

DEFENDERS OF WILDLIFE V. JEWELL (D. MONT. 2016)

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INTRODUCTION

The Endangered Species Act (“ESA”) requires that decisions to list a species as “endangered” or “threatened” be made “solely on the basis of the best scientific and commercial data available . . . after conducting a review of the status of the species.”¹ Congress intended that economic and other considerations should be excluded from listing decisions.² Although the quantity of data must be “sufficient,” neither the statute’s text nor its legislative history provide much guidance about the quality of data needed to justify a listing determination.³

The U.S. District Court for the District of Montana recently held in *Defenders of Wildlife v. Jewell*⁴ that the U.S. Fish and Wildlife Service (the “Service”) violated the ESA when it withdrew a proposed rule⁵ to list the North American wolverine as a threatened species.⁶ This district court case represents the latest, but not the final, step in the now twenty-two-year-long effort of conservation groups to list the North American wolverine, *Gulo gulo luscus*, in the contiguous United States.⁷ The court’s ruling against the agency is noteworthy for at least two reasons.

First, this case represents a victory for the inclusion of climate change effects in listing determinations. The Service has been reluctant to list species as endangered or threatened due to threats of global climate change, in part because of a perception that ESA protections will be powerless against this threat.⁸ Although cases challenging listing determinations have limited prece-

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1. 16 U.S.C. § 1533(b)(1)(A) (2012). This best-available science requirement is overarching; although the various stages of the listing process have more specific standards, each stage requires consideration of the best-available science.
2. Laurence Michael Bogert, *That’s My Story and I’m Stickin’ to It: Is the “Best Available” Science Any Available Science Under the Endangered Species Act?*, 31 IDAHO L. REV. 85, 123 (1994) (quoting H.R. REP. NO. 97-567, at 2820 (1982)).
3. 16 U.S.C. § 1533; Bogert, *supra* note 2, at 123 (quoting H.R. REP. NO. 97-835, at 2861 (1982)).
4. *Def. of Wildlife v. Jewell*, 176 F. Supp. 3d 975 (D. Mont. 2016).
5. Threatened Status for the Distinct Population Segment of the North American Wolverine Occurring in the Contiguous United States, 79 Fed. Reg. 47,522 (Aug. 13, 2014).
6. *Def. of Wildlife*, 176 F. Supp. 3d at 1011.
7. *Id.* at 978, 980–82.
8. See Press Release, Dep’t. of the Interior, Office of the Sec’y, Secretary Kempthorne Announces Decision to Protect Polar Bears Under Endangered Species Act (May 14, 2008)

dential value due to their fact-specific nature, the court's reasoning in this case may be persuasive, especially for species that are particularly dependent on ice, snow, or low temperatures,⁹ when taken together with other recent ESA listing cases that factor in threats from climate change.¹⁰ Additionally, this case represents a broader victory for conservation groups. The court's interpretations of best-available science and foreseeability are better aligned with the precautionary principle¹¹ and the practical limits of scientific data and analysis than is the Service's current routine interpretation of both of these key terms. Other courts should follow this court's lead to improve the interpretation of key language within the ESA, especially as it relates to scientific uncertainty.

(Then-Secretary of the Interior Kempthorne stated, "While the legal standards under the ESA compel me to list the polar bear as threatened, I want to make clear that this listing will not stop global climate change or prevent any sea ice from melting.").

9. The Ninth Circuit reversed a district court by affirming a National Marine Fisheries Service ("NMFS") decision to list the Pacific bearded seal as threatened based on climate change models that predict sea ice conditions at the end of this century. *Alaska Oil & Gas Ass'n v. Pritzker*, No. 14-35806, 2016 WL 6156040, at *4-6, 11 (9th Cir. Oct. 24, 2016). Kristen Monsell, staff attorney for the Center for Biological Diversity, described the decision's significance, stating, "[t]his legal victory is likely to have major implications for many other climate-threatened species." Maura Dolan, *Species May Be Listed as Threatened Based on Climate Change Projections, Court Says*, L.A. TIMES (Oct. 24, 2016), <http://perma.cc/ELF3-U3BP>. One of the reasons this is so controversial is that species threatened by climate change may not be currently declining. As Alaska Senior Assistant Attorney General Brad Meyen pointed out: "If this opinion stands, the National Marine Fisheries Service would list a species that is abundant and in good health based on the claim that climate change will impact habitat over the next 100 years and may cause harm." *Id.* The State of Oregon similarly argued that the North American wolverine should not be listed because, among other reasons, its populations had (as of May 2013) "increased dramatically." *Def. of Wildlife*, 176 F. Supp. 3d at 987.
10. *See Greater Yellowstone Coal., Inc. v. Servheen*, 665 F.3d 1015, 1024-25 (9th Cir. 2011) (holding that, in deciding to remove the Yellowstone grizzly bear from the threatened species list, the Service irrationally ignored the data showing a likely continued decline in one of the bear's food sources due to climate change); *In re Polar Bear Endangered Species Act Listing and § 4(d) Rule Litig.*, 794 F. Supp. 2d 65, 116 (D.D.C. 2011) (upholding the Service's decision to list the polar bear as threatened based on predictions of decreasing sea ice); *see also* Sona Mohnot, *Greater Yellowstone Coalition, Inc. v. Servheen: The Ninth Circuit Rejects Agency Claim of Scientific Uncertainty in ESA Delisting*, 26 TUL. ENVTL. L.J. 135, 145 (2012) ("The court gave considerable weight to the Service's findings that climate change may cause an increase in mountain pine beetles and white pine blister rust, which would result in a decrease in whitebark pine and threaten the grizzly population.").
11. For a definition of the precautionary principle, a doctrine of environmental law, see U.N. Conference on Environment and Development, *Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.151/26 (Vol. I), annex I (Aug. 12, 1992), <http://perma.cc/7R9W-6ZNT> ("In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.").

Second, this case is especially noteworthy for the court's reasoned interpretation of the ESA listing standards in light of the Service's politically motivated excuse of scientific uncertainty. While scientific uncertainty may be especially conspicuous when climate change models are discussed, the Service has used the lack of certainty to avoid listing species since the ESA was first passed.¹² The Administrative Procedure Act's ("APA") "arbitrary and capricious" standard¹³ sets a high threshold for demonstrating impermissible agency decision-making. Courts are even more deferential when they review listing decisions that they deem technical or scientific in nature,¹⁴ which usually applies to ESA cases.¹⁵ This approach, when too hands-off, can fail to provide a meaningful check on agency action.¹⁶

This court, in contrast, delved deeply into the main scientific sources in the record, as well as into the Service's process for making its determination. The opinion itself explains the court's reason for including these "voluminous facts" was:

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12. See, e.g., *Greater Yellowstone Coal.*, 665 F.3d at 1028 (rejecting the Service's claim of scientific uncertainty to support a decision to delist the threatened Yellowstone grizzly bear population); *Tucson Herpetological Soc'y v. Salazar*, 566 F.3d 870, 879 (9th Cir. 2009); *Humane Soc'y of the U.S. v. Pritzker*, 75 F. Supp. 3d 1, 12 (D.D.C. 2014) (holding that the NMFS applied an impermissibly stringent evidentiary standard at the ninety-day stage by requiring conclusive evidence that the distinct population segment of Northwest Atlantic porbeagle sharks was declining), *appeal dismissed*. *Humane Soc'y of the U.S. v. Pritzker*, No. 15-5038, 2015 WL 1619247 (D.C. Cir. Mar. 17, 2015).
 13. See, e.g., *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) ("Normally an agency rule would be arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.").
 14. See, e.g., *Balt. Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 103 (1983) ("When examining this kind of scientific determination, as opposed to simple findings of fact, a reviewing court must generally be at its most deferential."). But see Candee Wilde, *Evaluating the Endangered Species Act: Trends in Mega-Petitions, Judicial Review, and Budget Constraints Reveal a Costly Dilemma for Species Conservation*, 25 VILL. ENVTL. L.J. 307, 323-27 (2014) (citing examples from industry and landowner challenges to ESA listings to argue that "courts take a hard look at the [Service]'s scientific evidence on species and habitats and often find the evidence fails the best available science standard outlined in the ESA's Section Four").
 15. See Alanna Kearney, *The Battle May Be Over, but What About the War? Examining the ESA in the Crusade Against Global Warming After In Re Polar Bear Endangered Species Act Listing and Section 4(d) Rule Litigation*, 25 VILL. ENVTL. L.J. 529, 550 (2014).
 16. This great deference to agencies on scientific questions is also somewhat ironic. Mandates to consider only science, without regard to other policy concerns, in various wildlife protection statutes and their amendments in the 1960s and 1970s were intended to decrease discretion to agencies in an era of distrust. See Holly Doremus, *Listing Decisions Under the Endangered Species Act: Why Better Science Isn't Always Better Policy*, 75 WASH. U. L.Q. 1029, 1047-48 (1997).

because the natural reflex in a situation such as this is to ask “why?” Why did the Service make the decision it did in the Proposed Rule, based on what it determined to be the best available science, and reject that decision eighteen months later?

Based on the record, the Court suspects that a possible answer to this question can be found in the immense political pressure that was brought to bear on this issue, particularly by a handful of western states.¹⁷

Alluding to the Service’s claim that the scientific information was too uncertain, the court declared that “no greater level of certainty is needed to see the writing on the wall for this snow-dependent species standing squarely in the path of global climate change.”¹⁸ The court acknowledged the effect of politics on the Service’s decision: “The Service’s decision on the wolverine has profound consequences, and the reality is that, in some instances, species conservation is a political issue as much as it is a scientific one.”¹⁹ The court seemed to wonder, if listing is not warranted for the wolverine, for what species would listing be warranted? In a powerful final line, the court remanded to the Service, directing it to fulfill its ESA obligations by going forward with the listing process, “to take action at the earliest possible, defensible point in time to protect against the loss of biodiversity within our reach as a nation. For the wolverine, that time is now.”²⁰

I. THE BEST-AVAILABLE SCIENCE OF WOLVERINES

A. *The Wolverine: Life History*

The North American wolverine is a subspecies of *Gulo gulo*, the largest land-dwelling animal in the weasel family.²¹ The scientific name is Latin for “glutton,”²² in reference to the wolverine’s opportunistic feeding and skill as a scavenger.²³ Wolverines have a circumpolar distribution,²⁴ but only between 250

17. *Def. of Wildlife v. Jewell*, 176 F. Supp. 3d 975, 1000 (D. Mont. 2016).

18. *Id.* at 1011.

19. *Id.* at 1000.

20. *Id.* at 1011.

21. U.S. FISH & WILDLIFE SERV., WOLVERINE: *Gulo gulo luscus* (2013), <http://perma.cc/KCP6-XWCR>.

22. CHARLTON T. LEWIS & CHARLES SHORT, A LATIN DICTIONARY (1879), <https://perma.cc/99JE-HQDJ>.

23. *Fact Sheet: Wolverines: Basic Facts About Wolverines*, DEFS. OF WILDLIFE (2016), <http://perma.cc/47DC-FRYD>.

and 300 individuals remain in the contiguous United States,²⁵ and their numbers are expected to decrease further.²⁶ Because adult females reproduce only about every other year, depending on food availability, and their litter sizes are small, wolverines have one of the lowest reproductive rates of all mammals.²⁷

Wolverines are snow-obligate: they require “[d]eep, persistent, spring snow” cover for successful reproduction because they give birth in snow-covered dens.²⁸ Mating season is late spring to early fall.²⁹ The following winter, female wolverines dig their dens by tunneling through deep snow and also make use of fallen trees and avalanche rubble to make dens where they will give birth.³⁰ Litters averaging one or two kits are born between February and April.³¹ The kits live in the snow-covered dens, sometimes a series of them, until they are weaned or until temperatures rise above freezing, as late as May.³²

Because wolverines require snow-covered habitat into the spring for reproductive success, climate change models predict that wolverines living in the contiguous United States may lose two-thirds of their suitable habitat in less than one hundred years.³³ The Service noted in their publications as early as 2013 that studies by the University of Washington’s Climate Impacts Group and the U.S. Department of Agriculture Forest Service’s Rocky Mountain Research Station predicted a habitat reduction of sixty-three percent by 2085 due to climate change, resulting in habitat fragmentation.³⁴ Other threats to wolverines include trapping (intended for wolverines and for other animals), human interaction associated with common winter recreational activities such as snowmobiling and cross-country skiing, and human-induced habitat loss from deforestation and commercial development.³⁵

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24. Wolverine occur only at high latitudes in the Northern hemisphere, but at a wide range of longitudes. Put simply, their natural range encircles the North Pole. DEFS. OF WILDLIFE, *supra* note 23.
 25. U.S. FISH & WILDLIFE SERV., *supra* note 21.
 26. *See* DEFS. OF WILDLIFE, *supra* note 23.
 27. U.S. FISH & WILDLIFE SERV., *supra* note 21.
 28. *Id.*
 29. *Id.*
 30. DEFS. OF WILDLIFE, *supra* note 23.
 31. U.S. FISH & WILDLIFE SERV., *supra* note 21.
 32. WILD MAMMALS OF NORTH AMERICA: BIOLOGY, MANAGEMENT, AND CONSERVATION 676 (George A. Feldhamer et al., eds., 2d ed. 2003).
 33. *Fact Sheet Wolverine: Threats to Wolverines*, DEFS. OF WILDLIFE (2016), <https://perma.cc/B8P8-VZTN>.
 34. U.S. FISH & WILDLIFE SERV., *supra* note 21.
 35. DEFS. OF WILDLIFE, *supra* note 33. Intervenor-defendants in *Defenders of Wildlife* consequently included Idaho Farm Bureau Federation, Wyoming Farm Bureau, Montana Farm Bureau Federation, Washington Farm Bureau, Idaho State Snowmobile Association, Colorado Snowmobile Association, Colorado Off-Highway Vehicle Coalition, American Petroleum Institute, Montana Petroleum Association, and Western Energy Alliance. *Def. of Wildlife v. Jewell*, 176 F. Supp. 3d 975, 975 (D. Mont. 2016).

B. *ESA Listing Standards and “Best Available Science”*

The ESA provides for two levels of protection: endangered status and threatened status. The ESA provides that a species is endangered if it “is in danger of extinction throughout all or a significant portion of its range”³⁶ due to any of the following five factors or their cumulative effects:

- (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.³⁷

Relatedly, a species is threatened if it “is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.”³⁸ The Service cannot deny listing if the best available scientific information indicates that a species is endangered or threatened under any one of the five ESA listing factors or their cumulative effects.³⁹ Threats related to climate change fit squarely within ESA listing factors (A), “present or threatened destruction, modification, or curtailment of [a species’s] habitat or range,” (E), “other natural or manmade factors affecting its continued existence,” and/or cumulative effects of the factors.⁴⁰

The ESA requires that listing determinations be made “solely on the basis of the best scientific and commercial data available . . . after conducting a review of the status of the species.”⁴¹ This language was introduced in the 1982 amendments to the ESA.⁴² Congress meant to decrease the time spent deliberating over a listing by making it clear that economic and other considerations should be kept out of the listing decision.⁴³ Unfortunately, neither the text of

36. 16 U.S.C. § 1532(6) (2012).

37. 16 U.S.C. § 1533(a)(1).

38. 16 U.S.C. § 1532(20).

39. See *City of Las Vegas v. Lujan*, 891 F.2d 927, 933 (D.C. Cir. 1989) (“Even if the available scientific and commercial data were inconclusive, [the Service] may—indeed must—still rely on it at that stage. . . .”); see also *Bldg. Indus. Ass’n of Superior Cal. v. Norton*, 247 F.3d 1241, 1246–47 (D.C. Cir. 2001) (“the Service must utilize the ‘best scientific data available,’ not the best scientific data possible”) (alteration omitted).

40. 16 U.S.C. § 1533(a)(1).

41. 16 U.S.C. § 1533(b)(1)(A).

42. Endangered Species Act Amendments of 1982, Pub. L. No. 97-304, § 102, 96 Stat. 1411, 1411.

43. Bogert, *supra* note 2, at 123 (quoting H.R. Conf. Rep. No. 835, 97th Cong., 2d Sess. 19 (1982), reprinted in 1982 U.S.C.C.A.N. 2860).

the statute nor the legislative history elucidate what best-available science means.⁴⁴ A definition of “best scientific and commercial data available” has never even been provided in a regulation.⁴⁵

Fortunately, though there has been a lack of clarity from the Service, courts have helped to establish what the Service may not do. The Service cannot demand an amount of scientific evidence that is out of step with the development of scientific knowledge with respect to a given species.⁴⁶ To do so would lead to a counterintuitive result by rendering it prohibitively difficult to list, or even consider listing, the rarest, and as a result least known or observed, species. The Supreme Court has made clear that the reality that “policymaking in a complex society must account for uncertainty, however, does not imply that it is sufficient for an agency to merely recite the terms ‘substantial uncertainty’ as a justification for its actions.”⁴⁷

Perhaps most importantly, the Service “cannot ignore available biological information.”⁴⁸ Likewise, the Service cannot replace incomplete data and expert opinion with speculations and unsupported assertions.⁴⁹ Nor can the Service ignore recent data in favor of older data without adequate explanation of this choice.⁵⁰ “The best available data requirement . . . prohibits [the Service] from disregarding available scientific evidence that is in some way better than the evidence it relies on.”⁵¹ When there are gaps in information, the Service “must rationally explain why the uncertainty . . . counsels in favor of [one con-

44. *Id.* at 122–23.

45. Michael J. Brennan et al., *Square Pegs and Round Holes: Application of the “Best Scientific Data Available” Standard in the Endangered Species Act*, 16 TUL. ENVTL. L.J. 387, 404 (2003).

46. See *Tucson Herpetological Soc’y v. Salazar*, 566 F.3d 870, 879 (9th Cir. 2009) (“If the science on population size and trends is underdeveloped and unclear, the [Service] cannot reasonably infer that the absence of evidence of population decline equates to evidence of persistence”).

47. *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 52 (1983).

48. *Trout Unlimited v. Lohn*, 645 F. Supp. 2d 929, 950 (D. Or. 2007) (quoting *Kern Cty. Farm Bureau v. Allen*, 450 F.3d 1072, 1080–81 (9th Cir. 2006)). Biological or scientific “information” includes the expert opinions of biologists. See 50 C.F.R. § 424.14(b)(2)(iv) (2013).

49. See *N. Spotted Owl (Strix Occidentalis Caurina) v. Hodel*, 716 F. Supp. 479, 483 (W.D. Wash. 1988) (holding that the Service acted arbitrarily and capriciously when it disregarded all expert opinion on population viability in favor of its own assertions).

50. *Sw. Ctr. for Biological Diversity v. Babbitt*, 926 F. Supp. 920, 927 (D. Ariz. 1996) (holding that the Service’s unexplained reliance on earlier data to the exclusion of later data violated the mandate to use the best available science in 16 U.S.C. § 1533(b)(1)(A)).

51. *Kern Cty. Farm Bureau*, 450 F.3d at 1080 (citations and alterations omitted); see also, e.g., *Defs. of Wildlife v. Jewell*, 70 F. Supp. 3d 183, 194–95 (D.D.C. 2014) (holding that the Service satisfied the “best data available” standard when it utilized new information about implementation of a species resource management plan, evaluated state conservation plans covering the vast majority of the species’s habitat, and considered information from experts, state governments, other government agencies, and scientific studies).

clusion] rather than the opposite conclusion.”⁵² The Service must explain why the uncertainty leads to an inference that listing is not warranted, keeping in mind that “any insufficiency of data should be resolved in favor of the species.”⁵³

The Service may not use uncertainty about the future to justify a lack of present action, but rather should employ the precautionary principle in making listing determinations because this approach was Congress’s intent in passing the ESA.⁵⁴ The ESA “is concerned with protecting the future of [a listed] species, not merely the preservation of existing [members of the species].”⁵⁵ Two of the five listing factors explicitly indicate that the ESA is intended to protect against future threats, including “the present or *threatened* destruction, modification, or curtailment of its habitat or range” and “other natural or manmade factors affecting its *continued* existence.”⁵⁶ Points of scientific uncertainty about threats should not be used to undermine a listing effort if more certain information is not available.⁵⁷

II. DEFENDERS OF WILDLIFE V. JEWELL

The listing history of the wolverine has been tortured and tortuous. Over fifteen conservation groups have been involved.⁵⁸ The first petition to list the wolverine as a threatened or endangered species was filed in 1994.⁵⁹ It was denied. The Service returned a negative ninety-day finding,⁶⁰ meaning that the

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52. Rocky Mountain Wild v. U.S. Fish & Wildlife Serv., No. CV 13-42-M-DWM, 2014 WL 7176384 at *5 (D. Mont. Sept. 29, 2014).
 53. Earth Island Inst. v. Hogarth, 494 F.3d 757, 763 (9th Cir. 2007).
 54. See Phillip M. Kannan, *The Precautionary Principle: More Than a Cameo Appearance in United States Environmental Law?*, 31 WM. & MARY ENVTL. L. & POL’Y REV. 409, 435–37 (2007) (arguing that the ESA was intended to employ the precautionary principle, although its implementation “frequently” does not).
 55. Alaska Oil & Gas Ass’n v. Jewell, 815 F.3d 544, 555 (9th Cir. 2016).
 56. 16 U.S.C. § 1533(a)(1)(A), (E) (2012) (emphases added).
 57. Cf. Reed F. Noss, *Some Principles of Conservation Biology, As They Apply to Environmental Law*, 69 CHI.-KENT L. REV. 893, 898 (1994) (“The less data or more uncertainty involved, the more conservative a conservation plan must be. Some non-trivial level of uncertainty accompanies all planning decisions.” (italics omitted)).
 58. Numerous conservation groups have been involved in the efforts to list the North American wolverine. These groups include, in no particular order, the Predator Project and Biodiversity Legal Foundation, Predator Conservation Alliance, Defenders of Wildlife, Northwest Ecosystem Alliance, Friends of the Clearwater, Superior Wilderness Action Network, Klamath-Siskiyou Wildlands Center and Northwest Ecosystem Alliance, Center for Biological Diversity, Cottonwood Environmental Law Center, Footloose Montana, Biodiversity Conservation Alliance, and Earthjustice Legal Defense Fund and Western Environmental Law Center. See *Defs. of Wildlife v. Jewell*, 176 F. Supp. 3d 975, 978, 980–82 (D. Mont. 2016).
 59. *Id.* at 980.
 60. *Id.* at 980–81; see also 16 U.S.C. § 1533(b)(3)–(6) (describing the listing timeline, which begins with a citizen petition, then a preliminary ninety-day finding of whether listing “may be warranted” and, if positive, proceeds next to a twelve-month determination).

Service concluded that the petition did not “present[] substantial scientific or commercial information indicating that the petitioned action may be warranted.”⁶¹ Five years later, conservation groups petitioned again and were again denied at the preliminary ninety-day stage.⁶²

When conservation groups appealed the second negative ninety-day finding, the U.S. District Court for the District of Montana ordered a rare type of relief: it compelled the Service to advance to the twelve-month stage.⁶³ When the Service’s twelve-month finding declined to propose listing, the conservation groups again sued, leading to a settlement agreement stipulating a new twelve-month determination.⁶⁴ This time, the Service determined that listing was “warranted but precluded,” a permissible finding that excuses lack of action based on higher listing priorities.⁶⁵ Another settlement agreement prompted the Service, in 2013, to finally propose listing the wolverine as a threatened species within the distinct population segment in the contiguous United States.⁶⁶ However, after strong pressure from several Western states during the notice-and-comment period,⁶⁷ the Service reversed its course and withdrew the listing proposal, citing concerns about uncertainty and a lack of specificity in the scientific data.⁶⁸

The court granted the conservation group’s motion for summary judgment on three issues, and granted the federal government’s motion for summary judgment on a fourth. Most importantly for the wolverine, the court vacated the Service’s withdrawal of the proposed listing rule.⁶⁹ The court held that the Service erred by (1) determining that projected reductions in spring snow cover caused by climate change would not impact the wolverine at the reproductive denning scale in the foreseeable future,⁷⁰ (2) weighing the Service staff’s unsubstantiated opinions and general scientific information above the more specific and supported consensus of the majority of wolverine experts,⁷¹ (3) demanding

61. 16 U.S.C. § 1533(b)(3)(A). The Service has defined “substantial information” as the “amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted.” 50 C.F.R. § 424.14(b)(1) (2013).

62. *Def. of Wildlife*, 176 F. Supp. 3d at 981. Although the ESA directs the Service to publish a preliminary finding within ninety days of receiving a listing petition, 16 U.S.C. § 1533(b)(3)(A), this and other stages of the listing process typically take longer. Some of the deadlines, including the ninety-day deadline, are considered discretionary. *Id.* Other deadlines, such as the twelve-month determination after a positive ninety-day finding, are inflexible, 16 U.S.C. § 1533(b)(3)(B), but this may require litigation to enforce. *See, e.g., Ctr. for Biological Diversity v. Norton*, 208 F. Supp. 2d 1044, 1049 (N.D. Cal. 2002).

63. *Def. of Wildlife*, 176 F. Supp. 3d at 981.

64. *Id.*

65. *See* 16 U.S.C. § 1533(b)(3)(B)(iii).

66. *Def. of Wildlife*, 176 F. Supp. 3d at 982.

67. *Id.* at 986–89.

68. *Id.* at 995–96.

69. *Id.* at 1011–12.

70. *Id.* at 1011.

71. *Id.* at 1001–03.

a greater level of certainty than required by the plain text of the ESA,⁷² and (4) concluding “that small population size and low genetic diversity do not pose an independent threat” to wolverines’ survival in the United States.⁷³ The only holding that was unfavorable to conservationists was the court’s ruling that the Service did not err by declining to consider the wolverine’s historical range in making the listing decision.⁷⁴

The court’s analysis involved interpretations of four separate phrases in the ESA: the court construed “best scientific and commercial data available,” “foreseeable future,” “significant portion of its range,” and “distinct population segment.”⁷⁵ This Comment focuses on the court’s treatment of “best scientific and commercial data available” and “foreseeable future.”

A. “Best Available Science”

The opinion is crafted to show that the scientific record is not uncertain, as the Service argues; instead, the data available show that the wolverine depends on snow for its survival and is thus, threatened by climate change. Chief Judge Dana L. Christensen first provided background facts detailing the North American wolverine’s life history⁷⁶ and listing history,⁷⁷ before reaching the scientific record that the Service considered. The court went into a high degree of detail, two and a half pages’ worth,⁷⁸ to describe the scientific methodology used in the two studies that together formed the strongest evidence of climate change’s predictable effect on wolverines. These two studies, Copeland (2010)⁷⁹ and McKelvey (2011),⁸⁰ first convinced the Service to propose a rule to list the wolverine as a threatened species, based on its obligate relationship to snow

72. *Id.* at 1003 (“Quite simply, the Service cannot demand a greater level of scientific certainty than has been achieved in the field to date . . .”).

73. *Id.* at 1011.

74. *Id.* at 1010.

75. With respect to the “distinct population segment” text, the court held that the Service has the authority to list a distinct population segment (“DPS”) of a subspecies, in this case the DPS of the North American wolverine that inhabits the contiguous United States. *Id.* at 1010–11. The holding was in response to the industry intervenors’ novel argument that the plain text of the ESA allows for listing an entire species, an entire subspecies, or a DPS of an entire species, but not a DPS of a subspecies. *Id.* at 1010. The court rejected this argument as “unnecessarily and insupportably restrictive.” *Id.*

76. *Id.* at 978–81.

77. *Id.* at 980–98.

78. *Id.* at 982–84.

79. J.P. Copeland et al., *The Bioclimatic Envelope of the Wolverine (Gulo gulo): Do Climatic Constraints Limit Its Geographic Distribution?*, 88 CANADIAN J. ZOOLOGY 233 (2010).

80. Kevin S. McKelvey et al., *Climate Change Predicted to Shift Wolverine Distributions, Connectivity, and Dispersal Corridors*, 21 ECOLOGICAL APPLICATIONS 2882 (2011).

cover for denning during the spring and decreased snow cover due to climate change in the foreseeable future.⁸¹

In contrast, the Service's 2015 decision to withdraw the listing recommendation was based primarily on impermissible political reasons. The court provided a list of reasons that the Service "impermissibly cast the [McKelvey] study aside," including a holding that the Service's reliance on the opinion of only one scientist's comments to justify their rule withdrawal was arbitrary and capricious.⁸² A few lines of this section of the opinion are particularly telling:

The Court views Torbit's comments as nothing more than an unpublished, unreviewed, personal opinion, elicited by Walsh in the eleventh hour to back fill her foregone conclusion to withdraw the Proposed Rule. . . . Torbit relied on tangential science to discredit specific science Moreover, the timing of Torbit's comments gives them a sort of "shoot first ask questions later" feel—Walsh had drafted a memo outlining her reasons for withdrawing the Proposed Rule *before* receiving Torbit's opinion.⁸³

In spring of 2014, the Service organized a panel of nine experts in climate change, wolverines, and population ecology with the express intent to assess the level of agreement among scientists,⁸⁴ but as the court pointed out, "the optics do not look good on this point—the Service convened the Panel when, despite five out of seven peer reviewers supporting the rationale in the Proposed Rule, the Service mischaracterized this support as 'substantial disagreement' among scientists familiar with the wolverine."⁸⁵

The court proceeded to explain how the Service "similarly mischaracterized" the panel results.⁸⁶ Nine panel members "expressed pessimism for the long-term" future of wolverines in the contiguous United States due to climate change.⁸⁷ The panels' expressions of uncertainty were limited to specific questions about the data's scale of predictions in the two studies, for which uncertainty was reasonable because, as the court notes, finer scale snow modeling had not "been utilized in *any* study with regard to the wolverine."⁸⁸ Furthermore, on average, panel members believed that snow loss would be more severe than the McKelvey study indicated.⁸⁹

81. *Def. of Wildlife*, 176 F. Supp. 3d at 982.

82. *Id.* at 1001–02.

83. *Id.*

84. *Id.* at 991.

85. *Id.* at 1002.

86. *Id.* at 1002–03.

87. *Id.* at 992.

88. *Id.* at 1003 (emphasis in original).

89. *Id.* at 991.

The judge took care to show that his ruling was not in reaction to the agency's impermissible, politically-motivated determination. The judge based his decision, as the Service should have done, solely on the best available science. Lest readers of the opinion, who may include future litigants, lawyers, or members of the public, distrust climate change predictions or modeling generally, the court laid out the reasonable basis for each key assumption and method used by the researchers. The court noted that in instances where estimation or assumptions were required, researchers used a moderate-to-conservative estimate,⁹⁰ as comports with scientific custom. This exhaustive explanation contrasts sharply with the Service's politically motivated about-face and attempts to discredit the two studies upon which they had previously relied. In contrast to the Service's staff opinions, Chief Judge Christensen let the science speak for itself.

B. "Foreseeable Future"

This court's interpretation of "foreseeable future" was nuanced, scientifically appropriate, and favorable for species protection. The court first recalled the purpose of the best available science standard, quoting *Alaska Oil and Gas Ass'n v. Jewell*:⁹¹ "The [ESA] is concerned with protecting the future of [a listed] species, not merely the preservation of existing [members of the species]."⁹² The court then found that, although there was no showing that the wolverine's population is currently declining, climate change will render unsuitable all but thirty-seven percent of the wolverine's historical habitat by the year 2085.⁹³ Some courts have interpreted "foreseeable future" to require a *current* declining population trend, which would exclude species which have not been shown to be currently decreasing in population size but nonetheless require protections to remain viable in the future. Fortunately, this court simply acknowledged that the "best available science" suggests drastic wolverine habitat loss within the next seventy years.

C. *The Threat from Rarity*

The court ruled that the Service also acted arbitrarily and capriciously in failing to consider small population size and lack of genetic diversity as a tandem independent threat to the North American wolverine. The Service "acknowledged inappropriately-low short and long term effective population sizes

90. See, e.g., *id.* at 982 (explaining that the authors of McKelvey (2011) considered an area as potential wolverine denning habitat when data showed that the area retained snow cover through the denning period only one out of seven years).

91. *Alaska Oil & Gas Ass'n v. Jewell*, 815 F.3d 544 (9th Cir. 2016).

92. *Def's. of Wildlife*, 176 F. Supp. 3d at 999.

93. *Id.* at 984.

for the wolverine, as well as a documented loss of genetic diversity with no realistic hope of genetic infusion from Canadian populations.”⁹⁴ However, the Service decided that this did not amount to a threat because there was no data showing “observed adverse effects,”⁹⁵ such as inbreeding depression, on the wolverine due to low genetic diversity. The court found fault with this perceived need for data that was so unlikely to be available due to the “tremendous difficulty associated with studying the wolverine.”⁹⁶ Furthermore, the Service needed to explain why a lack of data would lead to the conclusion that there had been no adverse effects rather than that there had.⁹⁷

D. The Only Loss: “Significant Portion of its Range”

The court granted the Service’s motion for summary judgment on the “significant portion of its range” (“SPR”) issue.⁹⁸ The ESA states that a species is endangered if it “is in danger of extinction throughout all or a significant portion of its range.”⁹⁹ On July 1, 2014, the Service announced a policy of not considering lost historical range within the meaning of “range” in the ESA.¹⁰⁰ This case was consolidated from three cases, each challenging the SPR Policy as applied and one challenging the policy on its face.¹⁰¹ Environmental groups have been fighting this policy since before it was announced because it can result in the Service finding a lack of current threat to a species when a species’ range has already been curtailed.¹⁰² In other words, the plaintiffs argued that the Service’s challenged policy is arbitrary and capricious because it does not take account of how much of a species’ habitat has already been lost.

The District of Montana court applied *Chevron* to the conservation groups’ facial challenge to the Service’s SPR Policy.¹⁰³ Because the parties agreed that the meaning of the term “range” was ambiguous in the ESA, the court considered whether the Service’s interpretation was reasonable.¹⁰⁴ The court ultimately declared the Service’s interpretation permissible under the statute, in part because lost historical range is already supposed to be considered

94. *Id.* at 1006.

95. *Id.*

96. *Id.*

97. *Id.*

98. *Id.* at 999.

99. 16 U.S.C. § 1532(6) (2012).

100. *Def. of Wildlife*, 176 F. Supp. 3d at 1007.

101. *Id.*

102. *See Defs. of Wildlife v. Norton*, 258 F.3d 1136, 1138 (9th Cir. 2001) (challenging the Service’s decision not to list the flat-tailed horned lizard despite its extirpation from thirty-four percent of its historic range).

103. *Def. of Wildlife*, 176 F. Supp. 3d at 1007–08 (citing *Chevron U.S.A. Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 842–43 (1984)).

104. *Id.* at 1008.

within the five listing factors.¹⁰⁵ The court also explained that, whereas the argument that the Service had not adequately articulated a permissible reason not to include lost historical range may have been legitimate before the SPR policy, these challenges¹⁰⁶ are inapplicable now that the Service has spoken through its Policy.¹⁰⁷ This is a disappointing holding for the environmental groups, but the historical range issue will continue to be litigated. At least two pending cases challenge the SPR policy.¹⁰⁸ Fact patterns for other species may provide more effective claims against the policy, and this case certainly doesn't preclude challenges to the SPR policy in other districts.

III. THE LIMITED IMPACT OF *Defenders of Wildlife v. Jewell*

A. *Holding the Service Accountable to Science*

This opinion exemplifies how judges should interpret the ESA's mandate to make listing decisions based on science alone. It is no secret that the Service's actions are often heavily influenced by political pressure.¹⁰⁹ A survey conducted in 2015 by the Union of Concerned Scientists revealed that seventy-three percent of the more than 800 Service scientists surveyed believed political influence at the Service is too high.¹¹⁰ The survey results are especially troubling when

105. See 16 U.S.C. § 1533(a)(1)(A) (2012).

106. See, e.g., Tucson Herpetological Soc'y v. Salazar, 566 F.3d 870 (9th Cir. 2009).

107. *Def's. of Wildlife*, 176 F. Supp. 3d at 1009.

108. *Ctr. for Biological Diversity v. Jewell*, No. 4:14-cv-02506 (D. Ariz. filed Dec. 02, 2014) (challenging the Service's use of the SPR policy to justify its decision not to list the pygmy owl); *Def's. of Wildlife v. Ashe*, No. 1:16-cv-00910 (D.D.C. filed May 12, 2016) (challenging the Service's use of the SPR policy to justify listing the northern long-eared bat as threatened rather than endangered).

109. For a notorious example, see *Biodiversity Legal Found. v. Babbitt*, 943 F. Supp. 23, 25 n.4 (D.D.C. 1996) (describing a field office briefing session in which "least controversial option" was included in the "cons" column of a pros and cons chart for listing the Alexander Archipelago wolf). See also Holly Doremus, *Adaptive Management, the Endangered Species Act, and the Institutional Challenges of "New Age" Environmental Protection*, 41 WASHBURN L.J. 50, 58 (2001) ("Not surprisingly, the story of ESA implementation since 1978 consists generally of the Services exploiting their discretion to the fullest to avoid political controversy. That tendency has been checked only by the ability of citizen suits to force the agencies to perform politically unpalatable duties."); Jimmy Tobias, *The Unbearable Pressures of Endangered Species Protection*, PAC. STANDARD (Apr. 20, 2016), <http://perma.cc/K5EA-RNV5> (citing the wolverine and greater sage grouse as examples of species whose ESA listings have been delayed due to political pressure from Western states and industry interests).

110. *CTR. FOR SCIENCE & DEMOCRACY, UNION OF CONCERNED SCIENTISTS, PROGRESS AND PROBLEMS: GOVERNMENT SCIENTISTS REPORT ON SCIENTIFIC INTEGRITY AT FOUR AGENCIES* 7 (2015), <http://perma.cc/W7ZX-75M7>. This problem is not recent. In 1979, the U.S. General Accounting Office (now called Government Accountability Office) noted in a report that "[t]he Service had not implemented many of the basic policies, procedures, and practices needed to achieve program objectives." GEN. ACCOUNTING OFFICE, *ENDAN-*

considering that ESA listing decisions are not supposed to consider politics at all.¹¹¹ In fact, one of the most common criticisms of the ESA is prohibition against economic balancing at the listing stage.¹¹²

In addition to replacing the scientific record with its own assertions, the Service often claims that evidence was insufficient, or that there is too much scientific uncertainty to justify agency action.¹¹³ Courts often find that the Ser-

GERED SPECIES: A CONTROVERSIAL ISSUE NEEDING RESOLUTION at iv (1979). For example, the report found that nine species that the Service Director had identified two years before as jeopardized by the Columbia Dam project had not been listed. *Id.* The issue of politicized agency decision-making is, of course, not limited to the Service. See *Earth Island Inst. v. Hogarth*, 494 F.3d 757, 763, 769–70 (9th Cir. 2007) (taking the “rare” course of vacating National Oceanic and Atmospheric Administration’s Final Rule regarding dolphin-safe tuna labeling because of the agency’s repeated “intransigence in following Congress’s mandate” that the rule be based solely on the “best scientific evidence available” as required under the Marine Mammal Protection Act, 16 U.S.C. § 1373(a), and the egregious “political meddling” that had affected decision-making). For an argument that wildlife protection science is by nature value-laden and should be acknowledged as such, see generally Holly Doremus, *Listing Decisions Under the Endangered Species Act: Why Better Science Isn’t Always Better Policy*, 75 WASH. U. L.Q. 1029 (1997).

111. See *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 177 (1978) (“The dominant theme pervading all Congressional discussion of the proposed [Endangered Species Act of 1973] was the overriding need to *devote whatever effort and resources were necessary* to avoid further diminution of national and worldwide wildlife resources.”) (brackets and emphasis in original).
112. See Jon Souder, *Chasing Armadillos Down Yellow Lines: Economics and the Endangered Species Act*, 33 NAT. RESOURCES J. 1095, 1108 (1993) (discussing this criticism and citing several amendments that have been proposed to allow balancing).
113. See, e.g., *Def. of Wildlife v. Babbitt*, 958 F. Supp. 670, 680 (D.D.C. 1997) (holding that the Service’s decision not to list the Canada lynx was arbitrary and capricious because the Service applied a standard of “conclusive evidence.”). The court stated, “Defendants have gone to great lengths to argue that there is a lack of ‘scientific certainty’ as to various aspects of the Lynx’s status.” *Id.* at 681. An additional ground for the holding was that “the agency made a number of unsupported statements which contained significant factual errors contradicted by overwhelming record evidence.” *Id.* at 682. Finally, the holding was also based on the court’s finding that the Service has “reject[ed] the views of its own experts that the Lynx satisfied four out of the five statutory criteria for listing a species as endangered or threatened.” *Id.* at 682–83. For commentary on the political factors in the Canada lynx case, see Ivan J. Lieben, *Political Influences on USFWS Listing Decisions Under the ESA: Time to Rethink Priorities*, 27 ENVTL. L. 1323, 1361–63 (1997) (“The administrative structure of the USFWS has enabled the administrators in Washington, D.C. to modify listing decisions in order to fit their needs. An analysis of the process of a USFWS listing decision gives insight into the top-down nature of these possible political influences. . . . [T]his pattern is easy to recognize in the listing arena because the final decision to not list a species often directly counters the USFWS own agency record created by the local and regional offices. . . . It appears that because the centralized bureaucracy could not find easy loopholes to legitimately avoid the listing decision of the lynx, it relied on outright illegal methods. The Director concluded that the proposed rule ‘did not provide any conclusive evidence of the biological vulnerability or real threats to the species[.]’ . . . This provides a stark example of how the centralized leadership of the USFWS can misdirect the listing activities of an agency which

vice improperly applied a more stringent standard than the best available science.¹¹⁴ Although this is not a novel holding, it is nonetheless important for courts to consistently hold the Service accountable to the correct standard: best available science and no more. This means that the Service may not decline to list a species due to scientific uncertainty and gaps in available data. Instead, the Service must make a determination based on the incomplete information available.

The Service's decision not to list the wolverine was troubling because it would have raised the bar for what science is needed to determine whether a species is threatened or endangered. If the court had upheld the Service's withdrawal of its proposed listing, the implication would have been that without conclusive evidence of particular threats, the Service has the discretion to go either way on a listing determination.

It is rare for a court to so clearly model proper review of scientific sources and explicitly recognize areas of inherent scientific uncertainty. Courts do not often go through such meticulous scientific reasoning. Because future preservation will always involve, to some extent, predicting the future threats to a species, the Service must make decisions in the present that reflect uncertainty about the future. For that reason, the meaning of "foreseeable future" under the ESA is best understood in conjunction with the "best available science" standard.

B. Determining "Foreseeable Future" Through the "Best Available Science"

This case demonstrates that climate change predictions should be considered within ESA listing decisions by situating them firmly within the "foreseeable future" that is predicted by the "best available science." Recall that the difference between an endangered species and a threatened species is that a threatened species "is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."¹¹⁵ Therefore, the determination of whether a species that is not currently endangered is nonetheless threatened depends on the meaning of the word "likely" and the phrase "foreseeable future." How certain must an agency be about its findings to avoid being arbitrary and capricious? The phrase "foreseeable future" is unde-

should be making listing decisions based on "science, not politics."). See also *infra* note 131 (discussing how the Service has erred similarly at the ninety-day finding stage).

114. See, e.g., *W. Watersheds Project v. Norton*, No. CV 06-00127-S-EJL, 2007 WL 2827375, at *6 (D. Idaho Sept. 26, 2007) (holding that the Service improperly applied a higher standard than the ESA requires at the ninety-day finding stage of the listing process); *Defs. of Wildlife v. Babbitt*, 958 F. Supp. 670, 679 (D.D.C. 1997) (holding that the Service applied the wrong legal standard, "conclusive evidence," in its decision not to list the Canada lynx as threatened).

115. 16 U.S.C. § 1532(20) (2012).

fined in the ESA. “Foreseeable” is a word commonly used in law, but far less commonly in science.¹¹⁶ This case appropriately grounds the interpretation of “foreseeable future” in the “best available science” standard.

More broadly, this case models more science-friendly interpretations of the ESA and may empower other judges to engage more directly with the science. Although this is a district court case, ESA listing briefs cite other circuits and districts because of the relatively small number of ESA cases and recurring parties. The Service, as a repeat player, may be discouraged from offering the kind of illogical rationales for agency actions given in this case.

C. *Acknowledging the Threat of Rarity*

The court quoted the Service’s Proposed Rule in finding that the Service failed to consider small effective population sizes and low genetic diversity as a “tandem independent threat”¹¹⁷: “[o]ther threats are minor in comparison to the driving primary threat of climate change. . . . they could become significant when working in concert with climate change if they further suppress an already stressed population.”¹¹⁸ Habitat loss, through deforestation or as a result of climate change, is the most significant threat to endangered species.¹¹⁹ Past habitat loss and fragmentation has, for many species, led to current small population size and low genetic diversity, greatly increasing the risk of extirpations and extinctions. But so many species are plagued by small population size and low genetic diversity that the Service fears the floodgates will open if the threat of rarity is acknowledged as an independent threat to species’ survival.

Habitat loss has led directly to many species’ small population size, as affected species must compete for sparser resources and often suboptimal habitat.¹²⁰ When habitat is destroyed, species end up surviving in patches surrounded by unsuitable habitat into which individuals do not disperse.¹²¹ Populations that previously interbred as part of a metapopulation become discrete.¹²² Gene flow is rarer or non-existent, and the isolated patches are lower in genetic diversity because their gene pool is smaller and more stagnant.¹²³

116. Central ESA terms lack clear scientific or biological meaning. *See, e.g.*, Doremus, *supra* note 110 (“The words ‘endangered’ and ‘threatened’ are not scientific terms of art; they have no generally accepted biological meaning.”).

117. *Def. of Wildlife v. Jewell*, 176 F. Supp. 3d 975, 1005–06 (D. Mont. 2016).

118. *Id.* at 985.

119. *See Impact of Habitat Loss on Species*, WORLD WILDLIFE FUND GLOBAL (2016), <http://perma.cc/8N7J-7T5Q>.

120. *See* H. Resit Akçakaya, Gus Mills & C. Patrick Doncaster, *The Role of Metapopulations in Conservation*, in *KEY TOPICS IN CONSERVATION BIOLOGY* 64, 65–67 (David W. Macdonald & Katrina Service, eds., 2006), <http://perma.cc/BC5G-DYFU>.

121. *Id.*

122. *Id.*

123. *Id.*

If species are eligible for listing through the threat of rarity alone, without further threats from humans, the Service's resources will quickly be overwhelmed. The Service has consequently declined to list species that are threatened predominantly due to rarity. The Service makes this clear in a case involving a beetle threatened with extinction by its rareness:

While we recognize that many of the species contained within the Nature serve database have limited distribution or small population size, limited distribution and population size were not identified as threats faced by any of the 165 species in the petition, including all available references and the Nature serve species files and these two factors alone without elaboration may not be substantial information that may warrant listing under the Act.¹²⁴

The Service has also avoided this problem through its SPR Policy to ignore species' lost historical range. Take the example of the rare Patagonia-eyed Silkmoth, which lives only in three isolated patches: one patch is in Arizona, while the other two patches are in Mexico. Because the moth is unable to fly very far, the most likely scientific explanation is that this rare moth formerly lived in a metapopulation that spanned the distance between the three extant populations. Because the Service disregarded this scientific explanation as speculation and did not consider small population size and low genetic diversity a sufficient threat without a showing of declining status, the Service returned a negative ninety-day finding for the petition to list this moth as endangered.¹²⁵ The Service similarly refused to consider that the pygmy rabbit had likely previously lived in areas that are no longer suitable habitat.¹²⁶ Because the threat from rarity is causally connected to loss of historical range, however, the court has, in some sense, re-inserted the issue of historical range back into the Service's decision-making. Thus, even though the Service's "lost historical range" rule was upheld, its negative effects are mitigated somewhat by the court's consideration of threats based on rarity. In sum, the holding that rarity alone can be a threat to a species, without a showing of declining status or other threats, clarifies the more appropriate—and more species-favorable—standard.

124. *WildEarth Guardians v. Salazar*, No. 10-CV-00091-WYD, 2011 WL 4102283, at *6 (D. Colo. Sept. 14, 2011).

125. Ninety-Day Finding on a Petition to List the Patagonia Eyed Silkmoth (*Automeris patagoniensis*) as an Endangered or Threatened Species Under the Endangered Species Act (hereinafter "Ninety-Day Finding"), Petition Review Form, Federal Docket No. FWS-HQ-ES-2016-0036 1, 8 (Feb. 24, 2016); see also *WildEarth Guardians*, 2011 WL 4102283, at *6; Ninety-Day Finding on Petition—Patagonia Eyed Silkmoth, 50 C.F.R. pt. 17 (2016).

126. *W. Watersheds Project v. Norton*, No. CV 06-00127SEJL, 2007 WL 2827375, at *6-7 (D. Idaho Sept. 26, 2007).

D. *What This Case Does Not Do*

There are many possible positive impacts that conservationists would like to see but probably will not. This case will probably not lead to increased protections for climate change-vulnerable species, and not only because this is a district court case. Even though *Defenders of Wildlife v. Jewell* makes clear that the best-available standard for listing is a lower bar than the Service's routine practice, this precedent is unlikely to lead to significantly more ESA listings.

There are structural reasons that hold the ESA back from meeting its drafters' most optimistic goals.¹²⁷ Species-favorable rulings may lead to an increase in petitions, but this may, paradoxically, result in fewer actual listings because of the litigation expenses that accompany controversial listings.¹²⁸ Funding for the Service is controlled politically, and resources are tight. Resources are unlikely to significantly increase, especially because the Service has, at times, actually lobbied Congress to decrease appropriations for listing.¹²⁹ The Service can also spend much of its resource-management budget on litigation costs for citizen suits. Service Director Dan Ashe stated that litigation consumed more than seventy-five percent of the Service's resource-management budget in 2011.¹³⁰

Furthermore, enforcing the best-available science standard at the proposed rule stage could result in increased pressure to decline more listing petitions at the ninety-day stage¹³¹ or to list more species as "warranted but precluded,"¹³²

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127. Despite the oft-quoted Supreme Court declaration in *Tennessee Valley Authority v. Hill* of Congress's grand mission ("[T]he Endangered Species Act of 1973 represented the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1978)), many have argued that the ESA has been inefficient and often ineffective at protecting species. *See, e.g.*, John Charles Kunich, *The Fallacy of Deathbed Conservation Under the Endangered Species Act*, 24 ENVTL. L. 501 (1994).
128. Candee Wilde, *Evaluating the Endangered Species Act: Trends in Mega-Petitions, Judicial Review, and Budget Constraints Reveal a Costly Dilemma for Species Conservation*, 25 VILL. ENVTL. L.J. 307, 320 (2014) (arguing that citizen petitions may harm species by forcing the Service to spend its limited budget on litigation).
129. Federico Cheever, *Butterflies, Cave Spiders, Milk-Vetch, Bunchgrass, Sedges, Lilies, Checker-Mallows and Why the Prohibition Against Judicial Balancing of Harm Under the Endangered Species Act Is a Good Idea*, 22 WM. & MARY ENVTL. L. & POL'Y REV. 313, 348 (1998).
130. Rep. Doc Hastings, *Time to Improve the Endangered Species Act*, WASH. TIMES (May 18, 2012), <https://perma.cc/N6AA-APGC>.
131. The ninety-day finding is a preliminary, "threshold determination" and was intended to be an easier standard than the best-available science standard. *See* Humane Soc'y of the U.S. v. Pritzker, 75 F. Supp. 3d 1, 15 (D.D.C. 2014) (quoting *Colo. River Cutthroat Trout v. Kempthorne*, 448 F. Supp. 2d 170, 176 (D.D.C. 2006)); *see also* *In re Polar Bear Endangered Species Act Listing and 4(d) Rule Litig.*, 794 F. Supp. 2d 65, 106 (D.D.C. 2011) ("[A]n agency need not stop in its tracks when it lacks sufficient information.") (quoting *Oceana v. Evans*, 384 F. Supp. 2d 203, 219 (D.D.C. 2005)); *Ctr. for Biological Diversity v. Kempthorne*, No. CV 07-0038-PHX-MHM, 2008 WL 659822, at *8 (D. Ariz. Mar. 6,

both of which would delay protections.¹³³ Courts have held that the Service has discretion in how it prioritizes species for proposed listings. Although the Service assigns species a Listing Priority Number (“LPN”), ranging from the highest priority of one to the lowest priority of twelve, the Service is not required to list species with the highest LPNs first.¹³⁴ This means that the Service may choose to prioritize species for which there is no political pressure against listing, even though other species may need protections more urgently.¹³⁵

Does this case at least increase the likelihood of ESA listing for other vulnerable species? Yes, but its precedential value should not be overstated. The court noted that the particular characteristics of a species can and should affect the Service’s evidentiary standards: “Not only is the Service’s demand for con-

2008) (holding that the ninety-day finding is “a cursory review to determine whether a petition contains information that warrants a more in-depth review”); *Moden v. U.S. Fish & Wildlife Serv.*, 281 F. Supp. 2d 1193, 1203–04 (D. Or. 2003) (holding that the substantial information standard is “non-stringent” and “does not require conclusive evidence.”). However, the Service’s application of the best-available science at the ninety-day finding stage has been the subject of much litigation. Although it is inappropriate under the ESA to require data that is not available, the Service has routinely denied petitions on these grounds rather than considering whether a reasonable person would inquire further into the species’s status. *See, e.g., WildEarth Guardians v. Salazar*, 30 F. Supp. 3d 1126, 1130–31 (D.N.M. 2011). In its ninety-day negative finding for the many-flowered unicorn plant, the Service asserted that petitioners had failed to provide substantial information supporting the listing. *Id.* at 1131. Although the petition contained information on the species’s range, stated that the number of “total historical collections” was only four, and that “the plant hasn’t been seen since 1967,” the Service asserted that the petition was still lacking. *Id.* at 1130–31. The Service stated that “[p]opulation size or abundance, if addressed, was rarely quantified, and the [NatureServe] database instead used descriptors such as large, small, or numerous.” *Id.* at 1131.

132. The Service is allowed to consider cost and resources in prioritizing listings, resulting in some high-LPN species receiving a “warranted but precluded” finding. *Wildwest Inst. v. Ashe*, 15 F. Supp. 3d 1057, 1071 (D. Mont. 2014).
133. *See* Oliver A. Houck, *The Endangered Species Act and Its Implementation by the U.S. Departments of Interior and Commerce*, 64 U. COLO. L. REV. 277, 285 (1993) (describing the “warranted but precluded designation” as a “black hole”). Political factors have been shown to contribute to delays. Amy Whritenour Ando, *Waiting to Be Protected Under the Endangered Species Act: The Political Economy of Regulatory Delay*, 42 J.L. & ECON. 29, 52 (1999) (“[P]etition and comment submissions, hearing requests, and the presence of local legislators with nonmoderate environmental voting records on ESA-reauthorization subcommittees . . . have statistically and qualitatively significant effects on the time species spend waiting in one stage of the process or the other, even though the Service does not answer directly to the public and the Act specifies that the listing process studied here ought to be immune to all but scientific considerations.”).
134. *See Wildwest Inst.*, 15 F. Supp. 3d at 1065 (“[N]either the ESA nor the guidelines require the Service to list species in strict LPN order. The statute only requires the Service to develop guidelines to ‘assist in the identification of species that should receive priority review.’” (citing 16 U.S.C. § 1533(h)(3)).
135. *See* Lieben, *supra* note 113, at 1346–50 (asserting that the Service uses the “vague” priority system it promulgated in 1983 “to avoid listing politically charged species even when the weight of biological data supports such an action”).

clusiveness contrary to the law . . . but it is a particularly high bar for the wolverine. . . . In light of the tremendous difficulty associated with studying the wolverine . . . such conclusory treatment based on a dearth of information is impermissible under the APA and ESA.”¹³⁶ This acknowledgement was helpful in the wolverine’s case, but it also means that the same standard may not be applied to less elusive species.

Another way that the wolverine differs from most threatened or endangered species is that the wolverine is popular and well-known enough among the animal-loving public to have benefitted from decades of support from many different conservation groups.¹³⁷ Most endangered species are not so lucky.¹³⁸ In addition, the polar and colder regions show climate change much more starkly, making it easier to prove a threat to animals that live in colder regions. Even among other charismatic megafauna who live in the coldest regions, the wolverine’s obligate relationship to snow is uncommonly clear and direct: wolverines do not simply prefer snow-covered areas for denning—they den exclusively in snow-covered areas. In addition, lack of snow directly limits the wolverine’s reproductive fitness, resulting in an easy inference of population- and species-level threats. Other species might show less perceptible harm from a changing climate, such as increased stress and reduced vigor, which are also more difficult to tie to effects on the species’ total population size.

For most species, it will be more difficult to show the direct negative impacts of climate change on the population. For example, consider the plight of the Arctic subspecies of ringed seal, another cold-weather species. One would expect that, if polar bears and wolverines made the cut, the Arctic ringed seal would, as well. But a district court granted summary judgment to a challenge to a proposed rule by the National Marine Fisheries Service (“NMFS”) to list the Arctic subspecies of ringed seal as threatened, despite climate change’s threat to

136. See *Def. of Wildlife v. Jewell*, 176 F. Supp. 3d 975, 1005–06 (D. Mont. 2016) (citations omitted).

137. See *supra* note 58. Although the ESA prohibits the Service from considering a species’s popularity in making a listing determination, a study that included all of the North American vertebrate species that had been listed by March 1993 found that, of species with listing petitions, large size and being more closely related to humans or perceived as “higher forms of life” made listing more likely. Andrew Metrick & Martin Weitzman, *Patterns of Behavior in Endangered Species Preservation*, 72 LAND ECON. 1, 14–15 (1996).

138. See Cheever, *supra* note 129, at 349–51 (discussing thirteen species with lack of “apparent value” or “postage stamp” potential and how they are unlikely to be protected if balancing takes place); Shannon Petersen, *Congress and Charismatic Megafauna: A Legislative History of the Endangered Species Act*, 29 ENVTL. L. 463, 490–91 (1999) (stating that listing has spurred recovery for only about half of the listed species, but nonetheless arguing that the Act has been successful by helping to “save those species most representative of our national heritage and dearest to the American people”).

the seal.¹³⁹ The NMFS was unable to produce reliable data of the impact the loss of sea ice would have on the seal. Because the seal population is currently healthy, the court found it arbitrary and capricious to list Arctic ringed seals as a threatened species based on predictions between eighty and one hundred years into the future. Similarly, in 2010, the District Court for the Northern District of California upheld the NMFS's determination that listing was not warranted for the ribbon seal, an Arctic species threatened by sea ice loss and ocean acidification.¹⁴⁰ The court deferred to the agency's treatment of "foreseeable future" and scientific uncertainty, rejecting petitioners' arguments that the "foreseeable future" should be considered to be one hundred years.¹⁴¹

The Service will continue to determine "foreseeable future" on a case-by-case basis, and courts' analysis of the standard will remain fact-specific.¹⁴² That is as it should be. Although a single standard for "foreseeable future" would be easier to apply and invoke fewer worries that federal agencies would use their discretion to make political compromises, no single standard would satisfy the best available science standard. Because species differ in life history traits, such as generation length, "foreseeable future" for one species could be much longer or shorter than for another species. The "foreseeable future" can also depend on the types of threats being considered.¹⁴³ As a result, case-specific applications of "foreseeable future," whether favorable to species protections or not, will have limited precedential value.

Notwithstanding the favorable ruling in this case, even *Gulo gulo luscus* may remain unprotected. The foremost reason is that, while listing may protect the wolverine from some threats, it is unclear how listing will protect against climate change. The Service's hesitation in considering climate change impacts is not legally justifiable, but it does make some sense in terms of resource allocation because the goal for each listed species is to recover it to the point "at which the measures provided pursuant to [the Act] are no longer necessary."¹⁴⁴

139. *Alaska Oil & Gas Assoc. v. Nat'l Marine Fisheries Serv.*, No. 4:14-cv-00029-RRB, 2016 WL 1125744, at *14–15 (D. Alaska Mar. 17, 2016).

140. *Ctr. for Biological Diversity v. Lubchenko*, 758 F. Supp. 2d 945, 970–76 (N.D. Cal. 2010).

141. *Id.* at 967–68. *See also* Kearney, *supra* note 15, at 553 ("The court noted the NMFS compared the ribbon seal to the polar bear's recent ESA listing, specifically where the NMFS found 'ocean acidification, which is a result of increased carbon dioxide in the atmosphere . . . may impact ribbon seal survival and recruitment . . . but that the nature and timing of such impacts are . . . extremely uncertain.' Furthermore, 'anticipated . . . habitat changes resulting from ocean warming, and loss of sea ice, have the potential for negative impacts, but these impacts are not well understood.'" (quoting *Lubchenko*, 758 F. Supp. 2d at 952)).

142. Telephone Interview with Mike Senatore, Vice President, Conservation Law, Defenders of Wildlife (Oct. 4, 2016). Mr. Senatore was Lead Attorney on *Defenders of Wildlife v. Jewell*, 176 F. Supp. 3d 975 (D. Mont. 2016).

143. *W. Watersheds Project v. Foss*, No. CV 04-168-MHW, 2005 WL 2002473, at *16 (D. Idaho Aug. 19, 2005).

144. 16 U.S.C. § 1532(3) (2012).

Even after a drawn-out listing process, recovery plans may not be designed or implemented.¹⁴⁵ Several years can pass before the Service formulates a recovery plan, due to the great number of previously listed species in the backlog waiting for protections. Once a recovery plan is drafted, it is considered only a discretionary guide; the Service is not legally bound to follow it. Similar backlogs and litigation result from agency discretion in prioritizing the designation of critical habitat for endangered and threatened species.¹⁴⁶ To make prospects for protection even worse, once a species is listed as threatened, the Service can pass a species-specific 4(d) rule relaxing takings prohibitions¹⁴⁷ in order to allow for industry or development interests.¹⁴⁸

Even given these challenges, the efforts to list the wolverine and other species vulnerable to climate change have not been wasted. As the Service admitted in its Proposed Rule, listing “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.”¹⁴⁹ Furthermore, even though the wolverine may be listed based on the threat of climate change, endangered or threatened status can protect it against other types of threats. These protec-

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145. See Eric Helmy, *Teeth for a Paper Tiger: Redressing the Deficiencies of the Recovery Provisions of the Endangered Species Act*, 30 ENVTL. L. 843, 844–45 (2000) (“The federal Endangered Species Act (ESA) has long been a powerful weapon in the arsenal of species protection, but has never lived up to its full potential. Despite the potency of its prohibitions, the ESA has borne disappointment for conservationists because very few species have come back from the brink of extinction on its watch. . . . The ESA’s species recovery provisions in section 4(f) are inadequate as written and implemented. . . . Under section 4(f), the Secretary does not have to make or follow deadlines for the promulgation and implementation of recovery plans. Additionally, the Secretary cannot be compelled to implement recovery plans under section 4(f).”).
146. See, e.g., *Conservation Council for Hawai’i v. Babbitt*, 24 F. Supp. 2d 1074, 1079 (D. Haw. 1998) (holding that, in considering critical habitat designation for 245 endangered or threatened Hawaiian plant species, the Service was not required to begin with the “more than 50 species threatened by military activity and several plants threatened by federal infrastructure projects”).
147. The ESA does not itself prohibit take of threatened species. Instead, it authorizes the Secretary of the Interior to issue regulations to protect threatened species: “Whenever any species is listed as a threatened species . . . , the Secretary shall issue such regulations as he deems necessary and advisable to provide for the conservation of such species.” 16 U.S.C. § 1533(d). In 1978, the Service issued a general 4(d) rule prohibiting take of threatened species by default. 50 C.F.R. § 17.31(a). The Service may issue special rules to modify the general rule to allow take of specific threatened species. 50 C.F.R. § 17.31(c).
148. For an argument that section 4(d) has become “a vehicle to authorize takes for threatened species,” see Michael C. Blumm & Kya B. Marienfeld, *Endangered Species Act Listings and Climate Change: Avoiding the Elephant in the Room*, 20 ANIMAL L. 277, 307–08 (2014). See *id.* more generally for a discussion of how species-specific 4(d) rules limit the ESA’s potential for protecting species threatened by climate change, including the wolverine.
149. *Defs. of Wildlife v. Jewell*, 176 F. Supp. 3d 975, 986 (D. Mont. 2016).

tions may in practice protect other species in the same habitat and geographical areas.¹⁵⁰

CONCLUSION

The Service has decided not to appeal,¹⁵¹ and instead has reopened a listing proposal,¹⁵² which is probably a smart decision. The likelihood that this ruling would have been reversed seems low, in part because the wolverine's obligate relationship to snow is particularly well-documented by two sophisticated modeling studies, and in part because the district court communicated the scientific background so clearly that it would have been difficult for an appellate court to ignore. In general, a district court case about a listing petition may not have much precedential value beyond the species at issue. But this case may allow other judges a pathway to question agency decision-making that is motivated by politics rather than science.¹⁵³ It represents not only a victory for the inclusion of climate change in the listing process, but also for more science-friendly interpretations of some of the ESA's key terms, including "best available science" and "foreseeable future."

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150. Under the "umbrella species" concept, as it is called, some non-listed organisms end up under the umbrella protections of a listed species. See Bruce G. Marcot & Curtis H. Flather, *Species-Level Strategies for Conserving Rare or Little-Known Species*, in CONSERVATION OF RARE OR LITTLE-KNOWN SPECIES: BIOLOGICAL, SOCIAL, AND ECONOMIC CONSIDERATIONS 125, 136 (Martin G. Raphael & Randy Molina, eds., 2007), <https://perma.cc/YLZ8-KSH6> (describing the use of a threatened butterfly as an umbrella species for a grassland ecosystem and the use of the northern spotted owl as a strategy to protect old-growth forests in the Pacific Northwest).
151. The parties filed cross-appeals in June 2016. *Defs. of Wildlife v. Jewell*, 176 F. Supp. 3d 975, *appeal docketed*, No. 16-35509 (9th Cir. Jun. 21, 2016). However, the Service withdrew its protective sixty-day notice of appeal. See Order, *Defs. of Wildlife v. Jewell*, No. 16-35509 (9th Cir. Oct. 7, 2016) (order granting voluntary dismissal).
152. Endangered and Threatened Wildlife and Plants; Proposed Rule for the North American Wolverine, 81 Fed. Reg. 71670, 71670–71 (Oct. 18, 2016) (to be codified at 50 C.F.R. pt. 17), <https://perma.cc/Q5NR-T34Y>. See also Juan Carlos Rodriguez, *Wolverines Getting Eyed Again for Threatened Status*, LAW360 (Oct. 17, 2016), <https://perma.cc/8EEX-GDVC>.
153. We may get a chance to find out soon. *Center For Biological Diversity et al. v. Fish and Wildlife Services of the United States et al.*, case number 4:16-cv-06040, was filed on October 19, 2016 in the U.S. District Court for the Northern District of California. This is another challenge to the Service's withdrawal of a proposed threatened listing, this one for the Pacific fisher. Earthjustice lawyers have drawn a parallel to the wolverine case: "In an Earthjustice statement announcing the lawsuit, the advocacy group said the Pacific fisher decision was the latest in a series of 'politically motivated' decisions by the FWS, including those not to protect the coastal marten and the wolverine." Stan Parker, *Enviros Slam FWS About-Face on Pacific Fisher ESA Listing*, LAW360 (Oct. 19, 2016), <https://perma.cc/7UHV-447V>.