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WESTERN ENVIRONMENTAL LAW CENTER

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Sent via e-mail, hand-delivery, and Fed Ex

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Re: Sixty-day notice of intent to sue over decision to withdraw proposed rule to list wolverine.

Secretary Bernhardt and Director Skipwith:

The Western Environmental Law Center (WELC) provides this sixty-day notice of intent to sue the U.S. Fish and Wildlife Service (the Service) for violations of the Endangered Species Act (ESA), 16 U.S.C. § 1533, when deciding – once again – to withdraw the proposed listing rule for the distinct population segment (DPS) of North American wolverine (*Gulo gulo lucus*) occurring in the contiguous United States (hereinafter “wolverine”).

This notice is provided by WELC on behalf of the following organizations (and one individual): WildEarth Guardians, Friends of the Bitterroot, Friends of the Wild Swan, Swan View Coalition, Oregon Wild, Cascadia Wildlands, Alliance for the Wild Rockies,

Cottonwood Environmental Law Center, George Wuerthner, Footloose Montana, Native Ecosystems Council, Wildlands Network, Helena Hunters and Anglers Association, and Kootenai Environmental Alliance.

These organizations (and one individual) have a significant interest in ensuring the long-term survival and recovery of wolverine in the contiguous United States and ensuring the Service complies with the ESA and utilizes the best available science when making listing decisions.

The wolverine is a relic of the last ice age – a species custom built for life in the cold ecological zone. Physiologically, the wolverine’s traits, including its large paws and low foot loadings, crampon-type claws, hydrophobic frost resistant hair (and double-fur coat), and low threshold of thermo-neutrality make it custom-built for cold snowy conditions. Wolverines depend and rely on snow for their existence at the most fundamental levels, including denning.

In February 2013, the Service published a proposed rule to list wolverine as a threatened species under the ESA. *See* 78 Fed. Reg. 7864 (February 4, 2013). This decision was premised on the Service’s careful review and evaluation of the best available science, including published and peer-reviewed scientific papers on the present and future threats to wolverine from climate change and the anticipated decrease in snowpack, as well as other cumulative threats from small population size, genetic threats, and human-caused mortalities. 78 Fed. Reg. at 7886.

In August 2014, however, the Service abruptly reversed course and withdrew its proposed rule to list wolverine as a threatened species. 79 Fed. Reg. 47522 (August 13, 2014). The reasons given for this reversal included “evidence” of wolverines expanding their range (due in large part to a single male traveling into Colorado), some scientific uncertainty over the obligate relationship between wolverines and snow beyond the denning scale, and the agency’s inability to make any “definitive conclusions” about the amount and persistence of snow at the denning scale and how the species will respond to climate changes.

In response, the organizations listed on this sixty-day notice (as well as others) challenged the August 2014 decision not to list wolverine as a threatened species as arbitrary, capricious, and not in accordance with the ESA.

In April 2016, the U.S. District Court in Montana largely agreed, holding the Service’s decision not to list wolverine was arbitrary and failed to comply with the ESA.

See Defenders of Wildlife v. Jewell, 176 F. Supp. 3d 975, 1011 (D. Mont. 2016). The Court agreed that the Service's threats assessment failed to utilize the best available science on the threats posed by climate change and small population size (and lack of genetic diversity) and failed to properly evaluate whether the species qualifies for listing in a significant portion of its range. *Id.* The court vacated the Service's August 2014 withdrawal of the proposed rule (thereby reinstating the February, 2013 proposed rule to list) and remanded the matter back to the agency for further consideration consistent with its April 2016 order. *Id.*

In response, the Service announced yet another decision to withdraw the proposed rule to list the wolverine as a threatened species on that grounds that wolverine do not qualify as either a "threatened" or "endangered" species under the ESA (hereinafter "listing decision" or "decision"). This decision was published in the Federal Register on October 13, 2020 (Docket No. FWS-R6-ES-2016-0106).

As required by the ESA, 16 U.S.C. § 1540(g), the Service is put on notice that this new decision is arbitrary and capricious and violates the ESA for the following reasons:

1. *Failure to carefully analyze and evaluate the five threat factors.*

Under Section 4(a)(1) of the ESA, the Service is required to determine whether a species is threatened or endangered because of any of the following factors: (A) the present or threatened destruction, modification, or curtailment of the species' habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; and (E) other natural or man-made factors affecting the species' continued existence. 16 U.S.C. § 1533(a)(1).

These "five threat factors" are listed in the disjunctive so any one or combination of them can be sufficient for a finding that a species qualifies as threatened or endangered. In deciding not to list wolverine, the Service failed to carefully analyze and evaluate these five threat factors (individually and in the aggregate) in accordance with the ESA and the Service's implementing regulations and own policies.

The Service failed to adequately analyze and evaluate how climate change and other threats (including, but not limited to, winter recreation, development, small population size, low genetic diversity, increased fragmentation) has, is currently, and will likely adversely impact, modify and curtail the wolverine's habitat (denning and foraging) and range in the contiguous United States (factor A). This includes how climate

change and other threats will result in the decrease in available denning (and foraging) habitat and range and increase in habitat fragmentation in the lower 48 (which will negatively affect meta-population dynamics and the wolverine's ability to move between subpopulations).

The Service also failed to adequately analyze and evaluate the threats from factor (B) (overutilization) and factor (C) (disease and predation) and erroneously discounted and did not adequately consider the inadequacy of existing regulatory mechanisms (factor D). This includes but not limited to how the lack of guidance in state wildlife and resource management plans, National Forest Plans, National Park Service management plans, and BLM resource management plans and the lack of any binding international, national, or state level regulatory mechanisms to address greenhouse gas emissions may directly, indirectly, or cumulatively affect wolverines.

The Service dismisses trapping (incidental) as a threat to wolverine, relying primarily on the current (but not permanent) lack of direct trapping in the lower 48 and trapping records from Alaska and Canada. But the problem in the lower 48 is not intentional trapping but incidental trapping mortality which (unlike in Alaska and Canada) is a serious threat to wolverine subpopulations in the lower 48 and can be the difference between a source or a sink population (as revealed by the Glacier National Park study). Incidental mortality from trapping also likely impacts young dispersing individuals at a disproportionate rate, thereby adversely affecting gene flow. Squires (2007) and Krebs (2004) both make it clear that trapping is also additive mortality. It is only sustainable in Canada because of their source-sink harvest structure (Mowat (2019)).

The Service also failed to adequately analyze and evaluate how other natural or manmade factors (factor E) may affect the wolverine's existence, including (but not limited to) climate change (loss of snowpack for denning, increase in habitat fragmentation, increased wildland fires, etc..) small population size, genetic threats to wolverines from low levels of genetic diversity, inbreeding depression, demographic and environmental stochasticity, isolation and lack of migration from wolverines in Canada, isolation among subpopulations, and the species' overall small population size (total and effective) in the contiguous United States. Nor did the Service adequately analyze and evaluate how these threats may – in the aggregate – cumulatively impact the wolverine and its ability to persist in the lower 48 states now and into the foreseeable future.

The Service also erroneously discounted and did not adequately analyze the total combined and cumulative impacts of climate change and loss of snow in denning

habitat, winter recreation (which, as a result of climate change, will be confined to fewer and smaller places as snowpack declines), increases in habitat fragmentation and loss of connectivity between subpopulations in the lower 48 and between wolverine in the lower 48 and Canada (breaking down meta-population dynamics), an extremely small total and effective population size, transportation corridors, travel planning, development, fires and forest management, trapping (for both other species in occupied wolverine habitat), and other activities on wolverines. This includes how such threats may individually or in the aggregate affect individual wolverines, wolverine range and habitat (denning and foraging), and wolverine movement and connectivity.

The Service also failed to assess the five threat factors (individually and in the aggregate) to wolverine across “a significant portion of its range” as required by Section 4(a)(1) of the ESA. No evaluation or analysis is provided (just an unsupported conclusion). Nor is such an evaluation or analysis provided in the species status assessment (SSA).

When evaluating the five threat factors, the Service also failed to support its findings with sufficient and reliable evidence, including, as mentioned below, the best available, peer-reviewed science on wolverine and threats to wolverine in the contiguous United States. The Service also ignored concerns raised during the peer review process and relied on unproven and unreliable methods and assumptions to support its findings and failed to properly define the wolverine’s range (both historic and present) and habitat within the contiguous United States.

In addition, the Service failed to adequately consider historic population numbers (actual and trend) and current population numbers (actual and trend) and accurately estimate population densities. The Service also focuses on the 3Rs metric – representation, redundancy, and resiliency – but neglects to adequately consider and evaluate how to alleviate the threats to achieve adequate representation, redundancy, and resiliency. The 3Rs metric also impermissibly narrows what is relevant in assessing ESA status for a species because it, among other things, prevents any area that currently lacks a recovered population from being considered a “significant” portion on the ESA’s definition of threatened and endangered species. As a result, this metric is contrary to the conservation purposes of the ESA. 16 U.S.C. § 1531(b).

2. Failure to utilize the best available science.

Under section 4(b)(1)(A), 16 U. S.C. § 1533 (b)(1)(A), the Service's implementing regulations, and the Service's 2011 policy on scientific integrity, the Service must make all listing determinations "solely on the basis of the best scientific and commercial data available." The Service failed to do so when deciding – once again – to withdraw the proposed listing rule.

In deciding not to list wolverine, the Service failed to utilize the best available science on: (1) the ecological and physical needs of wolverine in the lower 48; (2) the species' obligate relationship with cold climates and snow, especially for denning and its ability to adapt to climate change; (2) the wolverine's range (historic and current) and connectivity between wolverine in the lower 48 and Canada and between subpopulations in the lower 48; and (3) the current and foreseeable future threats to wolverine in the contiguous United States, including but not limited to, threats from climate change (increased temperatures and decreased snowpack in the western United States), increased habitat fragmentation, loss of meta-population dynamics, small population size (census and effective), genetic threats, winter recreation, incidental human-caused mortality, and the synergistic or cumulative impacts to wolverine in the lower 48 from these multiple stressors or threats.

The Service also never completed a population viability analysis (PVA) for wolverine (despite the agency's recognition that one was needed and despite the fact that such models are typically done prior to making such listing decisions). Nor did the Service estimate minimum population viability.

The Service's decision is also premised on a fundamental misunderstanding, misrepresentation, and misapplication of the best available science on wolverine, habitat needs, range (historic and current) and population size, connectivity, and threats, including climate change threats. This includes creating and then attacking a false narrative about the findings in two seminal papers, Copeland (2010) and McKelvey (2011).

For example, the Service routinely states that wolverine dens have been found outside Copeland (2010)'s snow model but that is consistent with the paper itself (the model captured 97 percent (not a 100 percent) of the dens). Notably, all dens documented outside the model were all *in snow* and every den in the contiguous United States (the DPS's range) are in deep, persistent spring snow. The Service also criticizes Copeland (2010) for not evaluating/modeling snow persistence at the den site scale

based on location and denning period but neither did any of the papers cited by the Service in the SSA and decision. The Webb papers relied on only considered how their dens were spatially congruent with the Copeland (2010) snow model and Persson provided little more than opinion (no actual measurements).

One common theme throughout the Service's decision is its focus on creating a false narrative - the proverbial strawman – and then spending its time and energy attacking it. So instead of reviewing and evaluating the best available science – including the new climate change papers and estimates for declining snowpack in the West (many of which reveal the impacts will likely be more severe than predicted in McKelvey (2011)), science on genetic threats, and science on connectivity – the Service (with the push from the states) narrowly focused in on trying to poke holes in previous papers relied on.

The Service, for instance, relies heavily on Webb (2016) to try and counter Copeland (2010) and Ray (2017) to try and counter McKelvey (2011) but no conflict exists between these papers and their findings. Notably, while Ray (2017) does include a number of problematic assumptions and biases (regarding snow depth, historic averages, scale, elevation of den sites and projected snow loss) the paper's results differ little from McKelvey (2011), and, in fact, provide a more conservative estimate of future snow pack than McKelvey (2011).

The Service also pokes holes in various published papers (e.g., Inman (2013), Schwartz (2009), and Heinemeyer (2019)) but relies on its own unsupported opinions in doing so and provides not additional science or data to fill the gaps it created. These and other papers are and remain the best available science (notably, large portions of the decision include various assumptions and statements and findings that are unsupported – no citations provided – or merely rely on “personal communications” instead of published papers). For example, the Service says Schwartz (2009) missed subpopulations and thus underestimated its results. But Schwartz (2009) never suggested its estimates included areas that were not sampled.

A number of important scientific studies relevant to wolverine and the threats the species that emerged since the *Defenders of Wildlife* decision in 2016 are also missing, were never discussed or cited in the SSA or decision, and were likely ignored by the agency. These include but are not limited to the following (all of which are provided to the Service with this notice letter):

- Balkenhol (2020) (landscape genetics of wolverines);

- Batllori (2017)(climate displacement in North America);
- Bonamy (2019)(human-wolverine interactions in NW Canada);
- Copeland (2017) (social ethology of wolverine);
- Dilkina (2016) (trade-offs and efficiencies in species' corridors);
- Dobrowski (2016) (climate change velocity underestimates exposure);
- Fyfe (2016)(loss of snowpack in the western United States in the next 30 years);
- Gergel (2017)(effects of climate change on snowpack in western US);
- Gonzalez (2018) (magnitude of climate change in US National Parks);
- Halofsky (2018) (climate change vulnerability and adaptatation);
- Heim (2017)(cumulative effects of climate and landscape change on wolverine);
- Kortello (2019)(influences on wolverine distribution in southern Canada);
- Kukka (2017)(population characteristics of wolverine in NW Canada);
- Luce (2018) (effects of climate change on snowpack in N. Rockies);
- Lukacs (2020)(wolverine occupancy, distribution, and monitoring);
- Marshall (2019)(changes in snowpack in western US);
- Mote (2018)(dramatic declines in snowpack in western US);
- Mowat (2019) (wolverine trapping in southern Canada);
- McKelvey and Buotte (2018)(effects of climate change on wildlife);
- Pozzanghera (2016)(variable effects of snow conditions on wolverines);

- Sander-Demott (2019)(soil warming and winter snowpacks);
- Sawaya (2019)(demographic fragmentation of wolverine);
- Scalzitti (2016) (climate change impact on western snowpack);
- Scrafford and Boyce (2018) (wolverine foraging behavior);
- Scrafford (2018) (roads elicit negative movement and habitat responses);
- Stewart (2017)(climate change loss and fragmentation in Sierras); and
- Whitlock (2017)(Montana climate assessment).

Further, an entire body of scientific papers and information on various threats to the species including the genetic threats facing wolverines in the contiguous United States – many of which were discussed and included in the proposed listing rule – were arbitrarily dismissed by the agency without sufficient justification (or were ignored). These include Kyle and Strobeck (2001), Cegelski (2003), Cegelski (2006), Schwartz (2007), and Schwartz (2009).

Also notably absent from the decision is much (if any) reference to or coordination with the leading, peer-reviewed research and papers from the Rocky Mountain Research Station in Missoula, Montana from many of the leading wolverine biologists who worked on and contributed to the proposed listing rule. The Service insists it “coordinated extensively with many wolverine researchers in the United States (including Alaska), Canada, and Scandinavia” but FOIA response documents reveal that in reality coordination was largely limited to only two wolverine researches (Inman and Magoun) who have voiced their opposition to wolverine listing from the very beginning (and for policy/non-scientific reasons). All other wolverine biologists were only contacted early in the process while Inman and Magoun provided input throughout the entire process (and likely played a major role in the SSA and decision).

In place of the best available science, including published and peer reviewed papers, the Service also routinely and arbitrarily relies on private “personal communications” or unsupported statements and conclusions. This is particularly true when discussing the “needs” of wolverines and threats from small population size, genetics, and climate change.

The Service, for example, asserts wolverines have a “need” for large and exclusive territories and inaccessible landscapes. But wolverines have no such “need.” Territories tend to be what one would consider to be large relative to the wolverine’s body size but territories are only as large as the individual’s life history requirements necessitate. Wolverines don’t “need” large territories – territory size develops based on food availability, which only varies as much as necessary (again, not a “need”). The vast majority of the wolverine’s distribution occurs in flat, subarctic habitats. Rugged terrain is not a “need,” it is simply representative of climatically favorable habitat that occurs in the western United States.

The Service maintains it now knows that wolverines can and have dened outside of “heavy” snowpack. But what does “heavy” mean? And, the best available science reveals wolverines have not dened outside areas of deep, persistent snow in the contiguous United States, where the DPS resides. The Service says “areas of significant snowpack will likely persist in the future in areas where wolverines are known to den at levels that will continue to support wolverines” but there is no evidence that this particular snowpack will support wolverines. We only know that deep snowpack is strongly correlated with wolverine reproduction in the western United States.

The Service also cherry-picks from the available scientific literature (e.g., Cegeliski (2006)) and data and misinterprets many of the new, post-2016 studies it relies on (most of which recognize Copeland (2010) and McKelvey (2011) as the best science and include similar findings from these papers).

One example: even though the overwhelming majority of all wolverine dens found world-wide and *all* dens in the contiguous United States (where the DPS is located) occur in deep, persistent snow, the Service chose to focus and rely on the few dens in the Boreal Forest of Canada and dens in Scandinavia that occurred in shallow snow areas. Also, the Service says recent surveys of wolverines in a four-state region “offer recent evidence that wolverines continue to be observed across a large area of the western United States” but neglect to also note that these same surveys also show evidence of wolverine absence in areas where they would be expected to be observed.

The Service also relies on studies, data, and information that: (1) involve other regions of the globe and are irrelevant or less informative to wolverine and threats to the DPS, i.e., wolverine in the contiguous United States (e.g., the Service’s heavy reliance on studies from northern Canada’s Boreal Forest and Scandinavia); (2) are outdated (many date back to the 1960s) and provide little insight into current knowledge; and/or (3) include faulty assumptions and/or misleading baseline data

about climate change (including using the hottest years on record – 2000 to 2013 – as an “historic average”), warming trends, snowpack, wolverines (including their ability to adapt), and wolverine habitat and denning requirements (including how to define “deep snow” for denning purposes), and how the species will be impacted by climate change and small population size in the foreseeable future.

The Service also makes a number of scientifically unsupported conclusions and assumptions throughout its decision not to list wolverines including, but not limited to, assumptions about: (1) the wolverine’s ability to adapt to warming trends and loss of snowpack (no scientific support for this and Copeland (2010) suggests otherwise); (2) wolverines utilizing a “variety of habitats” (wolverines use different substrates but they only occupy a very narrow cold climate ecological zone); (3) the lack of an obligate relationship between wolverine denning and spring snowpack and the amount of snow needed for denning (the Service assumes, for example, that 0.5m (20”) is significant snowpack and sufficient for denning and uses a small sample size and outliers to try and refute the best science); (4) population level effects; (5) wolverine abundance and expansion and the lack of decline (unsupported – many subpopulations are blinking out of area’s where they were previously documented, including parts of Idaho and Montana); (6) the impacts of winter recreation (which are more significant than portrayed in then decision); (7) where, how, and at what elevation wolverines den in the contiguous United States; (8) connectivity between wolverines in the lower 48 and Canada and between subpopulations in the lower 48 (and that a single male dispersal event in Colorado and California is “evidence of connectivity” and “gene flow”); (9) snow conditions in the “non-snow dens;” (10) the certainty of the science and how to far out to define the foreseeable future; (11) why certain threats are trivial and/or do not result in population level impacts; (12) the wolverine population currently functioning as a meta-population in the lower 48 (subpopulations in the contiguous United States are fragmented and are becoming increasingly so in the response to climate change);(13) wolverine having sufficient representation, redundancy, and resiliency in the lower 48; (14) that wolverine do not exist on “habitat islands” in the lower 48; (15) that trapping along the southern Canadian border is not a problem for movement and migration and is sustainable; (16) that wolverine in the lower 48 are not “genetically isolated;” and (17) that the wolverine’s physical and ecological “needs” do not include snow or cold climate conditions. In its decision, the Service also suggests that a species with a naturally low population density is somehow less susceptible to extirpation than a population driven to low density. There is no scientific support for this proposition.

Many of these scientifically unsupported conclusions and findings – which the decision is premised on – were called out and questioned during the peer review

process and public input process by wolverine experts. The Service chose to ignore these concerns.

The Service also violated section 4 of the ESA's best available science requirement by insisting on more specific information, more precise data, and more certainty about wolverine, the species' relationship with deep snow (and knowingly precisely why wolverines rely on deep snow for denning), and how wolverine will precisely respond to climate change and other threats (small population size, winter recreation) *before* providing protective status under the ESA.

The ESA's best available science standard does not require scientific certainty (assuming it even exists) or prohibit the Service from making listing decisions in the face of uncertainty or even scientific disagreement. On the contrary, reliance upon the best available science, as opposed to requiring absolute scientific certainty, "is in keeping with congressional intent" that an agency "take preventive measures *before* a species is 'conclusively' headed for extinction." *Defenders of Wildlife v. Babbitt*, 958 F. Supp. 670, 679–80 (D.D.C.1997) (emphasis in original); *see also American Wildlands v. Norton*, 193 F.Supp.2d 244, 251 (D.D.C.2002) (same); *Ariz. Cattle Growers' Ass'n v. Salazar*, 606 F.3d 1160 (9th Cir. 2010) (same).

As such, and contrary to the Service's listing decision, "definitive conclusions" or knowing precisely how a species will respond to specific threats are not required. And imposing such a high standard will deprive many species facing significant future threats from climate change – like wolverine –from obtaining the protective status they deserve. Indeed, this is precisely one of the reasons the Court found the Service's 2014 decision denying ESA protections to the wolverine invalid:

[T]he Service's stance here borders on the absurd—if evidence shows that wolverines need snow for denning purposes, and the best available science projects a loss of snow as a result of climate where and when wolverines den, then what sense does it make to deny that climate change is a threat to the wolverine simply because research has yet to prove exactly why wolverines need snow for denning? There is near universal agreement that wolverines require deep snow for reproductive denning purposes.

Defenders of Wildlife v. Jewell, 176 F. Supp. 3d at 1004. The Court concluded:

No greater level of certainty is needed to see the writing on the wall for this snow-dependent species standing squarely in the path of global climate change. It has taken us twenty years to get to this point. It is the undersigned's view that if there is one thing required of the Service under the ESA, it is to take action at the earliest possible, defensible point in time to protect against the loss of biodiversity within our reach as a nation.

Id. at 1011.

As explained by the Service when listing Canada lynx: "We agree that additional studies of lynx are necessary to better understand the dynamics and requirements of lynx populations in the contiguous United States . . . However, the [ESA] does not allow us to defer a listing decision based on the need for more research. Most scientists would agree that there is always a need for more research, but listing decisions cannot be postponed based on this premise when known threats to the species are present that may result in a species' trend toward extinction." 65 Fed. Reg. 16052, 16064 (March 24, 2000); *see also* 55 Fed. Reg. 26114, 26128 (June 26, 1990)(Northern spotted owl) (because the Service used "the best data available . . . [it was] not obligated to have data on all aspects of a species' biology prior to reaching a determination on listing."); 61 Fed. Reg. 25813, 24817 (May 23, 1996) (California red-legged frog) (deciding to list species even though many aspects of the species' status were "not completely understood"). A similar approach should have been (but was not) applied with respect to wolverine.

3. *Misinterpretation and misapplication of the term "threatened" under the ESA.*

Under the ESA, a species is "threatened" if it is "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." 16 U.S.C. § 1532(20).

In deciding to withdraw the proposed wolverine listing rule, the Service misinterpreted and misapplied the definition of "threatened" and the terms included therein.

This Service misinterpreted and misapplied the term "likely to become endangered." "[L]ikely' clearly means something less than 100% certain, but how much less is not as clear." *See Trout Unlimited v. Lohn*, 645 F.Supp. 2d 929, 945 (D. Or. 2007). A reasonable construction of "likely" is at least a 50% chance (more likely than not). *Id.* at 949. In any case, the level of certainty relied upon by the Service must be based on

consideration of the relevant statutory factors using the best available science. *Id.* at 947. The term “in danger of extinction” is not a fixed term and its construction must be grounded in the best available science. *See id.* at 948. Certainly, “in danger of extinction” does not mean a “high risk of extinction.” *Western Watersheds Project v. Foss*, 2005 WL 2002473, *17 (D. Id. 2005). “Instead, the required danger level for extinction necessarily depends on the applicable scientific viability assessments for the particular species.” *Lohn*, 645 F.Supp. at 948. For example, 1-5% risk of extinction in 100 years can create a discernible risk of extinction. *Foss*, 2005 WL 2002473, *15 (citing *Center for Biological Diversity v. Lohn*, 296 F.Supp.2d 1223, 1232 (W.D.Wash.2003)).

The Service also misinterpreted and misapplied the term “foreseeable future” by only projecting out 38-50 years to assess “viability,” threats to wolverine, and to evaluate whether wolverine in the lower 48 qualify as threatened or endangered. Very few (if any) species or DPSs would qualify for listing based on this compressed, narrow timeframe. Nor does it comport with the best science (and no rationale is provided for using 38 to assess some threats and 50 for others). A short 38-50 timeframe simply does not suffice for defining “foreseeable future” for wolverine or other species threatened by climate change.

The term “foreseeable future” must be defined by reference to the best available science. *See Foss*, 2005 WL 2002473, *15-17. As the Service recognized in a 2009 Solicitor Memorandum (M-Opinion 37021), “[t]he Secretary’s analysis of what constitutes the foreseeable future for a particular listing determination must be rooted in the best available data that allow predictions into the future, and the foreseeable future extends only so far as those predictions are reliable. ‘Reliable’ does not mean ‘certain’; it means sufficient to provide a reasonable degree of confidence in the prediction, in light of the conservation purposes of the Act.” M-Opinion 37021 at 13. What must be avoided is “speculation.” *Id.* at 8. The corollary is that the Service may not dismiss a risk of extinction that may be reasonably forecasted by science. *See Foss*, 2005 WL 2002473, *15-17. It “defies common sense” to define “foreseeable future” to exclude the timeframe in which [the best available science] predict[s] extinction. *Id.* at 15. Prediction of the future is necessarily grounded in the “data and logic” of today. M-Opinion 37021 at 8. As one court reasoned, if a species will be endangered in the future if current circumstances continue, “it is clearly threatened today.” *Biodiversity Legal Found. v. Babbitt*, 943 F. Supp. 23, 25 n.5 (D.D.C. 1996).

The 2009 Solicitor Memorandum comports with the ESA and Congress’ intentions. But the Service’s new, 2019 rule defining “foreseeable future” – which was applied to wolverine – conflicts and deviates from the ESA and the 2009 Solicitor’s

Memorandum by increasing the level of certainty required for listing decisions. The term “foreseeable future” now only extends “so far into the future as the Services can reasonably determine that both the future threats and the species’ responses to those threats are likely.” 50 C.F.R. § 424.11(d). This new definition raises the bar too high – requiring an unreasonable and unrealistic amount of certainty that conflicts with the ESA’s best available science standard and undermines the ESA’s conservation objectives. Again, very few, if any, species – especially those threatened by climate change like wolverine – will satisfy this new, high standard which undermines the very purpose of the ESA (to protect species before they are gone) and conflicts with the ESA’s best available science standard. Requiring “reliable predictions” regarding threats to a species and “reliable predictions” about how the species will specifically respond to such threats goes beyond what Congress intended in the ESA. This is especially true with respect to species – like wolverine – threatened by climate change.

The Service also misinterpreted and misapplied the phrase “significant portion of its range” (SPR) when deciding not to list wolverine.

Under the ESA and the Service’s implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so throughout all or “a significant portion of its range.” The evaluation of whether a portion of the species range is “significant” typically involves a number of variables and factors, including (but not limited to) the size of the area, the percentage of the species’ range, its biological and/or ecological importance, unique factors and habitat conditions, its importance for maintaining connectivity amongst subpopulations and facilitating genetic exchange, and whether its loss would result in the loss of a unique or critical function of the species. The focus of the analysis must be on the portion itself.

In 2014, the Service published a final rule interpreting the phrase “significant portion of its range.” 79 Fed. Reg. 37,578 (July 1, 2014). The policy demands a high threshold for identifying a “significant portion.” A portion of a species’ range will only be deemed “significant” if its “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 37,609. In other words, to qualify as a “significant portion” of a species’ range, the loss of members in that portion must ultimately threaten the entire listable entity.

Here, the Service maintains it did not apply its 2014 SPR policy (if it did, such application would be arbitrary because the policy has been set aside for illegally requiring threats “throughout all” the species’ range in order to be deemed

“significant”). Instead, the Service said evaluating SPR requires it consider two questions: (1) whether a portion is significant; and (2) whether a species qualifies for listing in that portion, i.e., whether it is likely to become endangered in the foreseeable future in that portion (the status question).

With respect to wolverine, the Service only evaluated (2), the status question and concluded that nowhere in the lower 48 or a portion of the lower 48 are threats concentrated such that it would trigger a listing for wolverines in that portion. This is arbitrary and a violation of the ESA because: (1) it conflicts with the best available science which demonstrates threats from climate change, small population size, genetics, human-caused mortality, and cumulative threats are concentrated in certain portions such that wolverine in those portions are likely to become endangered in the foreseeable future (climate change impacts, for instance, are more severe in lower-elevations in Idaho than they are in Glacier National Park and genetic threats/population size are a major concerns in some portions with very few wolverines that remain isolated); (2) the Service makes an SPR determination without evaluating the “significance” of the portion; (3) the Service never identifies the “portions” evaluated or explains how they were determined and defined; and (4) the Service provides absolutely no evaluation or analysis of the five threat factors in the portions (nor is such an analysis or evaluation in the SSA). An unsupported conclusion does not suffice.

4. *No reasonable explanation for reversal of earlier finding.*

As explained by the Ninth Circuit, an “[u]nexplained inconsistency between agency actions is a ‘reason for holding an interpretation to be arbitrary and capricious.’” *Organized Village of Kake v. US Dept. of Agriculture*, 795 F. 3d 956, 966 (9th Cir. 2015) (citation omitted). Agencies are entitled to change their policies, but must provide “good reasons” for the new policy and if it rests on “factual findings that contradict those which underlay its prior policy,” the Agency “must include ‘a reasoned explanation . . . for disregarding facts and circumstances that underlay or were engendered by the prior policy.’” *Id.* A policy change violates the law if “the agency ignores or countermands its earlier factual findings without [providing a] reasoned explanation for doing so . . .” *Id.* (citation omitted).

With respect to wolverine the Service has failed to provide a valid, reasonable, and rational explanation for why it reversed its previous “warranted” finding (and all of the factual and scientific findings that formed it) and neglected to follow the recommendation of its own biologists. The Service also failed to provide a valid,

reasonable, and rational (and legal) explanation for changing its position on whether and how wolverine in the lower 48 qualify as a DPS.

5. *Insufficient data to support decision in the record.*

Under the ESA and APA, the Service's listing decision must be supported by reliable and meaningful data and evidence and there must be a rational connection between the facts found in the record and the ultimate choice made. *See Defenders of Wildlife v. Babbitt*, 958 F. Supp. 670 (D.D.C. 1997).

Here, the Service's listing decision fails to provide biological support and data for its findings that the wolverine population in the contiguous United States: (1) will adapt and respond to any climate change threats; (2) continues to grow and expand its range and population in the contiguous United States (and that Colorado and California are "occupied" areas); (3) that the current population size is approximately half of capacity; (4) that the current population level (actual and effective) of wolverine in the contiguous United States – assuming it is approximately 300 total with an unknown effective population – is stable and not a threat to the species or reason (by itself) to list (irrespective of the Service's climate change findings); (5) that insufficient information exists demonstrating that climate change will result in reduced connectivity and genetic exchange between sub-populations of wolverine in the foreseeable future; (6) that wolverine use a "variety of habitats"; (7) that climate change, by itself or in conjunction with other threats (incidental trapping, small population size, genetic threats, winter recreation, development, etc...) does not pose a threat to wolverine or its habitat in the foreseeable future such that wolverines warrant listing under the ESA; (8) that the wolverine's only three needs are large landscapes, access to food, and feature for reproduction (no mention of cold climates or snow); (9) that connectivity exists between Canada and the contiguous United States, there is no barrier to movement, and migration of wolverines and the genes they carry is occurring; (10) that there is no evidence of genetic concerns; and (11) that wolverine are not threatened any portions of its range in the contiguous United States.

Having such biological support and data is especially important here, where the Service's finding that wolverine do not warrant listing under the ESA contradicts the Service's earlier findings in the proposed rule, the extensive (previous) comments submitted by WELC and other organizations and agencies (which the Service neglected to properly respond to) and even the recommendations from the Service's biologists, its own peer-reviewers, and the larger scientific community. The Service can "draw conclusions based on less than conclusive scientific evidence, [but] it cannot base its

conclusions on no evidence.” *National Assoc. of Home Builders v Norton*, 340 F.3d 835, 847 (9th Cir. 2003).

6. Arbitrary reliance on “conservation” efforts.

Pursuant to Section 4(b)(1)(A), 16 U. S.C. § 1533 (b)(1)(A), and the Service’s implementing regulations, the Service must make listing determinations after “conducting a review of the status of the species and after taking into account those efforts, if any, being made by any State” to protect such species.

Under the ESA, the Service can rely on conservation efforts, including state-initiated efforts, so long as they are binding and current and have a proven track record of success. Conservation efforts relied upon by the Service must also be submitted for public review and comment. In electing not to list wolverine, the Service inappropriately relies forest plans and non-binding state efforts such as, but not limited to, Idaho’s, Wyoming’s, and other states’ bans on wolverine trapping and Montana’s restrictions on wolverine trapping (including the current zero quota for wolverine in Montana) and state wildlife action and/or management plans. These state regulations and plans, however, are insufficient because they may be withdrawn or amended at any time and deal only with a small portion of the species’ range and habitat.

Reliance on state efforts, such as trapping restrictions, is particularly inappropriate where the state requirements are less stringent than the requirements of the ESA. The ESA was intended to establish a federal floor for wildlife protection. Thus, in section 4(b)(1)(A), Congress’s aim was to prevent disruption of a state conservation program that would be *more* protective of a species than required under the ESA. See H.R. Rep. No. 93-412, p. 14 (1973) (“the State powers to regulate in a more restrictive fashion or to include additional species remain unimpaired.”). If the wolverine were listed, it would be protected from all forms of “take,” including “harvest” that is “sustainable” or spread “equitably” throughout a state.

7. *Arbitrary determination that wolverine do not qualify as a DPS.*

The Service's determination that wolverines in the lower 48 are not "discrete" from wolverines in Canada and, as a result, do not qualify as a DPS or listable entity under the ESA is arbitrary, capricious, and abuse of discretion and not in accordance with the ESA (including the Service's own 1996 DPS policy).

Under the 1996 DPS policy, the Service must consider and evaluate three elements: (1) the discreteness of the population segment in relation to the remainder of the species to which it belongs; (2) the significance of the population segment to the species to which it belongs; and (3) the segment's conservation status in relation to the ESA's standards for listing (i.e., if discrete and significant, does the segment qualify as endangered or threatened?). According to the DPS policy, a population segment may be considered discrete if: (a) it is markedly separated (as opposed to completely separated) from other populations of the same taxon as a consequence of physical, physiological, ecological, and behavior factors (quantitative measures of genetic or morphological discontinuity may provide evidence of such separation); or (2) it is delimited by international government 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 ESA.

In deciding to withdraw the proposed rule to list wolverine, the Service determined that wolverine in the contiguous do not qualify as a DPS because they are not "discrete" from wolverine in Canada.

This finding is arbitrary and violates the ESA (and 1996 DPS policy) because: (1) it conflicts with the Service's earlier findings that wolverine in the lower 48 are discrete and no reasonable or rational explanation for the change in position is provided; (2) it conflicts with the ESA and Service's DPS policy and its related DPS findings of "discreteness" for other species, including but not limited to, the 2011 status review for grizzly bears in the lower 48 (and the Service's subsequent and related DPS determination for GYE grizzly bears), Canada lynx, and gray wolves; (3) it conflates and confuses the meaning of "discrete" under the 1996 DPS policy and substitutes a threats analysis for discreteness finding; (4) it conflicts with the best available science on connectivity between the populations – wolverine in the contiguous United States are markedly separated from wolverine in Canada and the rest of North America due to physical, physiological, ecological, and behavior factors. This is confirmed by the best available research and peer reviewed and published papers (and not all areas in the lower 48 are even remotely connected to wolverine in Canada). The Service, for

example, concludes that trapping in Canada does not “represent a barrier” to movement or “stressor” to wolverines migrating south but the agency fails to mention or cite Mowat (2019) on trapping in southern Canada (a copy is attached to this notice); and (5) the best available science reveals wolverines in the lower 48 are separated from wolverines in Canada by an international government boundary that demarcates a number of significant differences in how wolverines and their habitat are managed and differences in wolverine numbers, population dynamics, and habitat.

Wolverines are managed differently in Canada (trapping, for instance, is allowed), wolverines occupy different habitats in Canada including unique boreal landscapes that do not exist in the lower 48 (the best available science states that it’s important to view habitat in the lower 48 differently from the boreal forest habitat in Canada), wolverines exist in much higher densities in Canada (orders of magnitude higher), and different regulatory mechanisms are in place in Canada.

Wolverines in the lower 48 are unique and are faced with unique, different, and more severe threats, including those from climate change, small/isolated population size (which threatens metapopulation dynamics), genetics, and human-caused mortality. Wolverine in the lower 48 are currently managed on a state-by-state basis (which is always subject to change – Montana only closed wolverine trapping after being forced to do so when wolverine were proposed for listing). The few remaining places that still support wolverine in the contiguous United States must continue to do so but are increasingly on the decline and the space between subpopulations continues to expand.

Wherefore, this sixty-day notice letter serves to put the Service on notice of its liability for violating the ESA and informs the agency of our intent to file a citizen suit under the ESA seeking the appropriate relief.

If you have any questions or wish to discuss any of the issues raised in (or papers provided with) this notice, please contact me at the email address and number below. Thank you in advance for your attention to this matter.

Sincerely,

/s/ Matthew Bishop

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