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**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MONTANA
MISSOULA DIVISION**

DEFENDERS OF WILDLIFE, et al.,)

Plaintiffs,)

) Case No. 9:14-cv-246-DLC
)

v.
SALLY JEWELL, in her official
capacity as Secretary of the Interior,
et al.,

Defendants,

and

IDAHO FARM BUREAU
FEDERATION, et al.,

Defendant-Intervenors.

) (Consolidated with Case Nos.
)
) 9:14-cv-247-DLC and
) 9:14-cv-250-DLC)
)
) **PLAINTIFFS’ MEMORANDUM**
) **OF POINTS AND AUTHORITIES**
) **IN SUPPORT OF MOTION**
) **FOR SUMMARY JUDGMENT**
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INTRODUCTION

This case concerns the continued existence in the lower-48 United States of an icon of the snowy northern wilderness—the North American wolverine. This largest terrestrial member of the weasel family combines legendary toughness with a remarkable capacity to traverse rugged country. Although the biggest males weigh only about 40 pounds, wolverines “never back down, not even from the biggest grizzly, and least of all from a mountain.” Douglas H. Chadwick, The Wolverine Way 47 (2010). Not surprisingly, any encounter with this extraordinary species represents a “Holy Grail” moment for wilderness travelers. The pioneering American wildlife biologist Olaus Murie described coming upon tracks of a wolverine in an early-winter snowfall. “Merely seeing those tracks in the snow made it a red-letter day,” he wrote, adding, “I wonder if there is another inhabitant of northern wilderness that so excites the imagination.” Olaus Murie, A Field Guide to Animal Tracks 66-68 (1954).

Today, however, the opportunity for such memorable encounters is threatened. The remaining wolverines in the contiguous United States are estimated to number only 250-300 individuals primarily occupying the northern Rockies and north Cascades. In these areas, wolverines are widely scattered across mountaintop habitat fragments and are frequently isolated from other members of their species. These circumstances leave wolverines vulnerable to localized

extinctions and a downward spiral of inbreeding. Wolverines seeking to cross between habitat patches must run a gauntlet of human developments and dodge a lethal threat from traps set for other species in Idaho and Wyoming and, in Montana, for the wolverine itself. And a growing body of scientific information indicates that a warming climate will eliminate deep, persistent snowpack—a defining feature of wolverine habitat—across much of the species’ remaining range in the lower-48 states.

Congress enacted the Endangered Species Act (“ESA”), 16 U.S.C. § 1531 et seq., to safeguard our nation’s natural heritage by responding to such threats. The ESA affords unparalleled protections and recovery mechanisms for imperiled wildlife, but its provisions are triggered only when a federal wildlife agency such as the U.S. Fish and Wildlife Service (“FWS”) lists a species as “endangered” or “threatened.” See generally id. § 1533. An “endangered species” is “any species which is in danger of extinction throughout all or a significant portion of its range,” while a “threatened species” is one that is “likely to become an endangered species within the foreseeable future.” Id. § 1532(6), (20). FWS must determine whether a species is “endangered” or “threatened” by analyzing five listing factors encompassing habitat destruction, excessive hunting and trapping, and other threats, and must make such determinations “solely on the basis of the best scientific and commercial data available.” Id. § 1533(a)(1), (b)(1)(A).

Unfortunately, in the case of the wolverine, FWS has subverted this statutory process through more than a decade of delay and irrational decision-making that has been overcome only by judicial decree—first to require FWS to respond to a July 11, 2000 petition requesting that FWS list the wolverine under the ESA, Order, Defenders of Wildlife v. Norton, No. CV 02-165-M-DWM (D. Mont. July 30, 2003); then to reverse and remand two successive arbitrary and unlawful FWS petition findings, Order, Defenders of Wildlife v. Kempthorne, No. CV 05-99-DWM (D. Mont. Sept. 29, 2006); Order, Defenders of Wildlife v. Salazar, No. CV 08-139-M-DWM (D. Mont. June 15, 2009); and most recently to require FWS to reach a final listing determination regarding the wolverine, Order, In re ESA Section 4 Deadline Litigation, Misc. Action No. 10-377 (EGS) (D.D.C. Sept. 9, 2011).

Now judicial intervention is once again needed to enforce ESA requirements for the wolverine. On August 13, 2014, FWS published a decision that the wolverine distinct population segment (“DPS”) occupying the lower-48 states “does not meet the definition of an endangered or a threatened species.” 79 Fed. Reg. 47,522, 47,543 (Aug. 13, 2014).¹ This decision represented an eleventh-hour reversal by FWS from its February 4, 2013 proposal to list the wolverine DPS as a

¹ A “species” that may be listed under the ESA includes “any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.” 16 U.S.C. § 1532(16).

threatened species due to likely “habitat loss caused by climate change” in conjunction with trapping mortality and genetic deterioration resulting from the wolverine’s extremely small, fragmented population. 78 Fed. Reg. 7864, 7886 (Feb. 4, 2013). FWS subjected that listing proposal to peer review by seven of the world’s leading wolverine biologists, five of whom supported FWS’s conclusions. 79 Fed. Reg. at 47,523. Nevertheless, in response to objections by two peer reviewers, along with state wildlife agencies from the northern Rockies who uniformly opposed the listing, FWS in April 2014 convened a panel of nine experts on wolverines, climate change, habitat modeling, and population ecology to assess the agency’s proposal. Although panelists’ opinions diverged on some points, they strongly supported FWS’s conclusion that wolverines require deep snow for reproductive denning and determined that FWS had, if anything, underestimated likely loss of deep snow due to climate change over this century. See AR:FR-14020², 14022-23. Further, “nine out of nine panelists expressed pessimism for the long-term (roughly end-of-century) future of wolverines in the contiguous US because of the effects of climate change on habitat.” AR:FR-14024.

Summarizing these findings and other evidence, the Assistant Regional Director of FWS’s Denver-based Mountain-Prairie Region in mid-May 2014

² “AR” references the administrative record certified by FWS. Plaintiffs cite the record by document category and page number.

authored a memo to the Regional Director recommending that the agency proceed with the proposed wolverine listing. See AR:FR-5605, 5614. This memo reflected the unified position of FWS's Montana Ecological Services Office biologists who developed the listing proposal as well as regional Ecological Services staff.

However, on May 30, 2014, FWS's Mountain-Prairie Regional Director responded with a memo rejecting her own biologists' position and outlining her recommendation that the agency withdraw the wolverine listing proposal. See AR:FR-5357, 5372. The Regional Director did not identify any scientific information that FWS's proposed rule, peer review, or science panel had overlooked. Instead, the Regional Director sought to re-interpret the available science in a manner consistent with the objections raised by state wildlife officials. See AR:FR-2722 (July 7, 2014 Memo from FWS Dir.: "The State of Montana is opposed to listing and many of the arguments used in the withdrawal originated with them."). In so doing, however, the Regional Director engaged in speculation about the wolverine's future prospects that defies the best available science. When FWS adopted the Regional Director's recommendation as its final withdrawal decision on August 13, 2014, it imported this same failing into its published decision.

Plaintiffs Defenders of Wildlife in No. CV-14-246-M-DLC and Center for Biological Diversity, et al., in No. CV-14-247-DLC now turn to this Court to

enforce the ESA by vacating FWS's arbitrary withdrawal decision and remanding this matter to FWS for a new, lawful listing decision before it is too late for the wolverine.³

ARGUMENT

I. STANDARD OF REVIEW

Plaintiffs bring this case under the ESA's citizen-suit provision, 16 U.S.C. § 1540(g), and the Administrative Procedure Act, 5 U.S.C. § 706, which provides the standard of review. See Nat'l Ass'n of Home Builders v. Norton, 340 F.3d 835, 840-41 (9th Cir. 2003). Under this standard, the Court's core inquiry is "whether there is a rational connection between the facts found and the choices made by the FWS and whether it has committed a clear error of judgment." Oregon Natural Res. Council v. Allen, 476 F.3d 1031, 1036 (9th Cir. 2007). Moreover, even where an agency with "technical expertise" acts "within its area of competence," a reviewing court "need not defer to the agency when the agency's decision is without substantial basis in fact, and there must be a rational connection between the facts found and the determinations made." Ariz. Cattle Growers' Ass'n v. Salazar, 606 F.3d 1160, 1163 (9th Cir. 2010). In particular, under the ESA, "failure by the agency to utilize the best available science is arbitrary and

³ The full factual background of this case is set forth in Plaintiffs' Statement of Undisputed Facts.

capricious.” Consol. Delta Smelt Cases, 717 F. Supp. 2d 1021, 1060 (E.D. Cal. 2010).

II. FWS ARBITRARILY DISMISSED THE GENETIC THREAT POSED BY THE WOLVERINE’S EXTREMELY SMALL, FRAGMENTED POPULATION

At the outset, FWS’s withdrawal decision violated the ESA because the agency arbitrarily dismissed the ongoing threat of genetic deterioration arising from the wolverine’s extremely small and fragmented population in the lower-48 states. This threat by itself warrants listing of the DPS as a threatened species but FWS irrationally dismissed it.

As FWS documented, wolverines in the lower-48 states exist as a “metapopulation,” meaning “a population composed of a network of semi-isolated subpopulations, each occupying a suitable patch of habitat in a landscape of otherwise unsuitable habitat.” 78 Fed. Reg. at 7867 (proposed listing). While some such subpopulations occupy relatively large “habitat islands,” such as Glacier and Yellowstone national parks and surrounding public lands, others occupy small and isolated habitats, such as the mountain ranges of southwest Montana. Id. at 7876. Some such small subpopulations consist of “less than ten individuals.” Id. at 7867. “These subpopulations are essentially family groups, which require connectivity with other groups for genetic and possibly demographic enrichment.” Id. at 7876.

These circumstances threaten the wolverine DPS with loss of genetic viability. “Inbreeding and consequent loss of genetic diversity have occurred in the past within these smaller islands of habitat, and genetic exchange between subpopulations is difficult to achieve.” Id. (citing Cegelski, et al. (2006), AR:LIT-662, and Schwartz, et al. (2009), AR:LIT-3162). Indeed, wolverines in the lower-48 states exhibit only 3 of 13 haplotypes—i.e., sets of genetic variations that tend to be inherited together—found in larger Canadian populations, and a 2007 study demonstrated that a single haplotype dominates the northern Rockies population, “with 71 of 73 wolverines sampled expressing that haplotype.” 79 Fed. Reg. at 47,542 (citing Schwartz, et al. (2007), AR:LIT-3152). Further, while FWS estimated the wolverine population in the lower-48 states to number 250-300 individuals, see id. at 47,524, the “effective population size”—a biological term indicating the portion of the population that actually breeds and contributes genetic material to sustaining the species—is only 35 in the northern Rockies subpopulation, which FWS deemed the “most genetically resilient of the current subpopulations in the DPS.” Id. at 47,526, 47,542 (citing Schwartz, et al. (2009), AR:LIT-3166). By comparison, the best available science establishes that, “for short-term (a few generations) maintenance of genetic diversity, effective population size” of any such population component “should not be less than 50.” Id. at 47,542 (emphasis added); accord AR:LIT-388 (Allendorf & Luikart (2007):

effective population less than 50 justifies concern about “increased probability of extinction”).

Accordingly, as FWS acknowledged in the withdrawal decision, wolverine effective population sizes in the lower-48 states are “very low,” and “below what is thought necessary for short-term maintenance of genetic diversity.” 79 Fed. Reg. at 47,542 (emphasis added). Based on these facts, the U.S. Forest Service’s Rocky Mountain Research Station scientists—including Michael Schwartz, the geneticist who published the wolverine effective population analysis—advised FWS that “estimates of effective population size suggest that regardless of future climate change, wolverine in the U.S. Rocky Mountains is at a level where there should be concern.” AR:PI-1275; see also AR:PI-1246 (same conclusion in Schwartz peer-review comment).

Nevertheless, despite cataloging the facts giving rise to this genetic threat, FWS refused to list the wolverine DPS on this basis. Although acknowledging that “[l]oss of genetic diversity can lead to inbreeding depression and is associated with increased risk of extinction,” 79 Fed. Reg. at 47,542, FWS dismissed this threat by stating that, “[t]o date, no adverse effects of the lower genetic diversity of the contiguous U.S. DPS of wolverines have been documented,” id. However, the best available science establishes that reduced genetic diversity is associated with “reductions in population growth rates and increases in extinction probabilities,”

id. (citing scientific studies); FWS offered no reason to conclude that the wolverine is immune to these effects, even though they have not yet been documented in this rare and difficult-to-study species, see AR:FR-5618 (FWS memo discussing difficulty of obtaining “smoking gun” evidence of impacts to “hard-to-study” wolverine).

Moreover, although FWS relied on an absence of documented impacts “[t]o date,” 79 Fed. Reg. at 47,542, FWS itself rejected the assertion that the ESA listing determination focuses solely “on current population status.” Id. at 47,530. As FWS explained, under the ESA “an evaluation of whether a species may be threatened necessarily invokes additional mechanisms that allow us to project future scenarios for the species based on scientific data, to reasonably forecast the conservation status of the species within the foreseeable future.” Id. (emphases added). Accordingly, the ESA does not permit FWS to disregard an apparent short-term future threat based on a limited snapshot of present conditions. See 16 U.S.C. § 1532(20) (defining “threatened species” as “any species which is likely to become an endangered species within the foreseeable future”); Defenders of Wildlife v. Babbitt, 958 F. Supp. 670, 680 (D.D.C. 1997) (“The purpose of creating a separate designation for species which are ‘threatened’, in addition to species which are ‘endangered’, was to try to regulate these animals before the

danger becomes imminent while long-range action is begun.”) (quotation and citation omitted).

In the two brief passages of its withdrawal decision where FWS actually did address the foreseeable future consequences of the wolverine DPS’s documented genetic impoverishment, the agency stated that “we expect that continued population growth is likely to ameliorate the effects of small effective population size by increasing the wolverine population and providing for better connectivity between subpopulations.” 79 Fed. Reg. at 47,532; see also id. at 47,528 (“We have found in this determination that genetic factors are not a threat to the DPS due to increasing populations.”). This population-growth rationale was arbitrary and unlawful for two reasons.

First, it irrationally abandoned the best available science in favor of speculation. Despite relying on “continued population growth” as a panacea for the wolverine’s genetic plight, FWS itself acknowledged in its withdrawal decision that “[v]ery little is known about wolverine populations in the DPS including ... trends.” Id. at 47,524, 47,532; see id. at 47,527 (“[W]e acknowledge that information on wolverine ... population trends ... is limited.”); see also AR:FR-14523 (notes of April 2014 science panel: “no evidence shows currently increasing expansion of pop in lower 48”). Indeed, a scientific publication that FWS cited as “the best available information” on “population growth and expansion”—Inman, et

al. (2013), 79 Fed. Reg. at 47,535—actually states that “our knowledge of fundamental population characteristics such as current distribution of reproductive females and population trajectory is lacking or based on sparse data,” and “even drastic changes in population size would likely go unnoticed for years if the current level of monitoring were to continue,” AR:LIT-1661.

In the absence of reliable trend information, FWS’s theory that the lower-48 wolverine population continues to expand today rested heavily on recent observations of lone wolverines that successfully dispersed to Colorado, California, and Utah. See 79 Fed. Reg. at 47,536; accord AR:FR-5358 (Reg’l Dir.’s Memo.). However, FWS’s Montana biologists characterized a population-growth hypothesis based on these limited dispersal events as “speculation.” AR:FR 5616. FWS’s Regional Director rejected the Montana biologists’ position, but nevertheless acknowledged that “uncertainty exists” regarding this issue. AR:FR-5358. In its final withdrawal decision, FWS was forced to equivocate about the significance of these dispersals, characterizing the conclusion to be drawn from them as essentially a 50-50 proposition:

While one could conjecture that dispersers to the southern portion of the DPS are occurring due to habitat loss in the northern part of the DPS, one could just as easily conclude that these dispersers are the result of an increasing population with dispersers looking to colonize largely unoccupied habitat.

79 Fed. Reg. at 47,536. Nevertheless, FWS ultimately wielded this 50-50 proposition as a conclusive answer to peer-reviewed scientific evidence establishing that the wolverine's effective population is insufficient for even "short-term maintenance of genetic diversity," let alone long-term viability. *Id.* at 47,542; *see id.* at 47,528 (relying on "increasing populations" to determine "that genetic factors are not a threat to the DPS"). This agency determination fails to articulate a rational connection between the facts found and the choice made; the Court does not defer to a "coin flip." Greater Yellowstone Coal. v. Servheen, 665 F.3d 1015, 1028 (9th Cir. 2011).

Second, even indulging every conceivable speculative inference that could be drawn from the existing wolverine population information, it still falls short of dispelling the genetic threat to the wolverine DPS. Regarding FWS's theory that recent dispersers to Colorado, California, and Utah indicate "an increasing population," 79 Fed. Reg. at 47,536, that will "ameliorate the effects of small effective population size," *id.* at 47,532, the agency's chosen scientific support for the potential occupancy of such habitats, Inman, et al. (2013), *see* 79 Fed. Reg. at 47,534, notes that the dispersing wolverines were lone males and that female dispersal across similar distances "is likely to be so infrequent (if possible) that it may be of limited value in establishing or maintaining populations" such that "active restorations would likely be required to re-occupy these areas," AR:LIT-

1661. FWS’s own analysis of wolverine distribution in the proposed listing, which the agency adopted in its withdrawal decision, 79 Fed. Reg. at 47,523, found no evidence that more cautious female wolverines “are likely to make” such long-range dispersals through unsuitable habitats, 78 Fed. Reg. at 7871; see also id. (noting that “largest documented female movement” covered 145 miles, “generally stayed within suitable wolverine habitat,” and “was never more than about [12 miles] from suitable wolverine habitat”). FWS had no rational basis for concluding that long-range dispersals by lone male wolverines will ameliorate genetic problems arising from an insufficient number of breeding pairs in the DPS population. See AR:FR-3933 (comment from FWS reg’l endangered species chief: “I would caution us not to rely too heavily on a handful of single males as evidence for range expansion. Range expansion won’t occur without females.”).

Apart from these long-range dispersals, the only speculative support for FWS’s theory consists of some indication—with “high uncertainty”—that room for population expansion may remain within the northern Rockies, “likely limited to the southern fringe of the current range in the [Greater Yellowstone Area] and southern Idaho.” AR:FR-5616, 5617 (Asst. Reg’l Dir.’s Memo.). Yet the best available science cited by FWS—again, Inman, et al. (2013)—suggests that any unoccupied habitat capacity in these areas could accommodate, at most, an additional 88 wolverines. AR:LIT-1659. Given that Inman’s estimated current

total population of 281 wolverines in the northern Rockies subpopulation, see id., has yielded an effective population no larger than 35, FWS offered no basis to conclude that adding 88 wolverines to this total population would yield the effective population of 50 needed for even short-term genetic integrity. Looking beyond the short term, FWS admits that “at least 400 breeding pairs would be necessary to sustain the long-term genetic viability of the northern Rocky Mountains wolverine population.” 79 Fed. Reg. at 47,542 (citing Cegelski, et al. (2006), AR:LIT-662). However, the entire DPS population would not reach 400 individuals—let alone 400 breeding pairs—even with the addition of 88 wolverines. Accordingly, the best available science does not support FWS’s determination that “genetic factors are not a threat to the DPS due to increasing populations.” Id. at 47,528. For this reason alone, FWS acted arbitrarily and its withdrawal decision should be vacated and remanded.

III. FWS IRRATIONALLY DISMISSED THE THREAT THAT CLIMATE CHANGE POSES FOR THE SNOW-DEPENDENT WOLVERINE

FWS similarly acted irrationally and contrary to the best science in dismissing the future threat that wolverines face from climate change. Scientific evidence demonstrates that a warming climate will only worsen the isolation and genetic deterioration that already besets wolverines in the lower-48 states while creating new jeopardy by literally melting away massive expanses of the feature

that, more than any other, defines wolverine habitat—snow. As the Forest Service Rocky Mountain Research Station scientists, who conducted much of the existing wolverine field research, advised FWS:

Wolverines are snow-dependent organisms! ... That wolverines are organisms adapted to cold and snowy environments is not controversial. Wolverines exhibit a variety of adaptations to these environments that include a lower threshold of thermoneutrality at -40 C, hydrophobic frost resistant hair, and very low foot loadings (Buskirk et al. 2000). Additionally, they are obligate snow denners (Magoun and Copeland 1998, Copeland et al. 2010, Dawson et al. 2010, May et al. 2012), a behavior that produces direct requirement for persistent, spring snow. As Magoun and Copeland (1998) state: “We believe a critical feature of wolverine denning habitat is dependability of deep snow throughout the denning period.” (pg. 1318)

AR:PI-1258.

FWS proposed listing the wolverine DPS as threatened based primarily on expected “habitat and range loss due to climate warming,” because “[c]limate changes are predicted to reduce wolverine habitat and range by 31 percent over the next 30 years and 63 percent over the next 75 years, rendering remaining wolverine habitat significantly smaller and more fragmented.” 78 Fed. Reg. at 7886. In its withdrawal decision, FWS abruptly abandoned these findings, stating that “we do not accept that a loss of snow across the range of the wolverine will result in a commensurate reduction in suitable wolverine habitat.” 79 Fed. Reg. at 47,544. In executing this about-face, FWS again allowed speculation to trump the best available science. Further, FWS insisted on a level of scientific certainty that

the ESA does not require and that is likely impossible to attain with respect to the rare and elusive wolverine. In so doing, FWS violated the ESA.

A. FWS Unlawfully Disregarded the Threat Posed By A Predicted Massive Loss Of Wolverine Denning Habitat

As FWS stated in the proposed listing rule, the best available scientific information establishes that “[d]eep, persistent, and reliable spring snow cover (April 15 to May 14) is the best overall predictor of wolverine occurrence in the contiguous United States” and “[s]now cover during the denning period is essential for successful wolverine reproduction.” 78 Fed. Reg. at 7872. Any interference with wolverine reproduction may be significant, as “energetic constraints due to low food availability” render “actual rates of successful reproduction in wolverines ... among the lowest known for mammals.” *Id.* at 7866. Further, female wolverines require specific habitat features for successful reproduction:

Female wolverines use natal (birthing) dens that are excavated in snow. Persistent, stable snow greater than ... 5 feet ... deep appears to be a requirement for natal denning, because it provides security for offspring and buffers cold winter temperatures. ... Offspring are born from mid-February through March and the dens are typically used through late April or early May.

Id. at 7866-67 (citations omitted). The connection between deep, persistent snow and wolverine denning is so tight that a recent peer-reviewed study—Copeland, et al. (2010)—determined that 97.9 percent of 562 verified wolverine reproductive dens in North America and Europe fell within an area at northern latitudes

determined by satellite images to consistently hold snow coverage until at least May 15. See AR:LIT-986-87. Based on these and other data, Copeland, et al. (2010) concluded that this area of persistent spring snow coverage represents a “bioclimatic envelope” for the wolverine, meaning a model that “relate[s] range limits to sets of climatic conditions within which a species can survive and reproduce.” Id. at 982.

Yet it is precisely this same area of persistent spring snow coverage that will be eroded by climate change. Another peer-reviewed study, McKelvey, et al. (2011), AR:LIT-2568, used modeling to project that climate change will reduce the wolverine DPS’s “bioclimatic envelope” by 31 percent in 2045 and by 63 percent in 2085. See 78 Fed. Reg. at 7876.

FWS’s proposed listing determined that this habitat loss would “render[] remaining wolverine habitat significantly smaller and more fragmented,” which would “result[] in population decline leading to breakdown of metapopulation dynamics” in the DPS. Id. at 7886. Five of FWS’s seven independent peer reviewers agreed. 79 Fed. Reg. at 47,523. When FWS convened an expert science panel to further probe the wolverine’s “obligate relationship with deep and/or contiguous snow,” the panelists “strongly supported an obligate relationship between wolverines and deep snow at the scale of the den site.” Id. at 47,533; see AR:FR-14020, 14044 (science panel report). Accordingly, FWS’s withdrawal

decision conceded that “it is reasonable to believe that wolverines select for den sites likely to have deep snow that will persist until some point into spring.” 79 Fed. Reg. at 47,533.

Nevertheless, FWS abandoned its proposed conclusion that predicted loss of deep, persistent spring snow cover will impede wolverine denning and thereby threaten the DPS. Id. at 47,534. In so doing, FWS offered a series of justifications for its reversal. None withstands scrutiny.

1. Wolverine Dependence on Snow Dens

First, FWS arbitrarily relied on reasoning that was “not supported by the data it purports to interpret.” Nw. Coal. for Alternatives to Pesticides v. EPA, 544 F.3d 1043, 1052 n.7 (9th Cir. 2008) (quotation omitted). FWS observed that “the Copeland model includes areas that retained snow until May 15, in as few as 1 of 7 years.” 79 Fed. Reg. at 47,534. “That means that some proportion of those den sites fell within an area that did not retain snow each year,” which, FWS asserted, “brings into question the reliability of the conclusion that snow persisting until May 15 is a necessary condition for wolverine reproduction.” Id.; accord AR:FR-5364 (Reg’l Dir.’s Memo).

However, this reasoning misinterpreted the Copeland, et al. (2010) data. Regardless whether some verified wolverine reproductive dens may have been located in areas that retained snow until May 15 in only 1 of 7 years—or even, in a

handful of cases, in areas entirely outside the Copeland “bioclimatic envelope”— the important fact is that wolverines denned in those areas only in years in which they did retain snow. See AR:LIT-990 (Copeland, et al. 2010) (affirming that dens located “outside the spring snow coverage were located at sites containing adequate snow cover for establishing a reproductive den”); AR:PI-504 (Copeland comment: “every den that has ever been verified has been associated with snow”) (emphasis original); AR:PI-1267 (comment from Copeland and other Forest Service scientists: “Of the 562 dens identified by Copeland et al. (2010) to our knowledge, all were snow dens, including the 12 that were not associated with pixels identified as being persistently snow covered through May 15.”). Thus, FWS erred in concluding that the Copeland, et al. (2010) data call into question wolverine reliance on persistent spring snow for successful reproductive denning. See 79 Fed. Reg. at 47,534.

Further, although FWS specifically questioned whether wolverine reproduction requires “snow persisting until May 15,” id., this misses the point. Copeland, et al. (2010) did not assert that denning wolverines require snow persisting until May 15 in all cases, but rather utilized the geographic area defined by spring snow coverage until at least May 15 in at least 1 of 7 years “as an approximation of underlying bioclimatic requirements.” AR:LIT-992. In particular, for an area to register in the Copeland study as providing snow coverage

until at least May 15 in at least 1 of 7 years, it had to feature deep snow during the wolverine denning period because persistent spring snow is “highly correlated” with snow depth. AR:FR-14835 (McKelvey comment); AR:PI 503-04 (Copeland comment). Accordingly, Copeland’s May 15 snow persistence data functioned as a surrogate for habitat features such as deep snow that are generally associated with wolverine reproductive denning—and it did so efficiently, sweeping in 98 percent of all known den sites while, by all indications, including “very little” extraneous area. AR:PI-1259-60 (Forest Service scientists’ comment, with map).

FWS also ignored the fact that only “a tiny proportion of the dens occurred in sites that were snow-covered 1 or 2 years out of 7.” AR:PI-1264. As the lead scientists who authored Copeland, et al. (2010) explained to FWS:

In North America, 1 out of 65 dens (1.6%) occurred in areas snow covered less than 3 years out of 7. In Scandinavia 23 of 497 dens (4.6%) occurred in these areas. The vast majority of dens occur in areas that are classified as being snow covered through May most of the time. In North America, 69% (45/65) of dens occurred in areas that were snow covered 6/7 or 7/7 years. In Scandinavia, areas snow covered 6 or 7 of 7 years were preferred based on resource selection functions (Copeland et al. 2010).

Id. In the face of this evidence of predominant wolverine use of the snowiest denning habitats, FWS’s focus on a tiny minority of dens in areas containing persistent snow in 1 out of 7 years reflects a speculative reliance on outliers in the

data at the expense of drawing reasonable conclusions from the vast majority of scientific evidence.⁴

2. Limited Den Availability

Second, FWS arbitrarily ignored the best available science and the conclusions of its own biologists. In its withdrawal decision, FWS stated that “[w]e are aware of no evidence that den sites are currently scarce or lacking, or that they currently limit wolverine reproduction,” so that “even if some den sites were to be lost as a result of climate change, due to the expansive size of female wolverine home ranges, it is likely that many potential additional den sites would remain available.” 79 Fed. Reg. at 47,534. However, this speculation ignored the best available science because a 1998 peer-reviewed study of wolverines in Sweden documented home-range sizes comparable to those recorded in Montana and observed that “the same denning areas were used in consecutive years, implying that there are relatively few suitable denning areas.” AR:LIT-2048 (citing Landa, et al. (1998)) (emphasis added); see also 79 Fed. Reg. at 47,525 (FWS stating that in absence of North American data “we found Scandinavian

⁴ FWS also overlooked the conservative methodology utilized by Copeland, et al. (2010) in documenting the wolverine’s snowy “bioclimatic envelope.” This methodology examined satellite imagery across the Northern Hemisphere at a scale of 500-square-meter pixels for 21 days; “a single ‘not-snow’ classification any time within this 21 day period would remove that pixel from being considered snow covered in that year So even pixels that only classified as being snow covered 1 year out of 7 were actually pretty snowy places.” AR:FR-14836.

wolverine data are the best available information regarding general wolverine biology”). Further, Inman, et al. (2013)’s data from the northern Rockies demonstrate that “[m]aternal sites” for wolverines “occurred in areas of higher quality habitat suggesting potential utility in distinguishing among patches more or less suitable for reproduction.” AR:LIT-1660. On this basis, Inman suggested that some entire mountain ranges in the western United States may contain insufficient “high-quality maternal habitat” to support wolverine reproduction. Id. FWS failed to consider this information in speculating that “many potential additional den sites would remain available” regardless of massive snow losses due to climate change. 79 Fed. Reg. at 47,534.

FWS further erred by stating that comparing existing wolverine abundance with “estimated available habitat capacity in the U.S. ... suggests that den sites are likely not currently limiting wolverine reproduction and population abundance.” Id.; accord AR:FR-5364 (Reg’l Dir.’s Memo). FWS reached this conclusion by comparing the “estimated current abundance level (322)” with Inman, et al. (2013)’s estimate of “available habitat capacity in the U.S. to be approximately 644 wolverines.” 79 Fed. Reg. at 47,534. However, Inman’s estimate of habitat capacity for 644 wolverines included vast tracts of potential habitat in areas such as Colorado’s southern Rockies and California’s Sierra Nevada that Inman—and FWS itself—concluded were unlikely to be colonized by female wolverines and

therefore unlikely to host wolverine populations absent “active restorations.”

AR:LIT-1661; 78 Fed. Reg. at 7871 (FWS: “no evidence” that female wolverines “are likely to make” dispersals to Colorado or California). Contrary to FWS’s assertion, the existence of unoccupied reproductive den sites in southern habitats that are unlikely ever to see a female wolverine absent human intervention sheds no light on the availability of den sites in northern areas of the DPS where wolverine populations actually exist.

Further, FWS’s focus on the question whether den sites are “currently limiting” wolverine populations, 79 Fed. Reg. at 47,534 (emphasis added), again ignores the pertinent question of likely impacts on wolverines in “the foreseeable future.” 16 U.S.C. § 1532(20) (“threatened species” definition). As to that question, FWS’s Montana biologists who developed the wolverine listing proposal concluded that “the more northerly populations are likely to feel any effects of climate change immediately due to their populations likely already being at capacity,” and “whether or not there is still expansion potential in the southern portion of the currently occupied range (i.e. [Greater Yellowstone Area] and southern Idaho), there is not likely to be enough room to accommodate a loss of 31%, much less the 64% losses projected for 2085.” AR:FR-5616. Although FWS ultimately overruled its Montana biologists, the agency offered no rational response to their conclusion. See Defenders of Wildlife, 958 F. Supp. at 685

(“Although the Court must defer to an agency’s expertise, it must do so only to the extent that the agency utilizes, rather than ignores, the analysis of its experts.”).

3. Reliability of McKelvey study

Third, FWS again trumped science with speculation—this time in abandoning reliance on McKelvey, et al. (2011)’s projection of massive climate-induced losses of the wolverine’s snowy habitat. See 79 Fed. Reg. at 47,533. FWS’s withdrawal decision “agree[d] that McKelvey et al. (2011) is the most sophisticated analysis of impacts of climate change at a scale specific to the range of the wolverine,” id., but nevertheless critiqued the scale of the McKelvey analysis, which modeled snow persistence across 500-square-meter pixels, as “not fine enough to deal with the site specific characteristics of wolverine dens,” id. at 47,544; see id. at 47,527 (stating that “this limitation of the model was of critical importance”). FWS’s position effectively posited that a female wolverine’s choice of a reproductive denning site is based on snow persistence at a scale finer than 500 square meters. FWS cited no evidence to support this speculation and elsewhere the agency asserted that “[i]t is unclear how much habitat wolverines need for denning purposes.” Id. at 47,526.

In fact, however, FWS overlooked substantial scientific evidence that the controlling feature for wolverine reproductive denning is deep, persistent, and expansive—not patchy—snow. As explained to FWS by Forest Service scientist

John Squires, “[w]e do know that wolverines currently reproduce in a zone of persistent, largely continuous spring snow. There is no evidence that wolverines occupy or are expanding into lower elevation zones in the western U.S. with discontinuous snow cover (Copeland et al. 2010, McKelvey et al. 2011).” AR:PI-1254 (emphasis added); accord AR:LIT-9988 (FWS 2010 finding: “females find the conditions necessary for successful denning in the upper portion of their home range where snow is most persistent and occurs in the heaviest accumulations”). As further explained by McKelvey, the fact that approximately 70 percent of verified wolverine reproductive dens in North America were located in areas that retained snow until May 15 in at least 6 out of every 7 years “suggests, in fact, that wolverines are choosing to den in sites that, when families emerge from the natal den, are still covered with deep and fairly contiguous snow and in areas where this condition persists into the spring.” AR:FR-14836 (McKelvey comment). In short, the available scientific evidence does not support FWS’s speculation that wolverine den sites are determined by less-than-500-square-meter “microclimates” that escaped the McKelvey analysis. 79 Fed. Reg. at 47,533.

FWS also claimed uncertainty about McKelvey, et al. (2011) because “[n]ewer modeling techniques suggest that higher elevations could maintain more snow than previously thought,” but FWS itself admitted that these techniques “have not been applied to the northern portions of the proposed wolverine DPS”

that are actually occupied by wolverines, id., and snow experts on the agency’s April 2014 science panel “cautioned [FWS] that these results were for CO and CA, largely unoccupied areas of the wolverine range, and that the majority of occupied range in WY, ID, and MT had strong evidence of dramatic decreases in snow,” AR:FR-3928 (comment from FWS reg’l endangered species chief) (emphasis added). Accordingly, this information falls far short of “highlighting the uncertainty of our conclusions in the proposed rule,” as FWS claimed. 79 Fed. Reg. at 47,533.⁵

4. More Precise Causal Information

Fourth, FWS impermissibly demanded conclusive, rather than the best available, science. See Sw. Ctr. for Biological Diversity v. Babbitt, 215 F.3d 58, 60 (D.C. Cir. 2000) (“Even if the available scientific and commercial data were quite inconclusive, [FWS] may—indeed must—still rely on it” in ESA listing determinations.) (quotations and citation omitted). FWS’s withdrawal decision asserted that “[w]e do not appear to know at this point with any reliability what the causal relationship is between the feature of deep persistent spring snow and wolverine dens,” and without such precise information “it is difficult to determine

⁵ FWS’s withdrawal decision also ignored the fact that FWS’s science panel “indicated strong support for McKelvey et al. (2011)” with “high certainty that climate changes would reduce snow cover similarly or more severely than depicted.” AR:FR-5614; see AR:FR-14047 (science panel report).

beyond speculation if, and how soon,” climate change will impact the DPS. 79 Fed. Reg. at 47,534; accord AR:FR-5365. However, FWS itself said that a “reasonable explanation” for wolverines’ dependence on deep snow “is that kits need security from predators that ... snow tunnels provide.” 79 Fed. Reg. at 47,528. More fundamentally, as FWS’s Montana biologists said on this point, “[t]he precise mechanism(s) behind the relationship between wolverines and deep snow is less important than the fact that deep snow appears to be an obligate habitat feature for this species.” AR:FR-5609. That is, although the best available science may not confirm the precise reason why wolverines need deep, persistent spring snow for reproductive denning, peer-reviewed, published science confirms that “a critical feature of wolverine denning habitat is dependability of deep snow throughout the denning period.” AR:LIT-2312 (Magoun & Copeland (1998)); accord AR:LIT-988-90 (Copeland, et al. (2010)); AR:LIT-3027 (Pulliainen (1968): “Snow plays an important role in the breeding biology of the wolverine.”). As McKelvey explained:

There is no evidence that wolverines den in warmer locations that might have snow drifts through April but which have lost their snow cover by mid-May. ... There’s a lot of this sort of habitat available. The fact that there is no evidence that this ever happens is really rather remarkable.

AR:FR-14837. Accordingly, a massive loss of persistent spring snow throughout the denning period due to climate change threatens a major erosion of wolverine

denning habitat—whatever the specific causal mechanism. As FWS’s Montana biologists stated, “any conclusion that there will not be population effects appears to be based on opinion and speculation. In our opinion that would not represent the best available scientific or commercial data available.” AR:FR-5614.

Indeed, FWS’s demand for more precise data on this point ignores the fact that it is likely impossible to obtain such data regarding the rare wolverine. FWS’s Montana biologists explained this challenge:

[F]or wolverine we are unlikely to ever get this kind of “smoking gun” because they are seldom observed even when radio collared, and the effects of climate change are likely to be much more subtle, such as slightly decreased reproductive output, fewer prime home ranges that are productive enough to support a female with kits, or decreased connectivity resulting in fewer successful movements between major habitat areas. Thus, detecting a species’ response either now or in the future is unlikely due to the near impossibility of obtaining such information on this hard-to-study species.

AR:FR-5618; see also AR:FR-5031 (same from FWS lead biologist on wolverine listing). Accordingly, if the level of certainty demanded by FWS were needed for ESA listing, the wolverine DPS could likely never be listed as threatened.

However, the ESA demands that FWS “make its determinations ‘solely on the basis of the best scientific and commercial data available,’ 16 U.S.C. § 1533(b)(1)(A), and the Service may not ignore evidence simply because it falls short of absolute scientific certainty.” Nw. Ecosystem All. v. FWS, 475 F.3d 1136, 1147 (9th Cir. 2007). Here, the best available science establishes that

dependable, deep snow is a “critical feature” for wolverine reproductive denning. AR:LIT-2312 (Magoun & Copeland (1998)). The ESA required FWS to evaluate the threat posed by a 63 percent loss of that feature over the next 70 years. By instead demanding more precise data that can likely never be obtained, FWS again violated the ESA.

B. FWS Arbitrarily Dismissed the Climate-Change Threat To Year-Round Wolverine Habitat

FWS further violated the ESA in reversing its finding that climate change threatens not just wolverine reproductive denning, but the wolverine’s year-round habitat use. As FWS acknowledged in its proposed listing, wolverine year-round habitat use “takes place almost entirely within the area defined by deep persistent spring snow.” 78 Fed. Reg. at 7868. The Copeland, et al. (2010) study examined radiotelemetry locations of wolverines from 10 recent studies in the lower-48 states, Canada, and Norway, and found that 95 percent of summer locations and 86 percent of winter locations fell within the geographic area of spring snow coverage. AR:LIT-987. Reviewing these results and other information, six of nine FWS science panelists agreed “that wolverines tended toward having an obligate relationship with contiguous snow at the home range and species’ range scales.” AR:FR-5613 (Asst. Reg’l Dir.’s Memo); AR:FR-14020, 14045 (science panel report). Nevertheless, FWS’s withdrawal decision abandoned the agency’s earlier position, expressing new “uncertainty in the relationship between wolverines and

snow” and therefore asserting that expected future losses of snow cover “may not equate linearly to an equivalent loss of wolverine habitat.” 79 Fed. Reg. at 47,535.

FWS’s asserted justifications for this reversal were uniformly arbitrary and frequently contradicted FWS’s own findings. FWS first criticized Copeland, et al. (2010), asserting that its locational information “does not consider several available datasets, such as trapping locations, location records from States and provinces, and telemetry data from the eastern Canadian provinces.” *Id.* at 47,534. But FWS itself discounted the reliability of “trapping information” because it is “biased” by the “confounding factor of human use and baiting of traps, which could cause wolverines to venture into habitats they otherwise seldom use.” *Id.* at 47,525; see also AR:LIT-7637 (Magoun, et al. (2007): “fur-trapping records may not reflect actual distribution of wolverines”). Similarly, state and provincial location records are heavily skewed toward “opportunistically collected wolverine encounters,” which FWS itself dismissed as “likely biased by factors that affect the probability of humans detecting wolverines.” 79 Fed. Reg. at 47,525. Indeed, FWS’s wolverine range delineation in the proposed listing—later incorporated into the withdrawal decision, *id.* at 47,523—rejected such “[v]isual-encounter records” as yielding “wildly inaccurate conclusions about species occurrence.” 78 Fed. Reg. at 7869; accord AR:LIT-394 (Aubry, et al. (2007): wolverine “anecdotal

records ... are inherently unreliable”).⁶ As to telemetry data from eastern Canadian provinces, such data reflect wolverine habitat use in a topographically flat landscape, but FWS admitted that data from such sites are “largely irrelevant” to the listing determination “because the habitats in the contiguous U.S. DPS are not lowland boreal habitats but rather mountainous habitats where the [Copeland] model fit is very good.” 79 Fed. Reg. at 47,527 (emphasis added). FWS failed to explain why omission of admittedly unreliable or irrelevant datasets undermines, rather than strengthens, reliance on Copeland, et al. (2010).

FWS also offered up its “own calculations” to downplay the climate-change threat to the wolverine’s year-round habitat, but FWS’s calculations were spurious. Id. at 47,535. Given McKelvey, et al. (2011)’s modeling of a 63 percent loss of wolverine habitat by 2085 and the “average home range sizes of male and female wolverines,” FWS calculated that “the predicted habitat remaining after 2085” could support 344 total wolverines, with 283 in the northern Rockies. Id.; accord

⁶ Although FWS’s critique of Copeland, et al. (2010) cited state data indicating that “only 68.6 percent of Idaho’s verified wolverine observations (312 of 415) were within Copeland et al.’s (2010) habitat model,” 79 Fed. Reg. at 47,534, FWS ignored the fact that 95 of the cited Idaho observations outside the Copeland habitat model were anecdotal observations of wolverines or their tracks or scats that FWS elsewhere deemed “wildly inaccurate,” AR:PI-2721 (Idaho comment); 78 Fed. Reg. at 7869. Further, while citing Idaho’s anecdotal observations of wolverine tracks or scats, FWS dismissed as unreliable Montana’s wolverine population data based on “track survey information” because it “does not meet our standard for reliability.” 79 Fed. Reg. at 47,540. FWS failed to explain this inconsistency.

AR:FR-5551. Thus, FWS reasoned, “even if future populations were potentially limited by available habitat for future growth, the data do not suggest that the population of wolverines in the contiguous United States would necessarily be forced into decline by loss of habitat.” 79 Fed. Reg. at 47,535.

But, even accepting FWS’s calculations, the wide confidence interval for FWS’s stated result (95 percent confidence interval: 110-347), id., demonstrates that FWS can state with some degree of certainty only that the northern Rockies population will be at or above 110 by 2085—not at 283. Ignoring this potential for a severe population reduction is inconsistent with “the ESA’s policy of institutionalized caution.” Greater Yellowstone Coal., 665 F.3d at 1030 (quotations and citation omitted).

Further, FWS’s calculations ignored numerous relevant factors. As demonstrated by Inman, et al. (2013), which FWS cited as the best available science, see 79 Fed. Reg. at 47,536, any such capacity assessment must consider not only average home range sizes but additional factors including, at a minimum, sizes of remaining habitat patches and distances between them. See AR:LIT-1657. For example, Inman’s published habitat capacity calculation “checked our potential to over-predict by removing estimated wolverines from patches that were <400 km² and >10 km from a 400 km² patch.” Id. (emphasis added). There is no indication that FWS’s back-of-the-envelope calculations included such constraints.

Applying these constraints, Inman calculated that today's habitat capacity in the northern Rockies could sustain an outside estimate of 369 wolverines. AR:LIT-1659 (Table 4). FWS offered no explanation how this peer-reviewed result can be reconciled with the agency's calculations that only 37 percent of today's habitat (i.e., after the 63 percent loss modeled by McKelvey) would somehow maintain 77 percent of today's habitat capacity (i.e., enough for 283 wolverines in the northern Rockies).⁷

FWS also disregarded relevant factors in dismissing the threat that erosion of the wolverine's year-round snowy habitat would further isolate remaining habitat patches and further fragment remaining wolverine populations. FWS noted that, while McKelvey, et al. (2011) projected massive losses of wolverine habitat due to climate change, "large (>2000 km²) contiguous areas of wolverine habitat are predicted to persist ... throughout the 21st century for all model projections." 79 Fed. Reg. at 47,535. But McKelvey, et al. (2011) explicitly deemed such remaining large habitats sufficient only for "short-term population persistence," AR:LIT-2580 (emphasis added), so this finding did not allay the threat to the DPS.

⁷ FWS also asserted that "[r]ecent evidence suggests that there is suitable habitat available within the contiguous United States to support a wolverine population twice as large as that at present." 79 Fed. Reg. at 47,536. As discussed supra, this assertion relies on potential habitat in Colorado and California that is unlikely to be occupied by reproducing populations absent human intervention, so it offers no rational response to the threat that climate change poses to the existing wolverine population.

Further, FWS conceded that McKelvey, et al. (2011)'s "dispersal modeling predicts that habitat isolation at levels associated with genetic isolation of populations becomes widespread" by 2085. 79 Fed. Reg. at 47,535. To nevertheless dismiss the resulting threat to wolverine persistence, FWS asserted that "wolverines are capable of traversing great lengths, thus ameliorating the potential negative consequences of increasing distances between areas of suitable habitat." Id. Yet once again FWS's conclusion contradicted its own findings in the withdrawal decision, which summarized the best available science on wolverine dispersals through unsuitable habitats:

Wolverines prefer to travel in habitat that is most similar to habitat they use for home-range establishment, i.e., alpine habitats that maintain snow cover well into the spring (Schwartz et al. 2009, p. 3227). Wolverine may move large distances in an attempt to establish new home ranges, but the probability of making such movements decreases with increased distance between suitable habitat patches, and the degree to which the characteristics of the habitat to be traversed diverge from preferred habitat in terms of climatic conditions (Copeland et al. 2010, entire; Schwartz et al. 2009, p. 3230).

Id. at 47,538 (emphases added); see also id. ("wolverine movement rates are limited by suitable habitat and proximity of suitable habitat patches"). Given that habitat fragmentation and isolation have already reduced the wolverine DPS's effective population size below "what is thought necessary for short-term maintenance of genetic diversity," id. at 47,542, FWS's recognition that the likelihood of wolverine dispersal between subpopulations "decreases with

increased distance between suitable habitat patches,” *id.* at 47,538, belies the agency’s blithe reliance on the wolverine’s capability “of traversing great lengths,” *id.* at 47,535, to cure the problem of increased habitat fragmentation and isolation due to climate change. For this reason too, FWS violated the ESA.

IV. FWS WRONGLY DISREGARDED OTHER THREATS TO THE WOLVERINE DPS

In addition to unlawfully assessing genetic and climate-change threats to the wolverine DPS, FWS erroneously disregarded two important points:

First, FWS arbitrarily discounted the impact of recreational wolverine trapping in Montana. “Montana is the only State where wolverine trapping is still legal,” although wolverines are incidentally captured in traps set for other species—sometimes sustaining mortal injuries—in Idaho and Wyoming. *Id.* at 47,540. “[A] thorough reading of the best science clearly demonstrates that wolverines are susceptible to additive mortality from harvest given the species’ low density, low fecundity, and ease of trap-capture due to their proclivity to feed on carrion baits during winter.” AR:PI-1254 (Squires comment); accord 79 Fed. Reg. at 47,539. FWS’s proposed listing rule deemed such trapping to threaten the DPS “in concert with habitat loss resulting from climate change” because it “may contribute to population declines.” 78 Fed. Reg. at 7882. Because FWS ultimately dismissed the climate-change threat, it equally disregarded the threat from

trapping, stating that the “small number of wolverine mortalities” resulting from trapping are “not a threat to the wolverine DPS.” 79 Fed. Reg. at 47,541.⁸

However, because FWS’s dismissal of the climate threat was arbitrary, this finding too was irrational. As FWS’s Montana biologists explained, “even small numbers of mortalities are likely to be problematic when habitat and populations are contracting due to climate change.” AR:FR-5611 (Asst. Reg’l Dir.’s Memo). Further, given that the wolverine DPS’s effective population size is already smaller than necessary “for short-term maintenance of genetic diversity,” 79 Fed. Reg. at 47,542—even before climate-change impacts—trapping mortalities already threaten to remove those few, critical individuals attempting to disperse between isolated habitats to diversify the genetics of isolated subpopulations. See 78 Fed. Reg. at 7876 (recognizing existence of inbreeding within “smaller islands of habitat”). In short, because there already are too few wolverines to sustain a genetically viable population, none can afford to be lost to recreational trapping. FWS offered no rational response to this issue.

⁸ Trapping mortality in wolverine populations is “mostly additive,” meaning it kills wolverines that would otherwise survive and potentially contribute to the population. AR:LIT-1979 (Krebs, et al. (2004); accord AR:LIT-3196-97 (Squires, et al. (2007)). FWS’s withdrawal decision rejected this conclusion for the wolverine DPS, citing “the fact that wolverine populations are increasing.” 79 Fed. Reg. at 47,524. However, as discussed supra, this asserted “fact” is speculation.

Second, FWS arbitrarily dismissed the threat posed by infrastructure development that impedes essential wolverine dispersal among isolated habitat patches. See 79 Fed. Reg. at 47,537-38. FWS admitted that “[d]ispersal between populations is needed to avoid further reduction in genetic diversity,” but claimed “there is no evidence that human development and associated activities are preventing wolverine movements between suitable habitat patches.” Id. at 47,538. However, although published research indicates that roads are “not absolute barriers to wolverine movement,” id., the best available science nevertheless demonstrates that roads have “a significant impact on wolverine movements,” AR:LIT-453 (Austin (1998)); see also AR:LIT-1655 (Inman, et al. (2013)); AR:LIT-5299-5300 (Dawson, et al. (2010)) (both finding wolverines “negatively associated” with higher road densities). This significant impact threatens to further isolate remaining wolverine subpopulations, which already suffer from an effective population size that is inadequate for “short-term maintenance of genetic diversity.” 79 Fed. Reg. at 47,542. In dismissing this threat, FWS failed to utilize the best available science.

V. FWS UNLAWFULLY DETERMINED THAT THE WOLVERINE DPS IS NOT THREATENED THROUGHOUT A “SIGNIFICANT PORTION” OF ITS RANGE

Even assuming, for the sake of argument, that FWS rationally determined that the wolverine DPS is not threatened with extinction throughout its range—

which it did not—FWS still erred in assessing whether the admitted non-viability of wolverines in the southern Rockies and Sierra Nevada imperils the DPS throughout a “significant portion” of its range. The ESA requires listing a species if it is endangered or threatened “throughout all or a significant portion of its range.” 16 U.S.C. § 1532(6), (20) (emphasis added). Under this language, “[w]here a species or subspecies is unlikely to survive in a sizeable portion of its current habitat, the agency must provide some explanation as to why this portion is not ‘a significant portion of its range[.]’” Colo. River Cutthroat Trout v. Salazar, 898 F. Supp. 2d 191, 203-04 (D.D.C. 2012) (citation omitted).

Here, FWS claimed that it “evaluated the current range” of the DPS and “found no portions of the range where potential threats are significantly concentrated or substantially greater than in other portions of the range.” 79 Fed. Reg. at 47,545. Yet FWS’s own distribution analysis concluded that the “current range of the [wolverine] in the contiguous United States includes ... the southern Rocky Mountains[] and the Sierra Nevada Mountains,” and FWS itself acknowledged that there are no known wolverine populations—but only single males—in these regions. 78 Fed. Reg. at 7871-72 (proposed listing); see 79 Fed. Reg. at 47,523 (withdrawal decision adopting “distribution” analysis from proposed listing). FWS further admitted there is “no evidence” that female wolverines “are likely to” ever join these lone males under natural conditions. 78

Fed. Reg. at 7871. FWS offered no explanation why the existence of only lone male wolverines in these major portions of the DPS's current range, with no prospect of wolverine reproduction, does not give rise to "significantly concentrated or substantially greater" threats to wolverine persistence than exist elsewhere in the DPS. 79 Fed. Reg. at 47,545.

Nor did FWS explain why these large portions of the wolverine's current range are not "significant" under the ESA. FWS stated that

a portion of the range of a species is "significant" if the species is not currently an endangered or a threatened species throughout all of its range, but the portion's contribution to the viability of the species is so important that, without the members in that portion, the species would be in danger of extinction, or likely to become so in the foreseeable future, throughout all of its range.

Id. at 47,544. Here, as discussed supra, FWS relied on the available capacity of "suitable habitat not currently occupied and/or occupied with a few individuals" in the southern Rockies and Sierra Nevada to offset the climate-change threat to wolverines in the DPS. Id. at 47,536; see also id. (relying on individual wolverine dispersals "to Colorado, California and Utah"). Specifically, FWS relied on such habitat capacity to conclude that, "[e]ven under conditions of future reduced snowpack as a consequence of climate change, sufficient habitat will likely remain to maintain the wolverine population at the current level of abundance." Id.; accord id. at 47,543 ("Recent evidence suggests that there is suitable habitat available within the contiguous United States to support a wolverine population

twice as large as that at present.”); AR:FR-5364 (Reg’l Dir.’s Memo). FWS’s reliance on unoccupied habitat capacity in areas, such as the southern Rockies and Sierra Nevada, that are likely never to be naturally recolonized by reproducing wolverine populations was arbitrary for the reasons discussed supra. Regardless, FWS cannot have it both ways, relying on unoccupied habitat capacity in these areas to dismiss a major threat to the wolverine but then deeming these same areas insignificant to “the viability of the species” in its “significant portion” analysis. 79 Fed. Reg. at 47,544, 47,545. FWS’s “significant portion” analysis was arbitrary and capricious.⁹

CONCLUSION

For the foregoing reasons, plaintiffs Defenders of Wildlife in No. CV-14-246-M-DLC and Center for Biological Diversity, et al., in No. CV-14-247-DLC respectfully request that this Court grant their motion for summary judgment.

⁹ Plaintiffs do not concede that FWS’s “significant portion” analysis methodology complied with the ESA, but the Court need not reach that question because, even under FWS’s chosen methodology, its decision was arbitrary.

Respectfully submitted this 29th day of May, 2015.

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