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July 8, 2008

By Facsimile and Certified Mail/Return Receipt Requested

Dirk Kempthorne, Secretary
Department of the Interior
1849 C Street, N.W.
Washington DC 20240

H. Dale Hall, Director
U.S. Fish and Wildlife Service
Department of the Interior
1849 C Street NW
Washington, D.C. 20240

RE: Notice of Intent to Sue to Remedy Violations of the Endangered Species Act in Regard to the United State Fish and Wildlife Service's 12-Month Finding on Petition to List the North American Wolverine as Endangered or Threatened, 73 Fed. Reg. 12,929 (Mar. 11, 2008)

Dear Secretary Kempthorne and Director Hall:

On behalf of Defenders of Wildlife, the Center for Biological Diversity, Conservation Northwest, Friends of the Clearwater, Greater Yellowstone Coalition, Idaho Conservation League, Jackson Hole Conservation Alliance, Klamath-Siskiyou Wildlands Center and the Wyoming Outdoor Council, in accordance with the citizen suit provision of the Endangered Species Act ("ESA" or "Act"), 16 U.S.C. § 1540(g), I hereby provide notice that the United States Fish and Wildlife Service ("FWS" or "Service") is in violation of the ESA, 16 U.S.C. § 1533, and its implementing regulations, 50 C.F.R. § 402 *et seq*., with regard to its March 11, 2008 determination that the North American wolverine population existing in the lower-48 United States is not warranted for listing under the ESA. *See* 73 Fed. Reg. 12,929 (Mar. 11, 2008). FWS's failure to provide meaningful legal protection for the species and its habitat is unlawful in light of the wolverine's imperiled status. The record demonstrates that the wolverine faces such significant threats, including serious impacts from climate change, that the FWS's decision to deny the species and its habitat the protections of the Act may result in its extinction in the contiguous United States. Pursuant to section 11(g)(2)(C) of the ESA, this letter provides you notice that, unless within 60 days

209 SOUTH WILLSON AVENUE BOZEMAN, MT 59715-4630
T: 406.586.9699 F: 406.586.9695 E: eajusmt@earthjustice.org W: www.earthjustice.org

of receipt of this letter FWS issues a finding that the wolverine's listing is warranted, we intend to challenge the Service's decision not to list the wolverine in federal district court.

The Endangered Species Act

Under the ESA, a "species" that may receive the protections of the Act includes "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature." 16 U.S.C. § 1532(16). An "endangered species" is "any species which is in danger of extinction throughout all or a significant portion of its range." *Id.* § 1532(6). A "threatened species" is "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." *Id.* § 1532(20). The Act mandates that the FWS shall determine whether any species qualifies for listing as an endangered or a threatened species based on the "best scientific and commercial data available." *Id.* § 1533(b)(1)(A).

The ESA's text and legislative history reflect a "consistent policy decision by Congress that the United States should not wait until an entire species faces global extinction before affording a domestic population segment of a species protected status." *Sw. Ctr. for Biological Diversity v. Babbitt*, 926 F. Supp. 920, 924 (D. Ariz. 1996). Indeed, in establishing that a species may be deemed endangered or threatened based on threats "throughout … a significant portion of its range," Congress sought to provide for "the possibility of declaring a species endangered within the United States where *its principal range is in another country, such as Canada or Mexico, and members of that species are only found in this country insofar as they exist on the periphery of their range*." H.R. Rep. No. 93-412, at 10 (1973) (emphasis added). Moreover, in authorizing the listing of distinct population segments ("DPSs") under the ESA, Congress recognized "that there may be instances in which FWS should provide for different levels of protection for populations of the same species. *For instance, the U.S. population of an animal should not necessarily be permitted to become extinct simply because the animal is more abundant elsewhere in the world*." S. Rep. No. 96-151, 96th Cong., 1st Sess. (1979), *reprinted in* A Legislative History of the Endangered Species Act, 97th Cong., 2d Sess. 1397 (1982) (emphasis added). This statutory authority to provide differing levels of protection to different populations is a key feature of the ESA. Many of the most prominent species protected under the ESA, including the gray wolf, grizzly bear, and bald eagle, were listed as populations in the lower-48 states despite the presence of more robust populations in Alaska and Canada.

Congress did not define "distinct population segment" in the ESA, and the term has no generally accepted scientific meaning. *Ctr. for Biological Diversity v. Lohn*, 296 F. Supp. 2d 1223, 1234 (W.D. Wash. 2003). In 1996, the Service issued a policy interpreting the phrase "distinct population segment" that requires the consideration of the discreteness of the population segment in relation to the remainder of the species to which it belongs; the significance of the population segment to the species to which it belongs; and the population segment's conservation status in relation to the Act's standards for listing. 61 Fed. Reg. 4,722, 4,725 (Feb, 7, 1996).

With respect to the discreteness element, "[t]he standard established for discreteness is simply an attempt to allow an entity given DPS status under the Act to be adequately defined and described." *Id.* at 4,724. A population may be discrete if it meets one of the following conditions:

1. It is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors.

Quantitative measures of genetic or morphological discontinuity may provide evidence of this separation.

2. It is delimited by international governmental boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D) of the Act.

Id. at 4,725. In determining a population's significance, the Service's evaluation may include:

1. Persistence of the discrete population segment in an ecological setting unusual or unique for the taxon;
2. Evidence that loss of the discrete population segment would result in a significant gap in the range of a taxon;
3. Evidence that the discrete population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historic range, or
4. Evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics.

Id. Significance is to be considered "in light of Congressional guidance" and may be established based on, "but is not limited to," the above listed factors. *Id.*

The ESA and its implementing regulations similarly fail to define what constitutes a "significant portion of [a species'] range." 16 U.S.C. § 1532(6). FWS relies on a Memorandum from the Department of Interior's Office of the Solicitor which concludes, in part, that the analysis of whether a portion of a species' range is "significant" is limited to the species' *current* range and must focus on the biological significance of the region regardless of its geographic scope. *See* Department of Interior, Office of the Solicitor, Memorandum on the Meaning of "In Danger of Extinction Throughout All or a Significant Portion of its Range" M-37013 (March 16, 2007). The Solicitor's conclusions, however, defy the plain meaning of the text, the intent of the ESA and judicial decisions addressing the issue. *See, e.g., Defenders of Wildlife v. Norton,* 258 F.3d 1136, 1145 (9th Cir. 2001); *Defenders of Wildlife v. Norton*, 239 F. Supp. 2d 9, 19 (D.D.C. 2002) ("FWS's conclusion that these three, of the Lynx's four regions, are collectively not a significant portion of its range is counterintuitive and contrary to the plain meaning of the ESA … .").

The Endangered Wolverine

The wolverine is endangered in the contiguous United States. Nevertheless, the FWS's response to calls to conserve this species has been one of intransigence that has been overcome only by court order. On July 14, 2000, environmental groups submitted a petition to list the wolverine within the contiguous United States as a threatened or endangered species and to designate critical habitat for the species. After initial delay that required court action to resolve, the Service published a negative 90-day petition finding in the Federal Register on October 21, 2003. 68 Fed. Reg. 60,112 (Oct. 21, 2003). On June 8, 2005, a coalition of conservation organizations filed a complaint in the U.S. District Court for the District of Montana challenging the Service's negative finding. On September 29, 2006, the Montana court ruled that the 90-day petition finding was arbitrary and capricious and "violated the [ESA] through the erroneous application of a standard that looks to conclusive evidence." *Defenders of Wildlife v. Kempthorne*, CV 05-99-M-DWM, slip op. at *18-19 (D.

Mont. 2006). According to the court, FWS "ignore[d] substantial scientific information" when it erroneously determined that the petition failed to show that listing the wolverine may be warranted. *Id.* at *14. The court concluded that the "petition also included enough information to allow the Secretary to conclude the distribution of the species is substantially diminished and the wolverine's existence is threatened." *Id.* at *20. The court ordered the Service to prepare a 12-month finding on the wolverine listing petition. *See id.* at *21. On April 18, 2007, the court granted the Service's motion to extend the status review and 12-month finding deadline for the wolverine by five months, to February 28, 2008. FWS published its finding denying ESA protections for the wolverine on March 11, 2008. 73 Fed. Reg. at 12,929.

Despite its ultimate decision to deny the wolverine protection under the ESA, FWS's finding acknowledges that the best available science indicates that the wolverine is endangered. According to FWS, the current wolverine population in the United States is comprised of an estimated 500 wolverines in the northern Rocky Mountains in Idaho, Wyoming and Montana, and a small population in the North Cascades mountain range in Washington State. *Id.* at 12,935.[1] Only a small percentage of the total wolverine population successfully breeds, however. FWS reports that the "effective population size" for wolverines in the lower-48 states—meaning that portion of the population that contributes to the gene pool—is estimated at just 39 individuals, which "is exceptionally low… and is below what is required for short-term maintenance of genetic diversity." *Id.* at 12,937 ("Over time, if the current effective population size remains stable, the population will be at risk of extinction due to inbreeding depression or stochastic demographic effects.").[2]

Further exacerbating the problems associated with the wolverine's small population size, the wolverine currently exists "in an archipelago of semi-isolated, suitable habitats near mountain tops, surrounded by a sea of unsuitable habitats." *Id.*; *see also id.* at 12,936 (the wolverine has been relegated to "small, fragmented, and semi-isolated populations" found in "isolated, 'sky island' patches separated by unsuitable habitats."). The intermountain valleys between these refugia significantly restrict wolverine movement as they have become clogged with "residential and commercial developments and transportation corridors." *Id.* at 12,937. Yet, as FWS recognizes, "to avoid further inbreeding or local extirpation due to demographic stochasticity, regular exchange of individual wolverines between islands of habitat must occur." *Id.*; *see also id.* at 12,938 ("In the contiguous United States, wolverines must cross unsuitable habitats to achieve connectivity among subpopulations, which is required to avert further genetic drift and continued loss of genetic

[1] FWS's population analysis likely overestimates the northern Rockies population. FWS's analysis apparently assumed 126,470 acres of suitable wolverine habitat in Montana, Idaho and Wyoming based on Brock (2007), and then estimated how many wolverines that habitat could support based on wolverine population densities observed by Inman (2007) in the Madison and Teton ranges. *See* 73 Fed. Reg. at 12,935. FWS calculated that this methodology yielded a range of 499 to 655 wolverines in the three-state region. *See id.* In fact, however, the lower end of this range, based on Inman (2007)'s minimum density estimate of 1 wolverine/321 km^2 in his study area, is 394 wolverines—not 455 (126,470 ÷ 321 = 393.99). Moreover, all such population estimates assume full occupancy of suitable wolverine habitat in the northern Rockies, which FWS admits "is not the case." 73 Fed. Reg. at 12,935. Accordingly, the actual wolverine population in the northern Rockies may be 394 or even lower.

[2] A population's "effective" size is a "measure of the proportion of the actual population that contributes to future generations." 73 Fed. Reg. at 12,936. "Effective population size is important because it determines rates of loss of genetic variation, fixation of deleterious alleles, and the rate of inbreeding," and as a general rule, "the short-term effective population size should not be less than 50, and the long-term effective population size should not be less than 500." *Id.* at 12,937.

diversity."). The current fragmented and disjointed nature of wolverine habitat "results in a contiguous U.S. population that is more vulnerable to extirpation because of lack of connectivity between subpopulations, which contributes to inbreeding and reduces the chances of recolonization of habitat patches after local extinction." *Id.* As a result, FWS determined, the wolverine is "at greater risk of being lost due to catastrophic or stochastic events than those populations to the north in Canada and Alaska." *Id.* at 12,936.

Even this finding, however, failed to fully appreciate the wolverine's precarious status in the lower-48 United States. Notably, FWS failed to discuss the threat to wolverines posed by trapping in Montana, "where the bulk of the species resides." *Id.* at 12,939. Montana's wolverine trapping season annually removes an average of 10.5 individuals from this population. *See id.* at 12,934. Research indicates that an untrapped wolverine population is capable of increasing at 6.4 percent each year. Krebs *et al.* (2004). Accordingly, FWS assumed that trapping mortality of 6 percent of a wolverine population each year is sustainable. *See* 73 Fed. Reg. at 12,936. However, FWS failed to acknowledge that this 6-percent sustainability threshold has been regularly exceeded in numerous mountain ranges that constitute suitable habitat for the highly fragmented Montana wolverine population. *See* Inman (2007). Indeed, a recent study of the wolverine population in Montana's Pioneer, Beaverhead, Anaconda-Pintler, and Flint Creek Mountain Ranges observed a 30 percent population decline over the four-year study period due to trapping, with 6 of 8 known wolverine mortalities in these ranges caused by trapping. Squires *et al.* (2007). Given that "regular exchange of individual wolverines between islands of habitat must occur" to avoid inbreeding and local extirpations, 73 Fed. Reg. at 12,937, such excessive localized trapping mortality, particularly in these "island" mountain ranges located between larger areas of suitable wolverine habitat such as Glacier National Park and the Greater Yellowstone Ecosystem, presents a significant threat to the species' viability. Further underscoring this threat, the best available scientific information indicates that a 2:1 ratio of habitat where trapping is prohibited versus habitat where trapping is permitted is necessary for a sustainable wolverine population, Krebs *et al.* (2004), but in Montana that ratio is 1:9. Inman (2007).

FWS also failed to address the threat to high-elevation wolverine denning habitat arising from escalating motorized winter recreation, such as snowmobiling and helicopter skiing, in many portions of the species' remaining range in the contiguous United States. *See* Heinemeyer, *et al.* (2001). Female wolverines typically give birth to their kits from early February through April in high alpine cirque basins above timberline, tunneling through several meters of snow to excavate a denning area at ground level. 73 Fed. Reg. 12,930-31; *see also* Magoun and Copeland (1998). Denning females are extremely sensitive to human disturbance. *See* Copeland (1996); Magoun and Copeland (1998). Such disturbance frequently results in den abandonment, often forcing the female to move to a less suitable site. Banci (1994). Denning females have been observed to abandon their dens even upon discovering human snowshoe tracks in the area. Copeland (1996); *see also* Magoun and Copeland (1998); Inman (2007) (discussing wolverine movement away from a maternal den after approach by researchers and light amount of recreational snowmobile activity). Despite the steep terrain that characterizes typical den sites, recent advances in snowmobile technology have enabled snowmobilers to reach previously inaccessible areas of suitable wolverine denning habitat. Heinemeyer, *et al.* (2001). Further, an expanding helicopter skiing industry is impacting otherwise remote and inaccessible wolverine denning habitats in some areas with the noise and disturbance associated with numerous helicopter flights and landings throughout the winter months. *See id.* A study of suitable wolverine denning habitat in the southwestern portion of the Greater Yellowstone Ecosystem concluded that "[w]inter recreational use, particularly snowmobile and heli-skiing, may be

having potentially severe localized habitat impacts on wolverines." *Id.* The study noted, for example, that aerial surveys over two years had failed to detect wolverine presence in the Palisades area on the Wyoming-Idaho border south of Jackson Hole, Wyoming, despite the fact that this area "appears to contain high quality wolverine habitat"; however, "these habitats appear to be incurring potentially large impacts due to the widespread winter recreational activities." *Id.* This Palisades area is particularly significant because it appears to constitute a "bottleneck" in a potential migration route from occupied wolverine habitat in the Greater Yellowstone Ecosystem south to unoccupied suitable habitat in the southern Rockies. *See* Aubry *et al.* (2007).[3]

FWS's dire predictions about the future of wolverines in the contiguous United States also did not consider the major threat posed to the species and its habitat by climate change. As FWS notes, "[s]pring snow cover [] is the best overall predictor of wolverine occurrence," and "[a]ll of the areas in the lower 48 States for which good evidence of persistent wolverine populations exists (*i.e.*, Cascades, Sierra Nevada, northern and southern Rockies) contain large and well-distributed areas with deep snow cover that persists through the wolverine denning period." 73 Fed. Reg. at 12,934-35. Female wolverines depend on adequate snowpack for maternal den sites. *Id.* at 12,934. Climate change already has decreased spring snow cover in the wolverine's range, and that trend is likely to continue and escalate over time. *See, e.g.* Stewart *et al.* (2005); Howat & Tulaczyk (2005); Knowles & Cayan (2002); Miles (2006); Mote *et al.* (2005); Payne *et al.* (2004). This loss of spring snow cover will cause critical reductions in wolverine denning habitat, as females will be unable to find adequate snow cover in many areas. These studies document that areas of wolverine habitat have already lost up to 30% of their historic spring snowpack, and reductions could increase to 60% of historic levels by 2090. Howat & Tulaczyk (2005). Snowpack reduction will thus place added pressure on wolverine populations as their denning habitat literally melts away, and, based on the recent wolverine range assessment by Aubry *et al.* (2007), is likely to result in further range constriction for the species. In addition to reductions in denning habitat, warmer winters are also likely to reduce ungulate mortality, and decrease the amount of carrion available for scavengers such as wolverines. Wilmers & Getz (2005). Combined with information showing that the availability of winter food is a limiting factor for female wolverine reproduction, this indicates that even greater declines in wolverine populations may be imminent. Persson (2005). The Service failed to consider these effects of climate change on wolverine populations.

Discussion

The wolverine is on the precipice of extinction in the contiguous United States. FWS's refusal to provide the necessary protection to ensure the species' survival and recovery impermissibly abdicates the agency's obligation to protect species threatened with extinction in the United States, ignores best available science, and directly conflicts with the agency's DPS Policy and the requirements of the ESA. In its court-mandated 12-month Finding, FWS concluded that protecting the wolverine population in the contiguous United States under the ESA is not warranted. FWS first determined that this population does not constitute a DPS under the ESA and

[3] Wolverine foraging, too, may be affected by winter recreation activity, as aerial surveys of wolverine tracks have observed wolverines moving directly through areas impacted by winter recreation activities without searching for food, in contrast to the circling search patterns and digging in the snow documented in other areas of similar habitat that had not been impacted by snowmobiling or heli-skiing. *See* Heinemeyer, *et al.* (2001). This suggests that wolverines need secure areas for foraging as well as for denning, and that winter recreation activities may prevent wolverine use of otherwise productive foraging habitats. *See id.*

as a result the population cannot be separately listed under the ESA. FWS then found that the portion of the wolverine's range lying within the United States is not "significant" to the North American population and therefore, despite the dire status of the species in the contiguous United States, the species is not in danger of extinction throughout a "significant portion of its range." As demonstrated below, both of these conclusions are erroneous and unlawful.

I. The Contiguous United States' Wolverine Population Constitutes a Distinct Population Segment

FWS misapplied its own DPS Policy in deciding that the contiguous United States' wolverine population cannot be listed as an endangered species under the ESA. To the contrary, as the Montana court has already indicated, the best available scientific information strongly supports a DPS determination for this wolverine population as the population is both "discrete" and "significant." *Defenders of Wildlife*, CV 05-99-M-DWM, at *20 n.8 ("Plaintiffs have adequately enumerated why the wolverine's population is discrete and significant in their petition and the Administrative Record further supports this classification.").

A. The Contiguous United States' Wolverine Population Is Genetically Separate From Canadian Populations

First, the contiguous United States' wolverine population is "discrete" because it is "markedly separated" genetically from Canadian populations. As discussed, under FWS's DPS policy, a wildlife population is "discrete" if it is "markedly separated from other populations of the same taxon," and such a separation may be evidenced by "[q]uantitative measures of genetic or morphological discontinuity." 61 Fed. Reg. at 4,725.

Here, FWS's finding observed that the best available science demonstrates genetic discontinuity between wolverines in the lower-48 states and Canadian wolverine populations. For example, FWS observed that "[g]enetic drift has occurred in the remaining populations in the contiguous United States where wolverines contain four of nine haplotypes found in Canadian populations." 73 Fed. Reg. at 12,937. FWS stated that "[t]he reduced number of haplotypes indicates not only that genetic drift is occurring, but also that *there is some level of genetic separation*; if these populations were freely interbreeding, they would share more haplotypes." *Id.* (emphasis added). In fact, the best available scientific information establishes substantial genetic discontinuity between the wolverine population in the contiguous United States and populations in Canada. There is no evidence indicating genetic exchange between Canadian wolverines and the Idaho population. *See* Cegelski, *et al.* (2006).[4] There is also no evidence of migrants or signatures of genetic admixture between wolverine populations in Canada and Wyoming. *See id.* With respect to genetic exchange between wolverines in Montana and Canada,

> [t]he Rocky Mountain Front population had diversity levels comparable to Canada and the assignment test of GENECLASS suggested that *this population had received one*

[4] One recent genetics study concluded that the Idaho wolverine population was completely isolated from all others—including those in the contiguous United States as well as those in Canada. *See* Cegelski, *et al.* (2006). Another determined that Idaho wolverines were genetically similar to those in Montana. *See* Schwartz, *et al.* (2007). Regardless, neither study identified genetic connectivity between Idaho's wolverine population and Canadian populations.

> *recent migrant from the Canadian populations*. However, STRUCTURE *did not detect a signal of admixture among any of the Canadian populations and the Rocky Mountain Front population that would result from ongoing migration*.
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> [D]ata indicated that some migration is occurring between populations in Canada and the Rocky Mountain Front and among populations in the United States (excluding Idaho). However, substantial allele frequency differences suggest that *the number of migrants may not be large enough to counter genetic drift and indicates that migration may be rare and/or not result in successful reproduction*.

Id. at 207, 208 (emphases added). Accordingly, Cegelski, *et al.*, found that "data indicates that *significant differentiation* has resulted between most of the populations in Canada and the United States despite evidence of some migration." *Id.* at 208 (emphasis added). Notwithstanding this scientific information, FWS summarily disposed of the issue of marked separation between wolverine populations in the contiguous United States and Canada, stating that "[t]he U.S. population is connected to wolverine populations in Canada and is likely dependent on them to some degree for maintaining genetic diversity." 73 Fed. Reg. at 12,936.

FWS violated the ESA and its own DPS policy by insisting on complete genetic isolation rather than evidence of genetic discontinuity to satisfy the "discreteness" requirement. The DPS policy makes clear that FWS does not "require absolute reproductive isolation as a prerequisite to recognizing a distinct population segment." 61 Fed. Reg. at 4,724. The policy further states that "the standard adopted does not require absolute separation of a DPS from other members of its species, because this can rarely be demonstrated in nature for any population of organisms." *Id.* If evidence of only "one recent migrant from the Canadian populations" and no "ongoing migration," Cegelski, *et al.* (2006), at 207, suffices to disqualify a population from satisfying the "markedly separated" criterion for discreteness, then these statements in the DPS Policy are meaningless. FWS ignored its own DPS policy and the best available scientific information in the wolverine finding, and therefore failed to properly recognize that the United States' population is markedly separate from Canadian populations due to genetic discontinuity.

B. The U.S.-Canada Border Marks An Appropriate DPS Boundary

Second, the contiguous United States' wolverine population is "discrete" pursuant to the DPS policy because it is delimited by an international boundary across which there are significant differences in the conservation status, level of exploitation, habitat management, and regulatory mechanisms. As a result of these differences, the contiguous United States population of wolverines faces far more serious threats than northern populations, and those heightened threats are significant in light of the ESA listing criteria.

In its March 2008 finding, FWS recounted major differences in conservation status between the wolverine populations in Canada and Alaska, on the one hand, and the wolverine population in the lower-48 states, on the other, including:

- "Throughout its current range in Canada and Alaska, wolverines exist in well-distributed, interconnected, large populations. Conversely, wolverines in the contiguous United States appear to exist in small, fragmented, and semi-isolated populations that put them at greater risk of being lost due to catastrophic or stochastic events than those populations to the north in Canada and Alaska." 73 Fed. Reg. at 12,936.
- "The total population sizes for wolverines in Canada and Alaska, and the contiguous United States, differ by more than an order of magnitude," with estimates of only 500 wolverines in the lower-48 states and more than 23,000 wolverines in Canada and Alaska. *Id.* "Small populations, such as the contiguous U.S. population, face higher extinction risk than large ones such as the Canada and Alaska population." *Id.*
- The effective population size of the lower-48 population is only 39 individuals—which is too low for even "short-term maintenance of genetic diversity"—whereas available information "indicates that the populations in Alaska and Canada are less vulnerable to extinction pressures associated with a low effective population size." *Id.* at 12,937; *see also id.* ("The small effective population size in the contiguous United States contrasts with the situation in Canada and Alaska where wolverines are relatively abundant and exist in habitats with a high level of connectivity.").
- "Wolverine habitat in the contiguous United States consists of small, isolated 'islands' of high-elevation, alpine habitats containing sufficient depth of snow during the denning period, separated from each other by low valleys of unsuitable habitats." *Id.* "The low population densities and reduced genetic diversity of wolverines in the contiguous United States means that, to avoid further inbreeding or local extirpation due to demographic stochasticity, regular exchange of individual wolverines between islands of habitat must occur." *Id.* "Wolverine populations in the Canadian Rockies also exist on habitat islands, but the islands are much larger and host larger populations so that exchange of individuals is likely to be less critical for short-term maintenance of genetic diversity and demographic stability." *Id.* at 12,937-38 (citation omitted).

Nevertheless, despite acknowledging these stark differences in conservation status defined by the U.S.-Canada border, FWS dismissed them as irrelevant to the DPS inquiry by repeatedly concluding its discussions of these differences with the erroneous refrain that "they are not significant in light of section 4(a)(1)(D)" of the ESA. *Id.* at 12,937, 12938.

In so doing, FWS again violated the ESA and the DPS policy. The policy calls on FWS to determine whether observed differences in "conservation status" across international boundaries "exist that are significant in light of section 4(a)(1)(D) of the Act." 61 Fed. Reg. at 4,725. The inquiry mandated by ESA section 4(a)(1)(D), 16 U.S.C. § 1533(a)(1)(D), is "whether any species is an endangered species or a threatened species because of … the inadequacy of existing regulatory mechanisms." Thus, FWS was required to determine whether observed differences in the wolverine's conservation status in the lower-48 states, as compared to its conservation status in Canada, are significant in light of the statutory question whether existing regulatory mechanisms are adequate to safeguard the species. FWS did not undertake this inquiry. Instead, FWS dismissed the major differences in conservation status of the wolverine on either side of the U.S.-Canada border as "not significant in light of section 4(a)(1)(D)," 73 Fed. Reg. 12,937, 12,938, without ever addressing the question whether the wolverine population's more imperiled conservation status on the U.S. side of the Canadian border is significant in determining whether existing regulatory mechanisms are adequate to protect the contiguous U.S. population.

Indeed, FWS appears to have attempted to rewrite the ESA section 4(a)(1)(D) listing factor for purposes of the wolverine DPS analysis by asserting that the differences in the wolverine's conservation status across the U.S.-Canada border are irrelevant to the DPS inquiry unless they are "*a result of* inadequate regulatory mechanisms." 73 Fed. Reg. 12,938, 12,940 (emphasis added). In other words, FWS focused solely on the question whether the wolverine's precarious status in the lower-48 states *was caused by* inadequate regulatory mechanisms. It did not focus on the question that is actually posed by ESA section 4(a)(1)(D): whether inadequate regulatory mechanisms *are themselves cause* to list the lower-48 wolverine population as endangered or threatened given its precarious status. The wolverine's smaller, more fragmented populations in the lower-48 states; dramatically lower effective population size in the lower-48 states; and more isolated habitat in the lower-48 states all are highly significant to the inquiry whether existing regulatory mechanisms are sufficient to ensure this population's continued existence. FWS, however, failed even to consider the issue.

The same flawed approach infects FWS's assessment of differences in control of wolverine exploitation in the lower-48 United States compared to Canada and Alaska. FWS found that regulation of wolverine trapping in Canada varies by province and even by local trapping region, and that this treatment of the wolverine differs from that afforded in the lower-48 states. 73 Fed. Reg. at 12,939. In FWS's 2000 listing rule for the Canada lynx, FWS relied upon a similar finding to justify treating the lower-48 United States lynx population as a DPS. In that listing rule, FWS stated that,

> in Canada, lynx harvest regulations, such as length of season and quotas, vary, being regulated by individual Provinces or, in some cases, individual trapping districts. Therefore, we conclude that the contiguous United States population of the lynx is discrete based on the international boundary between Canada and the contiguous United States due to differences in management of lynx and lynx habitat.

65 Fed. Reg. 16,052, 16,060 (2000). In stark contrast to this conclusion, FWS in the wolverine finding determined "that the differences in control of exploitation between the United States and Canadian wolverine populations are not significant in light of section 4(a)(1)(D) of the Act because in both countries exploitation appears to be adequately regulated according to what the overall population can sustain." 73 Fed. Reg. at 12,939.

In so concluding, FWS again failed to consider the more imperiled circumstances of the lower-48 wolverine population and the resulting need for more stringent regulatory protections than may be needed to conserve more robust Canadian populations. FWS apparently considered only whether trapping mortality of wolverines in Canada, Alaska, and the lower-48 United States exceeds the basic 6 percent threshold that research suggests is necessary for a sustainable population. *See id.* Yet to focus on an overall trapping mortality level across all of the species' remaining range in the lower-48 states is misleading in assessing the impacts of exploitation. Nowhere did FWS assess the specific needs of the lower-48 wolverine population to be free from documented excessive trapping exploitation in "island" mountain ranges—such as the Pioneer, Beaverhead, Anaconda-Pintler, and Flint Creek Mountain Ranges discussed *supra*—located between remaining wolverine population centers, or to have access to refugia of sufficient size to ensure that trapping does not lead to population declines. FWS ignored this key factor despite acknowledging that "[t]he low population densities and reduced genetic diversity of wolverines in the contiguous United States means that, to avoid further inbreeding or local extirpation due to demographic stochasticity, regular exchange of individual wolverines between islands of habitat must occur." *Id.* at 12,937. FWS even stated that,

although "protection and intensive management are not necessary to conserve wolverines in western Canada[, t]his situation contrasts with the situation in the contiguous United States, where habitat is fragmented and limited to higher elevations over portions of four States." *Id.* at 12,939. Despite recognizing these factors, FWS failed to undertake the key inquiry whether the highly imperiled circumstances of the lower-48 states' wolverine population render inadequate those regulatory mechanisms to control wolverine exploitation that might be adequate for the larger and more well-distributed wolverine populations persisting in Canada and Alaska. For this reason too, FWS erred in its discreteness determination.

C. The Contiguous United States' Wolverine Population Satisfies The Significance Criterion

Although the Service did not reach the issue, the best scientific data available establishes that the United States' wolverine population is ecologically, biologically and genetically *significant* to the taxon as a whole. The lower-48 wolverine population is "significant" because its loss "would result in a significant gap in the range" of the species. 61 Fed. Reg. at 4,725; *see* Aubry *et al.* Loss of the lower-48 wolverines would eliminate a substantial portion—and the most southerly extensions—of the species' range in North America, yielding a significant gap in both the current and historic wolverine range, either of which would satisfy the DPS criteria. *See National Ass'n of Home Builders v. Norton*, 340 F.3d 835, 847-49 (9th Cir. 2003) (discussing the "gap in range" DPS consideration and citing numerous FWS findings determining consideration satisfied due to loss of current and/or historic range). In addition, as discussed *supra*, the contiguous United States' wolverine population differs markedly from populations persisting in Canada and Alaska in its genetic characteristics. *See* 61 Fed. Reg. at 4,725. Accordingly, this population satisfies the "significance" criterion for DPS designation as well.[5]

II. The Wolverine Is Endangered Throughout a Significant Portion of Its Range

FWS also violated the ESA by concluding that the wolverine's remaining range in the lower-48 United States does not constitute a "significant portion" of the species' range under the ESA, and, therefore, that the wolverine could not be listed as endangered or threatened throughout this portion of its range. The best scientific and commercial data available firmly establish that the range of the wolverine is severely diminished. Having been extirpated from large portions of its historic range, particularly in California, Utah, Colorado, and the Great Lakes Region, the wolverine's range within the contiguous United States is now limited to Idaho, Montana, Washington and Wyoming.

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[5] As set forth in the text above, the contiguous United States' wolverine population satisfies all requirements for designation and listing as a DPS under FWS's policy. However, if, contrary to the discussion above, the listing cannot be supported under the DPS Policy and, therefore, the wolverine may be allowed to go extinct in the contiguous United States, then the policy is illegal and cannot be reconciled with the ESA. As the language and legislative history of the ESA make clear, ensuring that the FWS could adequately protect U.S. populations that are threatened with extinction, *regardless* of the species' relationship to members of the species found elsewhere in the world, is *precisely* what Congress intended when it authorized the listing of DPSs. Thus, if the DPS Policy prohibits listing of the wolverine in the contiguous United States based on the failure to establish its discreteness and its significance to the species' global population, the policy and the FWS's reliance on it to deny protections for the wolverine violate the ESA.

See 73 Fed. Reg. at 12,934; *see also Defenders of Wildlife*, at *12 (the court acknowledged the existence of "substantial information [that] show[s] that wolverine's range is a fraction of what it once was").

Ignoring this substantial reduction in the species' range, and the plain meaning and intent of the ESA, FWS concludes the wolverine does not warrant the protections of the ESA. In so concluding, FWS contends that a "portion of a species' range is *significant* if it is part of the *current range of the species* and is *important to the conservation of the species*." 73 Fed. Reg. at 12,940 (emphasis added). Under this construct, FWS determines whether the portion of the population under consideration is biologically "significant" to the species as a whole in that its "contribution [to the species' conservation] must be at a level such that its loss would result in a decrease in the ability of the species to persist." *Id.* In doing so, incredibly, FWS uses the wolverine's imperiled status to argue against any obligation to protect the species, claiming that the contiguous United States' wolverine population is not significant because it has been reduced to nearly a remnant population, accounting for only two percent of the species' total population, and relegated to a few fragmented, non-unique habitat areas. *See id.* at 12,940-41. Thus, FWS bases its refusal to list the wolverine in the contiguous United States on the population's critically imperiled status. That conclusion is antithetical to the plain meaning and intent of the Act.

Based on the ESA's plain language, the reduction in the species' range alone is sufficient to warrant a determination whether listing of the wolverine is appropriate. Indeed, a species may be endangered throughout a significant portion of its range "if there are major geographical areas in which it is no longer viable but once was." *Defenders of Wildlife v. Norton*, 258 F.3d 1136, 1145 (9th Cir. 2001). Here, wolverines have been extirpated from vast portions of their historic range east of the Rockies, as well as the southern Rockies and California, and today persist in only a small fragment of their historic range in the northern Cascades and northern Rockies. 73 Fed. Reg. at 12,934 ("Historical wolverine records were found across the northern tier of the lower 48 States with peninsular extensions south into the southern Rockies and the Sierra Nevada"). FWS further acknowledges that "[l]arge areas of habitat with characteristics suitable for wolverines still occur in the southern Rocky Mountains and Sierra Nevada where wolverines have been extirpated." *Id.* at 12,935. The Service's refusal to list the wolverine, notwithstanding this tremendous reduction in the species' range, violates the Act.

In addition, FWS's insistence that a portion of a species' range may be deemed "significant" only if "its loss would result in *a decrease in the ability of the species to persist*," 73 Fed. Reg. at 12,940 (emphasis added), repeats a statutory interpretation argument that the Ninth Circuit Court of Appeals has deemed "unacceptable." *Defenders of Wildlife*, 258 F.3d at 1142. In the *Defenders of Wildlife* case, as here, FWS interpreted the phrase "significant portion of its range" to mean "that a species is eligible for protection under the ESA if it 'faces threats in enough key portions of its range that the *entire species* is in danger of extinction, or will be within the foreseeable future.'" *Id.* at 1141 (emphasis in original). The Ninth Circuit held that this construction impermissibly read the statutory terms "'all' and 'a significant portion of its range'" in 16 U.S.C. §§ 1532(6) and (20) "as functional equivalents." *Defenders of Wildlife*, 258 F.3d at 1142. FWS repeats that same error here.

FWS's interpretation of the "significant portion of its range" language in the wolverine finding also turns Congress' intent on its head. Congress added this language to the ESA to provide for "the possibility of declaring a species endangered within the United States where *its principal range is in another country, such as Canada or Mexico, and members of that species are only found in this country insofar as they exist on the periphery of their range*." H.R. Rep. No. 93-412, at 10 (1973) (emphasis added). Yet here

FWS determined that the wolverine's range in the contiguous United States does not qualify as "significant" precisely *because* it "exist[s] on the periphery of [the wolverine's] range." *Id.*; *see, e.g.*, 73 Fed. Reg. at 12,941 ("The portion of the range that extends into the contiguous United States is small in relation to the entire range of the subspecies."). The approach adopted by FWS in the wolverine finding would preclude ever deeming such "peripheral" ranges to be "significant" under the ESA as Congress intended. Congress did not enact the ESA with the intent to impoverish the contiguous United States' biological diversity merely because imperiled resident species still persist in other nations. FWS in the past has recognized the congressional purpose to preserve the wildlife heritage of the contiguous United States by listing species such as the grizzly bear, the gray wolf, and the bald eagle in the lower-48 United States despite their expansive ranges in Canada and Alaska. FWS's failure to equally conform its action to Congress' intent in the wolverine finding violates the ESA.

Alternatively, even under FWS's construct of what constitutes a "significant portion of its range," the contiguous United States' population qualifies. In the notice, FWS announces a test for significance based on whether the population contributes to the resilience, redundancy, and representation of the species. *Id.* at 12,940-41. Here, the wolverine population found across the entire United States northern Rockies and Pacific Northwest regions—representing the southernmost extent of the species range, which includes high-elevation areas that may serve as potential refuges against climate change effects—contribute to the biological integrity of the overall wolverine population. Therefore, the United States population is a significant portion of the species range, and a contrary determination ignores the best available science in violation of the ESA.

Conclusion

As set forth in this letter, the FWS violated the ESA in its March 11, 2008 determination that the petition to list the North American wolverine in the contiguous United States is not warranted for listing. Unless, within 60 days of its receipt of this letter, the FWS issues a finding that listing of the wolverine as an endangered or threatened species under the ESA is warranted, Defenders of Wildlife, the Center for Biological Diversity, Conservation Northwest, Friends of the Clearwater, Greater Yellowstone Coalition, Idaho Conservation League, Jackson Hole Conservation Alliance, Klamath-Siskiyou Wildlands Center and the Wyoming Outdoor Council will institute a legal action to challenge the Service's determination in federal district court.

Sincerely,

Timothy J. Preso