818 F. Supp. 2d at 231.

[132] *Id.* at 231–33 ("The Service found no evidence to suggest that extending the ESA incidental take provisions outside the range of the polar bear would produce similar conservation benefits, however. With respect to these indirect impacts, in the event that an incidental take can be identified and attributed to a specific cause originating outside the species' range, the Service found that the incidental take provisions of the MMPA are sufficient to address that violation.").

[133] *Id.* at 219.

[134] Designation of Critical Habitat for the Polar Bear (*Ursus maritimus*) in the United States, 75 Fed. Reg. 76086 (Dec. 7, 2010).

[135] *Id.* at 76112.

mined that potential adverse effects that could harm this critical habitat included "reductions in the extent of Arctic sea ice due to climate change; oil and gas exploration; . . . human disturbance; and commercial shipping."[136]

In January 2013, the U.S. District Court for Alaska set aside FWS's critical habitat designation for the polar bear.[137] Judge Ralph Beistline reasoned that the agency failed to comply with the ESA's definition of critical habitat as "'the specific areas within the geographical area occupied by the species . . . on which are found those physical or biological features' that are 'essential to the conservation of the species and which may require special management considerations or protection.'"[138] The court faulted the Service for designating vast areas of the North Slope and offshore barrier islands as critical habitat without specifying these special physical or biological features[139]—referred to as "primary constituent elements" in the ESA's regulations.[140] Because FWS failed to demonstrate the existence of each particular primary constituent element in all the designated critical habitat areas,[141] Judge Beistline overturned the polar bear's critical habitat designation.[142]

IV. THE NORTH AMERICAN WOLVERINE

The 2008 polar bear rule was the first ESA listing based primarily on climate change-induced threats, but other listing decisions have followed. For example, like the polar bear, the wolverine is a species greatly affected by climate change, particularly the effects of increasing temperatures on its habitat.

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136 *Id.* at 76115.

137 *Alaska Oil & Gas Assn. v. Salazar*, 916 F. Supp. 2d 974, 998 (D. Alaska 2013).

138 *Id.* (quoting 16 U.S.C. § 1532(5)(A)(i)).

139 *Id.* at 999, 1001–03.

140 50 C.F.R. at § 424.12(b)(5) ("When considering the designation of critical habitat, the Secretary shall focus on the principal biological or physical constituent elements within the defined area that are essential to the conservation of the species. Known primary constituent elements shall be listed with the critical habitat description. Primary constituent elements may include, but are not limited to, the following: roost sites, nesting grounds, spawning sites, feeding sites, seasonal wetland or dryland, water quality or quantity, host species or plant pollinator, geological formation, vegetation type, tide, and specific soil types.").

141 FWS concluded that the primary constituent elements for the polar bear in the U.S. were (1) sea ice habitat over waters 300 meters or less in depth that occurs over the continental shelf and is used for feeding, breeding, denning, and movement; (2) terrestrial denning habitat with certain topographic features; and (3) "[b]arrier island habitat used for denning, refuge from human disturbance," and coastal access to maternal dens and optimal feeding habitat, which includes "all barrier islands along the Alaska coast" within the polar bear's range and "the water, ice, and terrestrial habitat within 1.6 [kilometers] of these islands." 75 Fed. Reg. at 76115.

142 *Alaska Oil & Gas Assn.*, 916 F. Supp. 2d at 1004.

A. The Wolverine and Climate Change

Although wolverines do not depend on sea ice like polar bears, they are as dependent on sufficiently cold temperatures for suitable habitat.[143] Year-round, wolverines rely on habitat with "deep persistent spring snow," with this need limiting their habitat to the coldest available landscapes.[144] Within the contiguous U.S., wolverine year-round habitat exists largely at high elevations near the tree line in conifer forests and in rocky alpine areas in the northern Rocky Mountains, with a few scattered populations in the North Cascades, the Sierra Nevada, and the southern Rocky Mountains.[145]

In all wolverine habitat, the species is limited by its need for cold conditions and persistent spring snow, as individuals use only the coldest available landscapes.[146] Snowpack is critical to the species' survival because female wolverines excavate natal dens in snow, and to keep the metapopulation of wolverines in the contiguous U.S. genetically viable, wolverines must travel long distances between subpopulations to breed.[147]

B. The Wolverine Listing Decision

Recognizing wolverine population declines and facing a court-ordered deadline,[148] in February 2013, FWS proposed listing the distinct

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143 Threatened Status for the Distinct Population Segment of the North American Wolverine Occurring in the Contiguous United States, 78 Fed. Reg. 7864, 7867 (Feb. 4, 2013).

144 *Id.* at 7868.

145 *Id.*

146 *Id.*

147 *Id.*

148 *See* 78 Fed. Reg. at 7885 (stating that loss of genetic diversity, working in concert with habitat loss due to climate change, may contribute to the cumulative effect of wolverine population declines). On September 9, 2011, the District Court of the District of Columbia approved two broad settlement agreements between the Center for Biological Diversity, WildEarth Guardians, and FWS. *In re Endangered Species Act Sec. 4 Deadline Litig.*, 277 F.R.D. 1, 9 (D.D.C. 2011). These settlements required the Service to make listing decisions under the ESA on more than 251 species that it had previously found were "warranted but precluded," over the following five years (by 2016). Under the settlements, FWS must review the 251 "candidate species" and either propose listing or make a finding that listing is not warranted. Stip. Settle. Agreement, *In re Endangered Species Act Sec. 4 Deadline Litig.*, http://www.biologicaldiversity.org/programs/biodiversity/species_agreement/pdfs/proposed_settlement_agreement.pdf at 4 [http://perma.cc/78EG-35R2] (D.D.C. July 12, 2011) (Misc. Action No. 10-377 (EGS)) (accessed Apr. 12, 2014) [hereinafter Ctr. for Biological Diversity Settle. Agreement]; Stip. Settle. Agreement, *In re Endangered Species Act Sec. 4 Deadline Litig.*, http://thecre.com/pdf/esamlssettlement.pdf at 6 [http://perma.cc/9DXQ-W9S7] (D.D.C. May 10, 2011) (Misc. Action No. 10-377 (EGS)) (accessed Apr. 12, 2014) [hereinafter WildEarth Guardians Settle. Agreement]; *see also* James Jay Tutchton, *Getting Species on Board the Ark One Lawsuit at a Time: How the Failure to List Deserving Species Has Undercut the Effectiveness of the Endangered Species Act*, 20 Animal L. 401 (2014) (discussing the impacts of the settlement agreements).

population segment[149] of the North American wolverine occurring in the contiguous U.S. as a threatened species under the ESA.[150] Almost five years after its polar bear listing decision, FWS determined that the wolverine, like the polar bear, was likely to face habitat loss due to the effects of increasing temperatures and climate change on high-altitude snowpack, and that climate change represented "present or threatened destruction, modification, or curtailment of [the wolverine's] habitat or range."[151] The Service also concluded this habitat destruction was likely to continue, to the point that the wolverine would be in danger of extinction within the foreseeable future.[152] Analyzing the listing criteria of habitat loss,[153] FWS recognized that wolverines depend on deep snowpack that persists into the late spring for both successful reproduction and dispersal.[154] Just as it had ascertained that disappearing sea ice was a critical threat to polar bear survival and viability,[155] FWS acknowledged that diminished snowpack and the resulting habitat fragmentation was a major contributor to wolverine population decline.[156]

Although the Service concluded that climate change was the major stressor for both the polar bear and the wolverine in its listing rules, FWS distinguished the wolverine listing by noting that "the best scientific and commercial information available indicates that only the pro-

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149 A nonscientific term, "distinct population segment" (DPS) is the smallest division of a species that may be individually protected under the ESA. *See* Policy Regarding the Recognition of Distinct Vertebrate Population Segments under the Endangered Species Act, 61 Fed. Reg. 4722, 4725 (Feb. 7, 1996) ("The authority to list a 'species' as endangered or threatened is thus not restricted to species as recognized in formal taxonomic terms, but extends to subspecies, and for vertebrate taxa, to distinct population segments[.]"). FWS may choose to list a certain geographic population of a species as a DPS if the population is discrete from and significant to the rest of the species to which it belongs. *Id.*

150 78 Fed. Reg. at 7864.

151 *Id.* at 7864–65.

152 *Id.* at 7865 ("In the future, wolverine habitat is likely to be reduced to the point that the wolverine in the contiguous United States is in danger of extinction.").

153 *See* 16 U.S.C. § 1533(a)(1)(A) (providing that the Secretary may find a species to be threatened or endangered due to "present or threatened destruction, modification, or curtailment of its habitat or range").

154 78 Fed. Reg. at 7874–75.

155 *See* 73 Fed. Reg. at 28255 (explaining that polar bears rely on sea ice for resting, breeding and hunting).

156 78 Fed. Reg. at 7885–86. Referring to many of the same reasons cited when concluding that designation of polar bear critical habitat was impracticable (e.g., because FWS needed more time to assess the habitats qualifying as "critical" in light of climate change projections), the Service proposed to delay designation of critical wolverine habitat until a later date. *Id.* at 7889 ("We need additional time to assess the potential impact of a critical habitat designation, including whether there will be any benefit to wolverine from such a designation. A careful assessment of the habitats that may qualify for designation as critical habitat will require a thorough assessment in light of projected climate change and other threats. At this time, we also need more time to analyze the comprehensive data to identify specific areas appropriate for critical habitat designation. Accordingly, we find designation of critical habitat to be 'not determinable' at this time.").

jected decrease and fragmentation of wolverine habitat or range due to future climate change [which will cause decreased snowpack] is a threat to the species now and in the future."[157] The Service determined that the wolverine *only* faces present or threatened destruction, modification, or curtailment of its habitat or range from climate change.[158] The polar bear, on the other hand, faces threats from other habitat stressors such as oil and gas drilling, overharvest, and human encroachment, although climate change is the biggest contributor to the species' habitat decline and subsequent ESA designation.[159] FWS's conclusion that wolverines were threatened only by the loss of snow due to climate change and rising temperatures represented an unprecedented step by the federal government.[160] Although conservation advocates sought listing for several temperature-sensitive species on the basis of climate change threats to habitat, the Service had never before confirmed that any species was warranted for listing solely on the basis of climate-caused habitat loss.[161]

C. The Wolverine 4(d) Rule

FWS's proposed wolverine listing also included a proposed 4(d) rule.[162] Although this proposed rule mentioned nothing about GHG emissions, it included exemptions from take that would otherwise be statutorily proscribed. The proposed rule would prohibit take of any wolverine from "any activity where wolverines are attempted to be, or

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157 78 Fed. Reg. at 7880.

158 *Id.*

159 *See* 73 Fed. Reg. at 28265 (discussing the impacts of oil and gas exploration, development and production); *id.* at 28277 (discussing the harvest of polar bears); *id.* at 28276–77 (discussing human activities such as increased residence in the area, hunting, shipping, and direct bear–human interactions); *id.* at 28270 (stating that because of their specialized habitats, polar bears are particularly "susceptible to the potential negative impacts of sea ice loss resulting from climate change").

160 The proposed wolverine listing is not without strong opposition, both from private landowners and state wildlife and game regulators. States asked for a third extension to the proposed wolverine rule's comment period. Among these agencies' concerns are the value of wolverines for their fur, and the belief that climate change alone is not enough to justify listing the species. *See* Scott Bickard, U. Herald, *Wolverine's Status Change to Threatened Species Thwarted by Western United States Wildlife Agencies Interested in Fur*, http://www.universityherald.com/articles/5974/20131203/wolverines-status-to-threatened-species-thwarted-by-western-united-state-wildlife-agencies-interested-in-their-fur.htm [http://perma.cc/CV7H-VXYQ] (Dec. 3, 2013) (accessed Apr. 12, 2014) (quoting a Utah wildlife manager as saying that "[c]limate change models are not a reason to list species under the Endangered Species Act"). As of February 5, 2014, FWS reopened the comment period "based on substantial disagreement regarding the sufficiency or accuracy of the available data relevant to the proposed listing." 6-Month Extension of Final Determination for the Proposed Listing of the Distinct Population Segment of the North American Wolverine Occurring in the Contiguous United States As a Threatened Species, 79 Fed. Reg. 6874, 6874 (Feb. 5, 2014).

161 The closest FWS came to listing a species only on the basis of climate change threats was its consideration of the American pika for listing. *See supra* pt. II(B) (concerning the pika listing petition and decision).

162 78 Fed. Reg. at 7888.

are intended to be trapped, hunted, shot, captured, or collected," and also would prohibit the incidental trapping, hunting, shooting, capturing, pursuit, or collection of "wolverines in the course of otherwise legal activities."[163] However, the proposal would have exempted "all otherwise legal activities involving wolverines and their habitat that are conducted in accordance with applicable State, Federal, tribal, and local laws and regulations" from consideration as a take under the ESA.[164] FWS justified this exemption, which would amount to the agency protecting the wolverine only against direct intentional harm, reasoning that risk factors such as "dispersed recreation, land management activities by Federal agencies and private landowners, and infrastructure development" occurred at a relatively small scale compared to the average size of the wolverine's home range.[165]

The Service concluded that the proposed 4(d) rule could exempt these activities from the ESA's take prohibitions because the evidence did not suggest that these incidental activities were a threat to the wolverine or would become so in the foreseeable future.[166] The proposed rule mirrored the Service's conclusions in the proposed listing that climate change, not other habitat disruptors, was the primary threat to the wolverine's survival and recovery.[167]

Thus, both the polar bear and the proposed wolverine 4(d) rules would have remarkably similar effects. While each rule adopted minimal new protections against direct intentional harm to the species, each has no real effect on the activities that are causing climate change, the acknowledged primary factor contributing to both species' decline. Although the proposed wolverine 4(d) rule did not exactly parallel the polar bear 4(d) rule,[168] FWS again refused to use the ESA to regulate GHG emissions to confront climate-induced threats to wolverines. The Service stated that if it determined that the wolverine warranted listing, it would not regulate GHG emissions to preserve wolverine habitat.[169]

Since the polar bear 4(d) rule survived court challenges,[170] it is perhaps not surprising that FWS dismissed the prospect of GHG regulation resulting from the proposed wolverine listing. Because listing the wolverine as threatened—coupled with the 4(d) rule—would not regulate GHGs, the Service acknowledged that the rule "[would] not have a direct impact on the loss of deep, persistent, late spring

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163 *Id.*

164 *Id.*

165 *Id.*

166 *Id.*

167 *Id.* at 7886.

168 In the wolverine 4(d) rule, FWS did not specifically address the regulation of GHGs through sections 7 or 9 of the ESA, as it did in the polar bear listing. *See supra* pt. III(C) (discussing how the polar bear's 4(d) rule addressed the regulation of GHGs).

169 78 Fed. Reg. at 7887 (explaining that "[a] determination to list the contiguous United States [distinct population segment] of the North American wolverine as a threatened species under the Act . . . will not regulate greenhouse gas emissions").

170 *See supra* pt. III(D) (discussing court challenges to the polar bear 4(d) rule).

snowpack or the reduction of greenhouse gases."[171] FWS essentially admitted that listing the wolverine under the ESA would not affect what the agency recognized as the only major factor threatening wolverine survival in the foreseeable future—loss of critical snowpack due to climate change.[172] Although the Service proposed the listing of both the polar bear and the wolverine based on threats from climate change, it simultaneously denied both species any meaningful regulatory protections. In both listing rules, FWS recognized that climate change was the biggest threat to the species but refused to take any regulatory action to prevent it.

These two listing rules produced a series of proscriptions and exemptions that, ironically, align precisely with Justice Scalia's dissenting opinion in *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*.[173] Although the *Sweet Home* majority upheld FWS's definition of "harm" as including habitat modification,[174] the Scalia dissent would have limited takes to those resulting from direct intentional actions.[175] The polar bear and the proposed wolverine 4(d) rules echo the *Sweet Home* dissent by excluding climate change-based harm from each rule's list of proscriptions, and prohibiting only actions which directly and intentionally take each species. By regulating only wolverine and polar bear hunting, trapping, collection, and trade, but not the activities that cause climate change, the Service effectively ignored "significant habitat modification or degradation" contained in the ESA regulations,[176] choosing instead to focus only on "affirmative conduct intentionally directed against a particular animal or ani-

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171 78 Fed. Reg. at 7887.

172 *Id.* ("While we acknowledge that listing will not have a direct impact on the loss of deep, persistent, late spring snowpack or the reduction of greenhouse gases, we expect that it will indirectly enhance national and international cooperation and coordination of conservation efforts, enhance research programs, and encourage the development of mitigation measures that could help slow habitat loss and population declines.").

173 *Sweet Home*, 515 U.S. at 718 (Scalia, J., dissenting) ("It is obvious that 'take' in this sense—a term of art deeply embedded in the statutory and common law concerning wildlife—describes a class of acts (not omissions) done directly and intentionally (not indirectly and by accident) to particular animals (not populations of animals).").

174 The ESA forbids any person from taking a listed species, 16 U.S.C. § 1538(a)(1)(B), which the statute defines as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." 16 U.S.C. § 1532(19). The agency regulations before the Court in *Sweet Home* further defined harm to include "significant habitat modification or degradation where it actually kills or injures wildlife." 50 C.F.R. at § 17.3.

175 *See Sweet Home*, 515 U.S. at 720 (Scalia, J., dissenting) ("What the nine other words in § 1532(19) have in common—and share with the narrower meaning of 'harm' described above, but not with the Secretary's ruthless dilation of the word—is the sense of affirmative conduct intentionally directed against a particular animal or animals.").

176 50 C.F.R. at § 17.3; *see Sweet Home*, 515 U.S. at 708 (O'Connor, J., concurring) ("[B]ased on the text, structure, and legislative history of the ESA, . . . the Secretary reasonably construed the intent of Congress when he defined 'harm' to include 'significant habitat modification or degradation that actually kills or injures wildlife.'").

mals,"[177] a position squarely rejected by the *Sweet Home* majority when it upheld FWS's regulations nearly two decades ago.[178]

V. THE GUNNISON SAGE-GROUSE

Another species that FWS has recognized as imperiled due to climate change is the Gunnison sage-grouse, a ground-dwelling bird found almost exclusively in seven genetically isolated population segments in Colorado and Utah.[179] Unlike the polar bear, the Gunnison sage-grouse requires a variety of habitats for its life functions, including "large expanses of sagebrush with a diversity of grasses and forbs,"[180] as well as riparian habitat ideal for breeding.[181] In 2000, after scientists noticed that the grouse had plumage and a mating display that were completely different from other sage-grouse, biologists recognized and classified the Gunnison sage-grouse as the first new bird species in continental North America in a century.[182]

A. The Gunnison Sage-Grouse and Climate Change

The Gunnison sage-grouse faces threats from climate change primarily because of the fragile sagebrush and wetland riparian habitat the grouse requires for its essential life functions.[183] The necessity of sufficient moisture in wetland riparian areas means that warming temperatures have the potential to negatively affect the Gunnison sage-grouse by decreasing summer precipitation, reducing summer perennial grasses, and drying up summer feeding and breeding habitat.[184] Rising temperatures may also increase the competitive advantage of invasive plant species, such as cheatgrass, in areas where the grouse's preferred sagebrush currently dominates the vegetative landscape.[185] Because cheatgrass is extremely flammable, the invasion of it, and of other non-native species, may increase associated fire frequencies, further destroying Gunnison sage-grouse habitat.[186]

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177 *Sweet Home*, 515 U.S. at 720 (Scalia, J., dissenting).

178 *Id.* at 697–98 ("[U]nless the statutory term 'harm' encompasses indirect as well as direct injuries, the word has no meaning that does not duplicate the meaning of other words that § 3 [the ESA's definitional section] uses to define 'take.'").

179 Endangered Status for Gunnison Sage-Grouse, 78 Fed. Reg. 2486, 2488 (Jan. 11, 2013).

180 U.S. Fish & Wildlife Serv., *Gunnison Sage-Grouse*, http://www.fws.gov/mountain-prairie/species/birds/gunnisonsagegrouse/ [http://perma.cc/FY68-7VC4] (updated Feb. 13, 2014) (accessed Apr. 12, 2014).

181 78 Fed. Reg. at 2509.

182 John W. Fitzpatrick, *Newly Discovered, Nearly Extinct*, N.Y. Times A27 (Mar. 6, 2013) (available at http://www.nytimes.com/2013/03/07/opinion/the-plight-of-the-gunnison-sage-grouse.html [http://perma.cc/6343-HEVU] (accessed Apr. 12, 2014)).

183 Determination for the Gunnison Sage-Grouse As a Threatened or Endangered Species, 75 Fed. Reg. 59804, 59805 (Sept. 28, 2010); U.S. Fish & Wildlife Serv., *Gunnison Sage-Grouse*, *supra* n. 180.

184 75 Fed. Reg. at 59829.

185 *Id.* at 59821.

186 *Id.* at 59820.

B. The Gunnison Sage-Grouse Listing Decision

In January 2000, FWS put the Gunnison sage-grouse on its list of candidates for ESA protection,[187] shortly before it received a petition for listing from several environmental organizations.[188] After determining that the Gunnison sage-grouse did not warrant protection under the ESA in 2006, FWS withdrew the grouse from consideration for ESA protection.[189] Although the Service concluded that the grouse had a "high probability of extirpation in the foreseeable future" in three subpopulations, it decided that threats to these small and isolated subpopulations did not rise to the required level of significance in a significant portion of its range.[190]

Almost immediately, biologists and conservation organizations sued FWS, arguing that the agency had improperly decided that the Gunnison sage-grouse was not warranted for listing under the ESA.[191] They claimed this decision not to list was inconsistent with the Service's previous findings that the bird's condition warranted listing.[192] In 2010, FWS settled this suit by announcing it would reinitiate a status review to determine whether the grouse warranted ESA protection.[193]

The results of the Service's review indicated that the Gunnison sage-grouse warranted protection under the ESA, but FWS delayed the species' protection while it addressed the needs of higher priority

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187 Final Listing Determination for the Gunnison Sage-Grouse As Threatened or Endangered, 71 Fed. Reg. 19954, 19954 (Apr. 18, 2006) (finding that listing for Gunnison sage-grouse was not warranted).

188 *See* Compl. for Declaratory & Injunctive Relief under the ESA & the APA at ¶ 47, *Co. of San Miguel, Colo. v. MacDonald*, http://www.fws.gov/mountain-prairie/species/birds/gunnisonsagegrouse/GUSG_Complaint11142006.pdf [http://perma.cc/8DX4-S6TJ] (D.C.C. Nov. 14, 2006) (Case No. 1:06-cv-01946-RBW) (accessed Apr. 12, 2014) [hereinafter Gunnison Sage-Grouse Compl.] (noting that the Regional Director of the FWS Mountain-Prairie Region informed petitioners that FWS had internally designated the Gunnison sage-grouse as a candidate species less than a week before receiving the petition).

189 71 Fed. Reg. at 19954. FWS based its negative determination on "information obtained since [the] 2004 review[,]" deciding that threats to the Gunnison sage-grouse were neither imminent nor of a magnitude that they threatened or endangered the existence of the species. Although various threats could have caused the declining populations, the Service claimed that those factors had not caused significant declines in the species throughout its entire range. *Id.* at 19982.

190 *Id.* at 19982.

191 Gunnison Sage-Grouse Compl. at ¶ 1.

192 *See id.* at ¶ 50 ("Approximately six weeks after petitioners filed their Complaint, FWS published in the *Federal Register* a 'Notice of Candidate Designation,' in which FWS again acknowledged that Gunnison sage-grouse is threatened with extinction due to habitat loss, fragmentation, and degradation due to numerous human activities, that existing conservation efforts are inadequate to reverse the habitat loss or its effects, and that the species warrants listing under the ESA." (citing Notice of Designation of the Gunnison Sage Grouse as a Candidate Species, 65 Fed. Reg. 82310, 82311 (Dec. 28, 2000))).

193 75 Fed. Reg. at 59805.

species.[194] In making this warranted-but-precluded finding, the Service considered threats to the grouse from climate change, concluding that the best available science showed that temperature increases from climate change were likely to alter fire frequency, which in turn would expand the range of fire-loving invasive species, such as cheatgrass.[195] This expansion of invasive species, the Service acknowledged, would "reduce the overall cover of native vegetation, reduce habitat quality, and potentially decrease fire return intervals, all of which would negatively affect the [Gunnison sage-grouse]."[196] However, FWS closed its discussion of climatological concerns by observing that, despite the potential for climatological change to disrupt habitat and negatively affect the Gunnison sage-grouse, the agency did not consider climate change to be a significant threat to the species.[197]

The Gunnison sage-grouse remained in regulatory limbo until a 2011 settlement with WildEarth Guardians and the Center for Biological Diversity required FWS to take action on listing several hundred species that the Service had placed in its warranted-but-precluded category.[198] In January 2013, pursuant to settlement, FWS proposed to list the Gunnison sage-grouse as endangered, due primarily to "habitat loss, degradation, and fragmentation due to residential, exurban, and commercial development[,] and associated infrastructure such as roads and power lines."[199] In its proposed listing rule, the Service also noted factors such as "invasive plants, fire, and climate change," which taken collectively, may threaten the continued existence of the Gunnison sage-grouse.[200]

Although the Gunnison sage-grouse is only proposed for listing as of this writing, at the time of listing, FWS may identify, to the maximum extent practicable, those activities that would or would not constitute a violation of the ESA's section 9 take prohibition.[201] Based on its threats analysis, the Service suggested several categories of activities that could potentially result in take of the grouse, if listed.[202] Along with the normal proscriptions against unauthorized collecting,

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194 *Id.* at 59804 ("After reviewing the best available scientific and commercial information, we find that the species is warranted for listing. Currently, however, listing the Gunnison sage-grouse is precluded by higher priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants.").

195 *Id.* at 59820.

196 *Id.* at 59829.

197 *Id.*

198 Ctr. for Biological Diversity Settle. Agreement at ¶ 5; WildEarth Guardians Settle. Agreement at ¶ 7; *see also* Tutchton, *supra* n. 148, at 425–28 (discussing both settlement agreements).

199 78 Fed. Reg. at 2486.

200 *Id.*

201 *See* Notice of Interagency Cooperative Policy for Endangered Species Act Section 9 Prohibitions, 59 Fed. Reg. 34272, 34272 (July 1, 1994) ("It is the policy of the Services to identify, to the extent known at the time a species is listed, specific activities that will not be considered likely to result in violation of section 9.").

202 78 Fed. Reg. at 2536–37.

handling, possessing, and selling the species, FWS pointed to likely prohibitions on activities that "would result in the loss of sagebrush overstory plant cover or height" or the "reduction in native herbaceous understory plant cover."[203] These activities would include the removal of native shrub vegetation for infrastructure development, prescribed burning, and fire suppression activities.[204]

C. The Gunnison Sage-Grouse and a Potential Candidate Conservation Agreement

In April 2005, years before the Gunnison sage-grouse's proposed ESA listing, but after FWS's designation of the grouse as a "candidate species," the Colorado Division of Wildlife applied to the Service for an "Enhancement of Survival Permit" for the Gunnison sage-grouse.[205] The Colorado permit application included a proposed Candidate Conservation Agreement with Assurances (CCAA)[206] between the state

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[203] *Id*.

[204] *Id.*

[205] *Id.* at 2487. In an effort to promote endangered species conservation on nonfederal lands by participating private landowners, section 10(a)(1)(A) of the ESA authorizes the Secretary to issue permits "to enhance the propagation or survival of the affected species." 16 U.S.C. § 1539(a)(1)(A). Landowners use these permits in conjunction with safe harbor agreements (SHAs), which give formal assurances to property owners from FWS that if they fulfill the SHA conditions, the Service will not require any new management activities on participating private land without the landowner's consent. The Enhancement of Survival Permit allows landowners to improve habitat for listed species without facing additional restrictions "if the size of the area occupied by the species increases or the species' number increases." U.S. Fish & Wildlife Serv., *Enhancement of Survival Permits, Candidate Conservation Agreements, Safe Harbor Agreements*, http://www.fws.gov/midwest/endangered/permits/enhancement/index.html [http://perma.cc/CRL3-BGAP] (updated Oct. 24, 2012) (accessed Apr. 12, 2014).

[206] The purpose of any CCAA is to address the conservation needs of species that are candidates for listing as either threatened or endangered, before they are actually listed. A CCAA may affect landowners in several ways: (1) if the conservation actions implemented avoid an ESA listing, the ESA does not regulate the landowner; and (2) if the conservation actions do not avoid a listing, the CCAA becomes a permit authorizing the landowner's incidental take of the species. Therefore, according to FWS, "the agreements provide landowners with assurances that their conservation efforts will not result in future regulatory obligations in excess of those they agree to at the time they enter into the Agreement." U.S. Fish & Wildlife Serv., *Endangered Species Permits, Candidate Conservation Agreements with Assurances*, http://www.fws.gov/midwest/endangered/permits/enhancement/ccaa/ [http://perma.cc/VR4B-BQCX] (updated Mar. 6, 2012) (accessed Apr. 12, 2014); *see* Announcement of Final Policy for Candidate Conservation Agreements with Assurances, 64 Fed. Reg. 32726 (June 17, 1999) (announcing a joint final policy for CCAAs offering "assurances as an incentive for non-Federal property owners to implement conservation measures for species that are proposed for listing under the [ESA]," candidates for listing, or "likely to become candidates or proposed in the near future"). Although "voluntary," a CCAA must contain regulatory effect and be enforceable. *See Or. Nat. Resources Council v. Daley*, 6 F. Supp. 2d 1139, 1160–61 (D. Or. 1998) (vacating NMFS's decision to withdraw a proposed rule listing Oregon coastal coho salmon because NMFS relied on potential effects of future and voluntary conservation measures). The court ruled that NMFS could rely only on conservation efforts that were currently operational or enforceable. According to the court, "voluntary or future conservation efforts by a state should be given no weight in the listing decision. Instead

agency and FWS.[207] The state and the Service completed the CCAA and a corresponding environmental assessment in October 2006, and FWS issued the associated permit to the state on October 23, 2006.[208]

Although CCAAs do not ensure that state and private actors' conservation efforts will succeed in fending off the eventual listing of a candidate species, many affected parties who have entered into CCAAs for the Gunnison sage-grouse believe that these measures should be sufficient to preclude ESA listing.[209] Many landowners interpret these voluntary conservation agreements as an assurance that their efforts will remove the need to list the species under the ESA.[210]

In fact, the CCAA will not prevent a listing. However, the CCAAs will continue to authorize the incidental take of Gunnison sage-grouse "due to otherwise lawful activities specified in the CCAA, when performed in accordance with the terms of the CCAA," as long as the participating landowners perform the conservation measures to which they agreed.[211] Despite the CCAA, FWS faces a great deal of state and local resistance to listing the Gunnison sage-grouse. As of this writing, the Service has three times extended the timeline on its proposed endangered listing, twice to allow more comments from the public.[212]

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the NMFS must base its [listing] decision on current, enforceable measures." *Id.* at 1155.

207 78 Fed. Reg. at 2487.

208 *Id.*

209 *See e.g.* Heather Sackett, Telluride Daily Planet, *County Coalition Claims Success at Protecting Gunnison Sage-Grouse*, http://www.telluridenews.com/articles/2014/01/05/news/doc52c74f91dfc67760100926.txt [http://perma.cc/5NEJ-TJ8F] (Jan. 5, 2014) (accessed Apr. 12, 2014) (indicating that various counties in Utah believe the listing of the Gunnison sage-grouse is unwarranted, and noting that the counties drafted a letter asking "[FWS] to carefully evaluate what will be gained by a listing versus what may be lost in locally based, collaborative conservation efforts that have proven to be successful").

210 *See e.g.* Katharhynn Heidelberg, Montrose Daily Press, *For the Bird: Local Sage-Grouse Efforts Should Hold Sway, USFWS Told*, http://www.montrosepress.com/news/for-the-bird/article_55d232b6-527b-11e3-af12-0019bb2963f4.html [http://perma.cc/KY4D-WFRS] (Nov. 21, 2013) (accessed Apr. 12, 2014) ("The state has spent $30 million on conservation easements to enhance the species, while participating landowners were given the impression that the easements would remove the need for an Endangered Species Act listing, Rep. Don Coram said. The assurances were part of the reason private landowners agreed to local and regional preservation efforts, he said.").

211 78 Fed. Reg. at 2487. In a programmatic CCAA, the federal government authorizes state, local, or tribal governments to hold the overall permit, and then these entities may enroll individual property owners. To convey assurances and authorization to individual property owners, the permitted state, local, or tribal entity must issue a "certificate of inclusion" to each landowner who elects to participate by performing voluntary conservation measures. 64 Fed. Reg. at 32727.

212 *See* Press Release, U.S. Fish & Wildlife Serv., *U.S. Fish and Wildlife Service Announces Short Extension of Final Decision on Listing the Gunnison Sage-Grouse* (May 6, 2014) (available at http://www.fws.gov/mountain-prairie/pressrel/2014/05062014_usfws_announces_short_extension_of_final_decision_on_listing_the_gunnison_sage_grouse.php [http://perma.cc/NK9S-XC4Y] (accessed Apr. 12, 2014)) (announcing that the D.C. District Court granted a six-month extension of the deadline to list the Gunnison sage-grouse so the agency could properly review public comments); Proposed Endangered

A final listing decision may not be imminent.[213]

Status for Gunnison Sage-Grouse and Proposed Designation of Critical Habitat for Gunnison Sage-Grouse, 78 Fed. Reg. 65936 (Nov. 4, 2013) (announcing the reopening of the public comment period on the January 2013 proposed rules until Dec. 2, 2013); 6-Month Extension of Final Determinations on the Proposed Endangered Status and Proposed Designation of Critical Habitat for Gunnison Sage-Grouse, 78 Fed. Reg. 43123 (July 19, 2013) (announcing the reopening of the public comment period on the January 2013 proposed rules until September 3, 2013)

213 Meanwhile, the Greater sage-grouse, cousin to the Gunnison sage-grouse, is also a candidate for ESA listing. In a much broader action spanning the entire Mountain West, FWS and BLM are currently working to implement conservation measures and CCAAs to avoid the Greater sage-grouse's pending 2015 listing decision. *See* Bureau of Land Management, *Sage-Grouse and Sagebrush Conservation*, http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html [http://perma.cc/9L2B-322F] (updated Apr. 12, 2013) (accessed Apr. 12, 2014) (discussing BLM's efforts to ensure the conservation of the Greater sage-grouse before a final listing determination is made in 2015). In 2013, FWS made available an Environmental Assessment and a draft CCAA that would impose stricter controls over ongoing efforts to enhance distribution of the grouse throughout its historical range in Wyoming. *See* Enhancement of Survival Permit Application; Draft Greater Sage-Grouse Umbrella Candidate Conservation Agreement with Assurances for Wyoming Ranch Management, and Environmental Assessment, 78 Fed. Reg. 9066, 9067 (Feb. 7, 2013) ("The draft umbrella CCAA contains a comprehensive menu of conservation measures designed to reduce or remove each identified potential threat to the greater sage-grouse . . . ."). Also in 2013, the Service published a report designed to help guide conservation efforts of states and other CCAA partners to more effectively conserve the Greater sage-grouse at the landscape level. *See* U.S. Fish & Wildlife Serv., *Greater Sage-Grouse (*Centrocercus urophasianus*) Conservation Objectives: Final Report* (Feb. 2013) (available at http://www.fws.gov/mountain-prairie/species/birds/sagegrouse/COT/COT-Report-with-Dear-Interested-Reader-Letter.pdf [http://perma.cc/XG68-USY6] (accessed Apr. 12, 2014)) (delineating "reasonable objectives, based upon the best scientific and commercial data available . . . for the conservation and survival of greater sage-grouse"). Reflecting the strong incentives for state, local, and federal interests to avoid listing the Greater sage-grouse, BLM proposed a range of specific protections for the Greater sage-grouse across 10 million acres of federal lands in Eastern Oregon's sagebrush desert. Addressing the causes of fire and habitat destruction that threaten the species most directly, the preferred alternative in the Oregon draft Environmental Impact Statement (EIS) would, among other things, close approximately 118,000 acres of BLM land to grazing and require that grazing permit renewals trigger an analysis of how well-suited the grazed land is for the persistence of Greater sage-grouse. Rob Davis, The Oregonian, *BLM Gets Tough on Oregon Sage Grouse Protection to Avoid Harsher Listing*, http://www.oregonlive.com/environment/index.ssf/2013/11/blm_gets_tough_on_oregon_sage.html [http://perma.cc/RP4Q-59ZW] (Nov. 22, 2013) (accessed Apr. 12, 2014); Jeff Barnard, Associated Press, *Oregon BLM Proposes Sage Grouse Protection Plan*, http://trib.com/business/energy/oregon-blm-proposes-sage-grouse-protection-plan/article_7412a4cc-7ced-5beb-ac37-8c84cd87dabb.html [http://perma.cc/H866-P4YP] (Nov. 24, 2013) (accessed Apr. 12, 2014). This Oregon EIS is one of fifteen separate plans that states, along with energy and agriculture interests, are supporting as part of a "National Greater Sage-Grouse Planning Strategy" that would stretch across ten western states and over 47 million acres of the bird's habitat on public land. Scott Streater, E&E News, *Coalition Urges BLM to Let Utah Lead on State Sage Grouse Aid*, http://www.eenews.net/eenewspm/2014/01/27/stories/1059993520 [http://perma.cc/9RNU-THGG] (Jan. 27, 2014) (accessed Apr. 12, 2014).

VI. CONCLUSION

Citizen action triggered all four of the listing decisions discussed in this Article: three by citizen petitions,[214] and one due to the warranted-but-precluded settlement of a citizen suit filed by environmentalists.[215] The ability of citizens to petition for listings is one of the most notable, albeit often overlooked, contributions of the ESA to environmental law. Citizen petitions are by far the chief driving force behind ESA listings in the twenty-first century.[216] In each of these listing decisions, FWS acknowledged the effect of climate change on the species.[217] In the polar bear listing, the agency explicitly tied climate change to GHG emissions.[218] In the wolverine proposal, the only reason for the listing was climate change.[219] Despite recognizing the link between rising global temperatures and the need to list certain species, FWS ensured that the listings would have virtually no effect on the anthropogenic causes underlying climate change. Except for the American pika, the Obama Administration was responsible for all these decisions, suggesting that it has adopted a policy of preventing the ESA from affecting the principal cause of the listings in the first place. These unsettling possibilities prompt several observations.

First, the 4(d) rules accompanying the polar bear and the wolverine proposal limit proscribed takes to direct, intentional acts such as hunting, shooting, trapping, and capturing the species.[220] This denial of any effect on indirect, unintentional takes—for example, those caused by land uses such as grazing, logging, or land development—essentially adopted the approach of the dissenting opinion in the U.S.

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214 *See Petition to List American Pika*, *supra* n. 12, at ii (petitioning for listing of the American pika as threatened or endangered); *Petition to List Polar Bear*, *supra* n. 53, at ii (petitioning for listing of the polar bear as threatened); Gunnison Sage-Grouse Compl. at ¶ 1 (petitioning for listing of the Gunnison sage-grouse).

215 *See supra* n. 148 and accompanying text (discussing stipulated settlement agreements with the Center for Biological Diversity and WildEarth Guardians that provides for a listing decision on the wolverine and other candidate species by 2016).

216 *See* Berry J. Brosi & Eric G. N. Biber, *Citizen Involvement in the U.S. Endangered Species Act*, 337 Sci. Mag. 802, 803 (2012) (available at http://www.biologicaldiversity.org/programs/biodiversity/endangered_species_act/listing_species_under_the_endangered_species_act/pdfs/brosi-08-17-12.pdf [http://perma.cc/MFC5-4SN8] (accessed Apr. 13, 2014)) (finding through empirical analysis that "[c]itizen groups play a valuable role in identifying at-risk species for listing under the ESA"); *see also* Tutchton, *supra* n. 148, at pt. V (discussing citizen petitions).

217 *Supra* nn. 27–30 and accompanying text (acknowledging the impact of climate change on pika); *supra* nn. 61–66 and accompanying text (acknowledging the impact of climate change on polar bears); *supra* nn. 153–156 and accompanying text (acknowledging the impact of climate change on wolverines); *supra* nn. 195–197 and accompanying text (acknowledging the impact of climate change on Gunnison sage-grouse).

218 *Supra* nn. 64–68 and accompanying text (discussing FWS's determination that climate change is related to GHGs).

219 *Supra* nn. 155–156 and accompanying text (stating that FWS's only reason for listing the wolverine was climate change-induced habitat loss).

220 *Supra* nn. 173–176 and accompanying text (discussing limitations on takes imposed by 4(d) rules).

Supreme Court's *Sweet Home* decision, where Justice Scalia opined that FWS lacked authority to promulgate a take regulation that went beyond intentional, direct takes.[221] The District Court for the District of Columbia has, without apparent irony, ratified the Service's adoption of the Scalia dissent in a case in which FWS succeeded in defending its regulation defining proscribed takes to include habitat degradation.[222]

Second, the notion that a 4(d) rule could be a vehicle for essentially exempting otherwise prohibited takes was not taken seriously until the Clinton Administration, when the Department of the Interior implemented a series of reforms, including expanding the use of habitat conservation plans that would provide "safe harbors" for landowners and included "no surprises" guarantees.[223] One of these reforms was the transformation of section 4(d) into a vehicle to authorize takes for threatened species,[224] presumably making listing decisions less draconian for landowners affected by listings of threatened species. The 4(d) reform made the distinction between listed endangered species and listed threatened species significant for the first time.

The climate change-affected ESA species considered in this Article have amplified the importance of the distinction between listing a species as threatened as opposed to endangered. The former may include generic (and perhaps widespread) exemptions from the statute's take prohibition, the latter may not. In the climate change context, the 4(d) rules for the polar bear and proposed wolverine listings essentially exempt the principal—and in the case of the wolverine, the sole—cause for the listing: activities causing global temperatures to rise.[225] Even more surprisingly, the 4(d) rules suggest activities that cause warming temperatures (e.g., emissions of GHG) and loss of listed species' habitat will not trigger section 7 consultation.[226] One wonders if the architects of the 1990s administrative reforms to the ESA, whose goal was to prevent Congress from eviscerating the statute,[227] would be

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[221] *Sweet Home*, 515 U.S. at 720 (Scalia, J., dissenting) ("What the nine other words in [16 U.S.C.] § 1532(19) have in common—and share with the narrower meaning of 'harm' described above, but not with the Secretary's ruthless dilation of the word—is the sense of affirmative conduct intentionally directed against a particular animal or animals.").

[222] *Supra* nn. 116–133 and accompanying text (describing the polar bear litigation).

[223] These reforms were prompted by widespread concern that a hostile Congress would amend the ESA to remove controversial provisions such as section 9's take prohibition, which applies to private landowners as well as governments. *See* Habitat Conservation Plan Assurances ("No Surprises") Rule, 63 Fed. Reg. 8859 (Feb. 23, 1998).

[224] *See* 63 Fed. Reg. 8871–72.

[225] *Supra* nn. 91–115 and accompanying text (discussing the polar bear 4(d) rule); *supra* nn. 163–169 and accompanying text (discussing the wolverine 4(d) rule).

[226] *Supra* nn. 101–104 and accompanying text (discussing the application of the polar bear 4(d) exception to section 7 consultation).

[227] These architects included Professors Joe Sax, then special assistant to the Secretary of the Interior and the father of the modern public trust doctrine, and John Leshy, then Interior Solicitor and an author of leading casebooks on public land and water law. Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial*

happy about how their innovations are being employed to eliminate the ESA as a brake on GHG emissions.

Third, these 4(d) rules are concerning in that they seem to import federal judicial standing rules into ESA decision making. FWS, in deciding not to address the causes of climate change in its listing decisions, repeatedly cites the lack of a causal connection between the activities causing climate change and the adverse effects on individual species' habitat. Federal standing rules exclude overly attenuated injuries,[228] and the Service's discretionary use of this sort of direct causal chain in ESA decision making appears to impose an insurmountable obstacle to the ESA actually protecting listed species from the threats posed by climate change.

Finally, given the growing importance of 4(d) rules, the distinction between threatened and endangered species seems now to be one of the chief issues in the implementation of the ESA. For example, if FWS proceeds to list the Gunnison sage-grouse as endangered as proposed,[229] there will be no 4(d) rule exempting certain types of takes from the statute's prohibition as in the case of the polar bear or the wolverine proposal.[230] The growing distinction between the effect of a threatened versus an endangered listing, coupled with the fact that the difference between the two is subtle,[231] suggests that in the near future there will be considerably more litigation over this distinction, as perhaps presaged by the polar bear litigation.[232]

Intervention, 68 Mich. L. Rev. 471 (1970); U. of Cal. Hastings College of L., *John Leshy, The Harry D. Sunderland Distinguished Professor of Real Property Law*, http://www.uchastings.edu/academics/faculty/facultybios/leshy/index.php [http://perma.cc/Z95T-RTR8] (accessed Apr. 12, 2014); *see generally* Symposium, *Takings, Public Trust, Unhappy Truths, and Helpless Giants: A Review of Professor Joseph Sax's Defense of the Environment through Academic Scholarship*, 25 Ecol. L.Q. 325, 325–438 (1998) (reviewing the work of Professor Joseph Sax as one of the "most significant natural resources scholars of modern times"); *see e.g.* U. of Cal. Hastings College of L., *Faculty Publications, John D. Leshy*, http://librarysource.uchastings.edu/library/bibliographies/faculty/John-D.-Leshy/ [http://perma.cc/V65K-W6N6] (accessed Apr. 12, 2014) (listing John Leshy as co-author of *Federal Public Land and Resources Law* (6th ed., Found. Press 2007) and *Legal Control of Water Resources* (5th ed., West 2012)).

228 *See e.g. Allen v. Wright*, 468 U.S. 737, 752–53 (1984) (In a challenge by parents of black schoolchildren to the sufficiency of IRS standards for denying tax-exempt status to racially discriminatory schools, the Court determined that parents did not have standing to prevent the government from violating tax exemption law, absent an allegation of direct injury or an injury that was fairly traceable to the government's conduct. Although there was an injury, the Court found the nexus between the government's actions and the plaintiffs' injuries were too attenuated.).

229 *Supra* nn. 198–200 and accompanying text (discussing the proposed listing of the Gunnison sage-grouse).

230 *Supra* nn. 91–92 and accompanying text (discussing the 4(d) polar bear rule take exemptions); *supra* nn. 163–169 and accompanying text (discussing the 4(d) wolverine rule take exemptions).

231 *Supra* n. 23 (discussing differences between endangered and threatened listing designations).

232 *Supra* n. 116–117 and accompanying text (discussing litigation over the issue of threatened versus endangered designation in the case of the polar bear).

The results of this analysis show that the ESA's potential to curb GHG emissions has been largely eliminated by the listing decisions discussed in this Article. It is true that, even without the 4(d) exemptions provided by the rules discussed in this study, the burden of proving that particular GHG emissions caused a proscribed take of listed species would be daunting. But at least it would be possible. The 4(d) rules analyzed in this Article categorically eliminate the opportunity to make the case that particular causes of climate change take listed species or adversely affect their habitats. Perhaps even more disturbingly, the 4(d) rules also seem to signal that there will be no section 7 federal consultation on federal actions that authorize GHG emissions that adversely affect listed species' habitats.[233] It may, for example, be unrealistic to think that a section 7 consultation on increased federal coal leasing in the Northern Great Plains, would lead to a reasonable and prudent alternative curbing emissions so as to ameliorate climate change impacts on polar bears and wolverines, but taking such an option completely off the table is troublesome.

If the study of these four species is any indication, the ESA is hardly a pit bull in the effort to combat climate change. Forty years after its enactment, the statute has instead become a coqui frog,[234] a species that makes a whole lot of noise, but threatens no one.

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[233] *See e.g. supra* nn. 162–178 and accompanying text (discussing the wolverine 4(d) rule).

[234] Coqui frogs, a species endemic to Puerto Rico and invasive on the islands of Hawaii, have calls that can reach one hundred decibels from just three feet away, making them the loudest known amphibian. In Hawaii, the coqui is a notorious and unpopular pest, and fed up residents compare its calls to the sound of a lawnmower running all night. *See* Natl. Geographic, *World's Loudest Animals—"Power Saw" Cricket, More, Loud As a Lawnmower*, http://news.nationalgeographic.com/news/2013/08/pictures/130807-animals-loud-loudest-cricket-bushcricket-science/#/loudest-animals-coqui-tree-frog_37392_600x450.jpg [http://perma.cc/54YQ-LRXV] (Aug. 7, 2013) (accessed Apr. 12, 2014).