Via Email and Certified Mail

February 7, 2024

The Honorable Deb Haaland, Secretary
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RE: Notice of Intent to Sue for Violation of the Endangered Species Act: Unlawful Denial of Listing for Gray Wolves in the Northern Rockies or Western U.S. as an Endangered or Threatened "Distinct Population Segment"

Dear Secretary Haaland and Director Williams:

This letter serves as a 60-day notice of intent to sue the Department of the Interior and the U.S. Fish and Wildlife Service (collectively "the Service") from the Center for Biological Diversity, the Humane Society of the United States, Humane Society Legislative Fund, and the Sierra Club (the "Petitioners") for violation of the Endangered Species Act ("ESA") in denying federal protection to gray wolves (*Canis lupus*) in the Northern Rocky Mountains or across the Western U.S. as a Distinct Population Segment ("DPS").[1]

In finding these wolves "not warranted" for listing, the Service violated section 4 of the ESA by failing to recognize the risks to wolves in "significant portions" of the wolf's range posed by overutilization and inadequate regulation mechanisms, loss of genetic variability, and other threats, as well as not relying solely on the best available scientific information and data.[2]

The Center for Biological Diversity is a national, non-profit conservation organization based in Tucson, Arizona and supported by over 1.7 million members and online activists. The Center and its members wish to see viable gray wolf populations in suitable habitat in all significant portions of the wolf's historic range in the Lower 48, including in the Northern Rocky Mountains. To realize that vision, the Center has halted multiple unlawful downlisting and delisting attempts by the Service through litigation and successfully pushed for a national wolf recovery plan.

[1] 16 U.S.C. § 1540(g)(2)(C) (60-day notice requirement).
[2] *Id.* § 1533(a)(1), (b)(1)(A).

The Humane Society of the United States ("HSUS") is the nation's largest animal protection organization and is headquartered in Washington, D.C. On behalf of its members and supporters nationwide, HSUS works to promote the humane treatment of all animals and the protection and recovery of threatened and endangered species and their habitats. In furtherance of this mission, HSUS has consistently advocated for gray wolves, including those in the Northern Rocky Mountains, by, for instance, bringing successful legal challenges to the Service's unlawful efforts to delist the species.

Humane Society Legislative Fund ("HSLF") is an animal protection organization incorporated under section 501(c)(4) of the Internal Revenue Code and operates as a separate affiliate of HSUS. HSLF was formed in 2004 and is based in Washington, D.C. HSLF advocates for legislation and federal regulations that protect animals and has a long history of working to secure protections for wildlife—especially threatened and endangered species and native carnivores. To that end, HSLF has spent considerable time fighting against the delisting of the gray wolf under the ESA in Congress, as well as thwarting other attacks against gray wolf protections.

The Sierra Club was founded in 1892 and is the nation's oldest grassroots environmental organization. The Sierra Club is incorporated in California, and has approximately 690,490 members nationwide. The organization is dedicated to the protection and preservation of the environment. The Sierra Club's mission is to explore, enjoy and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; and to educate and enlist humanity to protect and restore the quality of the natural and human environments. Sierra Club has consistently advocated for the recovery of gray wolves for decades, including in the Northern Rocky Mountains.

Petitioners' members and supporters have actively engaged in decisions regarding gray wolf management in state legislatures and state wildlife management commissions in northern Rockies, Great Lakes, and Pacific Northwest states, fighting egregious wolf-killing laws and advocating for gray wolf coexistence and full recovery. Petitioners have also litigated against unlawful attempts to delist the species, and advocated against efforts in Congress to remove federal protections. Our members and supporters across the country care deeply about gray wolf recovery and frequently visit public lands in the Northern Rocky Mountain region in the hopes of seeing a wolf in the wild.

FACTUAL BACKGROUND

History of Gray Wolf Persecution and Protection

The gray wolf once occupied the majority of North America. Scientists estimate that prior to European settlement, as many as 2 million wolves may have lived in North America.[3]

[3] Leonard et al. 2005; *see* U.S. Fish and Wildlife Service ("USFWS") 2018, USFWS 2024 for detailed background information on gray wolf historical abundance, and range, and biology.

Failing to recognize the ecological and other values of wolves, government agents used deadly poisons and traps to kill wolves during the late 19th century and first half of the 20th century.[4] By the 1960s, fewer than 1,000 wolves remained in the "Lower 48" United States, with wolves extirpated everywhere except northeastern Minnesota and Isle Royale in Michigan.[5]

Efforts to exterminate wolves were replaced with recovery efforts when wolves received federal protections. In 1978, the Service protected the gray wolf in the Lower 48 as an endangered species and designated the Minnesota population as threatened.[6]

The recovery plan for wolves in the Northern Rocky Mountains was drafted in 1978 and thereafter revised in 1987 and 1994.[7] The 1987 plan established a goal of at least ten breeding pairs and one hundred wolves for three consecutive years in each of three recovery areas: northwestern Montana, central Idaho, and the Greater Yellowstone area.[8] In 1994, the Service revised these criteria to require a minimum of "thirty or more breeding pairs … comprising some 300+ wolves in a metapopulation … with genetic exchange between subpopulations."[9]

Although these unambitious recovery goals were developed prior to major scientific gains in wolf genetics and population viability, the Service has since relied on its outdated recovery planning in its numerous premature efforts to reduce federal protections for wolves under the ESA.[10]

Of particular relevance here is the Service's 2009 decision to remove ESA protections for wolves in the Northern Rocky Mountain DPS ("2009 Delisting Rule").[11] The 2009 Delisting Rule provided that wolves in the Northern Rockies would be managed after delisting "to average over 1,100 wolves, fluctuating around 400 wolves in Montana, 500 in Idaho, and 200 to 300 in Wyoming with 1,100 wolves within the Northern Rocky Mountains."[12]

A federal court held that the 2009 Delisting Rule violated the ESA and reinstated protections for wolves in the northern Rockies.[13] That 2010 court decision was then reversed by

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[4] Robinson 2005.
[5] 74 Fed. Reg. 15069 (Apr. 2, 2009).
[6] 43 Fed. Reg. 9607 (Mar. 9, 1978).
[7] Rather than develop a nationwide gray wolf recovery plan, decades ago, the Service developed three separate, regional plans. Last year, in response to litigation by the Center, the Service committed to develop a new, national recovery plan for listed wolves. *Ctr. for Biological Diversity v. Haaland*, No. 1:22-cv-03588-DLF, Stipulated Settlement Agreement, ECF No. 25-1 (Dec. 13, 2023).
[8] USFWS 1987.
[9] 72 Fed. Reg. 6106, 6107 (Feb. 8, 2007).
[10] Most recently, on February 10, 2022, the District Court for the Northern District of California vacated the Service's Final Rule delisting wolves throughout the contiguous United States. 85 Fed. Reg. 69778 (Nov. 3, 2020); *Defs. of Wildlife v. U.S. Fish & Wildlife Serv.*, 584 F. Supp. 3d 812 (N.D. Cal. 2022). As a result, ESA protections have been restored to gray wolves in Minnesota and "all or portions of 44 lower United States." *Defs. of Wildlife v. U.S. Fish & Wildlife Serv.,* 584 F. Supp. 3d at 820.
[11] 74 Fed. Reg. 15123, 15148 (Apr. 2, 2009) (2009 Delisting Rule removing ESA protections for gray wolves throughout the Northern Rocky Mountain DPS, except for in Wyoming).
[12] *Id*. at 15148.
[13] *Defs. of Wildlife v. Salazar*, 729 F. Supp. 2d 1207, 1228 (D. Mont. 2010).

Congress in 2011.[14] Accordingly, the Service re-issued the rule removing ESA protections for the gray wolf population in the northern Rockies (excluding Wyoming).[15] Thereafter, wolves in Wyoming also lost their federal protections.[16]

Thus, wolves in the northern Rockies have been under state management since loss of their federal protections.

State Management of Wolves in the Northern Rockies

In the last several years, the gray wolf has faced substantial and intensifying threats across the Northern Rocky Mountains.[17]

In Idaho, new legislation permits hunters, trappers, and private contractors to kill wolves using new—and highly effective—methods to do so.[18] For example, Idaho now permits year-round trapping on private property; unlimited purchase of wolf tags; and baiting, hound-hunting, night hunting with night vision equipment, and the use of ATVs or snowmobiles to facilitate killing wolves.[19] The Idaho Department of Fish and Game's new wolf management plan aims to reduce the state's wolf population down from approximately 1200 wolves to just 500 wolves.[20]

In Montana, new rules permit the use of strangulation snares and baiting on public and private lands, and night hunting on private lands; allow an individual to hunt up to 10 wolves and trap an additional 10; and expand the wolf trapping season by four weeks.[21] Montana hunters and trappers killed 258 wolves during the 2022-2023 season and have already killed over 200 wolves in the 2023-2024 season that runs until March 15.[22] Montana Fish, Wildlife & Parks' new wolf management plan aims to reduce the state's wolf population down from approximately 1,100 wolves to just 450 wolves.[23]

Gray wolves in Wyoming are designated as predatory animals across approximately 85% of the state.[24] Predatory animals may be taken without a license in nearly any manner and at any time.[25] In 2022, reported wolf killing by people accounted for the loss of approximately 25% of

[14] Department of Defense and Full-Year Continuing Appropriations Act, Pub. L. No. 112-10 § 1713 (2011).
[15] 76 Fed. Reg. 25590 (May 5, 2011).
[16] *Defs. of Wildlife v. Zinke*, 849 F.3d 1077, 1081 (D.C. Cir. 2017).
[17] *See* summary in Clark 2022.
[18] *See* IDAHO CODE §§ 36-201, 36-1107.
[19] *See* IDAHO CODE § 36-201 (authorizing all methods of take "for the management of wolves").
[20] Idaho Fish & Game ("IDFG") 2023, p. 38
[21] Montana Fish, Wildlife & Parks ("MFWP") 2021; MFWP 2023a. New regulations were promulgated after the state legislature mandated that the Commission establish "hunting and trapping seasons for wolves with the intent to reduce the wolf population in this state to a sustainable level, but not less than the number of wolves necessary to support at least 15 breeding pairs." MONT. CODE ANN. § 87-1-901. The new regulations eliminated wolf harvest quotas surrounding Yellowstone and Glacier National Parks, but these have been since reinstated.
[22] MFWP 2023b; MFWP 2024.
[23] MFWP 2023c.
[24] WYO. ADMIN. CODE Tit. 40, Ch. 21 § 3.
[25] WYO. STAT. ANN. § 23-3-103.

the estimated Wyoming wolf population (85 of 338 wolves).[26] Wyoming hunters killed several wolves within ten miles of the border with Colorado, where wolves are just beginning to return.[27]

Wolves also face unlimited killing on land managed by the Confederated Tribes of the Colville Reservation in northeastern Washington. In 2019, they adopted wolf hunting regulations that allowed for year-round hunting with no bag limits.[28]

The Relisting Petition

On June 1, 2021, the Service received an emergency petition ("the Petition") to relist wolves in the northern Rockies from the Petitioners.[29] The Petition relied upon the best available science and current law to support establishing one of two listable entities for gray wolves in the Northern Rocky Mountains: a Northern Rocky Mountains DPS or a Western DPS. The Petition requested the Service assign the status of threatened or endangered to the DPS, presenting evidence that listing is warranted.

On September 17, 2021, the Service issued a positive 90-day finding on the Petition, as well as a second petition filed by another coalition of conservation groups. The Service explained that "the petitioners present credible and substantial information that human-caused mortality (Factor B) may be a potential threat to the species in Idaho and Montana."[30]

The Service failed to timely issue its 12-month finding on the Petition by the statutory deadline, so Petitioners filed a lawsuit in federal court and compelled a court-ordered deadline.

Denial of the Relisting Petition

On February 2, 2024, pursuant to the court-ordered deadline, the Service submitted to the Federal Register its 12-month finding on the Petition.

In that decision,[31] the Service determined that wolves in the Northern Rocky Mountains ("NRM") do not qualify as a "distinct population segment" because they are not discrete from West Coast wolves. It found that wolves in the Western U.S. qualify for designation as a DPS but found that the Western DPS did not meet the definitions of endangered or threatened across the DPS or in any "significant portion" of that DPS.

In reaching that conclusion, the Service identified four portions of the wolf's range to further evaluate as potential significant portions of the Western range: (1) Idaho; (2) Montana; (3) Western Washington, Western Oregon, and California (i.e., the wolves in West Coast states that occur outside of the NRM); and (4) the NRM. In these areas, the Service found that wolves do not now, or in the foreseeable future, meet the definitions of endangered or threatened.

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[26] Wyoming Game & Fish Department ("WGFD") 2023.
[27] Koshmrl 2023.
[28] CCT CODE Tit. 4, Ch. 4-1; CCT Business Council Resolution 2019–255 (May 9, 2019).
[29] Center for Biological Diversity et al. 2021.
[30] 86 Fed. Reg. 51857 (Sept. 17, 2021).
[31] 89 Fed. Reg. 8,391 (Feb. 7, 2024).

The Service did not consider any other portions of the wolf's non-NRM range – including the Southern Rocky Mountains – to be "significant portions" because "of the small proportion of occupied current range that exists in those individual states." And it did not independently consider Wyoming in its SPR analysis but did not explain why.

STATUTORY FRAMEWORK

The ESA is "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation."[32] It is intended to protect and recover species that the Service determines to be "endangered" or "threatened."[33]

The Service must list a species as "endangered" if it determines the species is "in danger of extinction throughout all or a significant portion of its range."[34] The Service must list a species as "threatened" if it is "likely to become an endangered species within the foreseeable future in all or a significant portion of its range."[35] The ESA defines "species" to include "subspecies" and "distinct population segments of any species of vertebrate fish or wildlife which interbreeds when mature."[36]

Section 4 of the ESA permits interested parties to petition the Service to list species.[37] Upon receipt of a listing petition, the Service must make an initial finding within 90 days as to whether the petition presents "substantial information indicating that the petitioned action may be warranted," and, if so, it must publish the finding and conduct a full scientific review of the species' status.[38] The Service has 12 months from the date the petition is submitted to either issue a proposed regulation listing the species, make a "warranted, but precluded" finding, or issue a "not warranted" finding (thus, rejecting the petition).[39]

The Service must consider five factors when determining whether listing is warranted:

(A) the present or threatened destruction, modification, or curtailment of a species' habitat or range;
(B) overutilization for commercial, recreational, scientific, or educational purposes;
(C) predation or disease;
(D) the inadequacy of existing regulatory mechanisms; and
(E) other manmade or natural factors affecting the species' continued existence.[40]

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[32] *Tenn. Valley Auth. V. Hill,* 437 U.S. 153, 180 (1978).
[33] 16 U.S.C. § 1533(a).
[34] *Id.* § 1532(6).
[35] *Id.* § 1532(20).
[36] *Id.* § 1532(16).
[37] *Id.* § 1533(b)(3)(A).
[38] *Id.*
[39] *Id.* § 1533(b)(3)(B).
[40] *Id.* § 1533(a)(1).

If the Service determines that a species meets the definition of "endangered" or "threatened" because of any one or a combination of these five factors, the Service must list the species.[41] The Service must evaluate these factors and make its listing determination "solely on the basis of the best scientific and commercial data available."[42]

VIOLATIONS OF THE ENDANGERED SPECIES ACT

I. NORTHERN ROCKY MOUNTAINS WOLVES ARE PART OF A LISTABLE ENTITY

The Service reasonably concluded in its 12-month finding that the Western DPS is a listable entity because it is "discrete and significant," as defined by the DPS Policy.

The Service erred, however, by assuming it would need to again designate a NRM DPS to restore protections to wolves in the northern Rockies. The NRM DPS has already been designated – by Congress when it amended the law by requiring the Service to reissue the 2009 Delisting Rule.[43]

To protect wolves in the northern Rockies, the Service could have listed a Western DPS or added the Northern Rocky Mountains area to the species-level listing of the gray wolf that the court restored by vacating the 2020 delisting rule.

Consequently, the Service did not need to reaffirm the validity of its already-designated Northern Rocky Mountains DPS prior to determining whether the status of the northern Rockies population warrants ESA protection. Reaffirming the validity of the NRM DPS would only be necessary if the Service listed the DPS separately from the lower 48 entity, such as a separately listed "threatened" DPS.

II. THE GRAY WOLF QUALIFIES AS ENDANGERED OR THREATENED

In denying the Petition, the Service unreasonably concluded that listing of gray wolves in the Western DPS is "not warranted" under the ESA. The Service's not warranted finding violates the ESA because the agency failed to properly analyze the threats facing these wolves, as required by Section 4. Comments submitted by Petitioners and others show that wolves risk extinction or endangerment in significant portions of their range from each of the five factors, including habitat destruction, overutilization, disease or predation, inadequate regulatory

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[41] 16 U.S.C. § 1533(a)(1); 50 C.F.R. § 424.11(c); *see also Fed'n of Fly Fishers v. Daley,* 131 F. Supp. 2d 1158, 1164 (N.D. Cal. 2000) ("These factors are listed in the disjunctive; any one or combination can be sufficient for a finding that a particular species is endangered or threatened.").

[42] 16 U.S.C. § 1533(b)(1)(A).

[43] *All. for the Wild Rockies v. Salazar*, 800 F. Supp. 2d 1123, 1131 (D. Mont. 2011) ("Because the 2009 Rule was invalidated, the re-issuance of the Rule pursuant to congressional directive, by implication amended the ESA as to this particular delisting. In other words, the ESA is no longer intact as to the re-issuance of the 2009 Rule."); *see also All. for the Wild Rockies v. Salazar*, 672 F.3d 1170, 1174 (9th Cir. 2012) ("Congress has directed an agency to take particular action challenged in pending litigation by changing the law applicable to that case.").

mechanisms, and other "natural or manmade factors" such as low genetic variability, climate change, and more.[44]

While this letter focuses on a subset of the five factors, the Service is hereby on notice that Petitioners plan to challenge the Service's inadequate five-factor analysis in its entirety. Similarly, Petitioners intend to rely upon additional crucial scientific evidence in the record and not only those studies cited here.

The Threats of Overutilization and Inadequate Existing Regulatory Mechanisms

To determine whether a species is endangered or threatened, the Service must consider "overutilization" and "the inadequacy of existing regulatory mechanisms."[45] The Service's not warranted finding violates the ESA by relying on comparisons of inaccurate estimates of current and future wolf population numbers in the Northern Rocky Mountain states to outdated population goals enumerated in the decades-old Northern Rocky Mountain wolf recovery plan and 2009 Delisting Rule.

Instead, the Service was required to, and failed to, use the best available science to analyze the risks to wolf viability from the Northern Rocky Mountain states' destructive wolf management policies and laws. A proper analysis compels the conclusion that these wolves qualify as endangered or threatened because of inadequate existing regulatory mechanisms, as well as overexploitation.

Inaccurate current wolf population numbers based on flawed survey methodologies. To begin, the Service unreasonably relied on overinflated current wolf population estimates for Idaho and Montana, even though the best available science demonstrates overestimation bias and unreliability of their survey methodologies.

Idaho now relies solely on camera traps to estimate wolf abundance, even though scientists have found that models based on several other survey methods are more reliable.[46] Indeed, a recent study on use of camera traps in Idaho showed that they significantly overestimated wolf abundance in one of three years.[47]

Creel (2022) details significant flaws in the assumptions underlying Idaho's methodology and ultimately concludes "these problems do not allow confidence in the population estimates for Idaho wolves."[48] Indeed, the best available science shows that models used to analyze camera trap data require assumptions about animal distribution that do not work well for social and territorial animals, like wolves.[49]

[44] Robinson et al. 2022, p. 30-36
[45] 16 U.S.C. § 1533(a)(1)(B), (D)
[46] IDFG 2021; Thompson et al. 2022; International Wolf Center 2019.
[47] Ausband et al. 2022
[48] Creel 2022.
[49] Loonam et al. 2021; Amburgey et al. 2021; Palencia et al. 2021; Gilbert et al. 2020; Moeller et al. 2018; Huggard 2018.

In addition, Idaho and Montana's survey methods were developed prior to the changes in policy that dramatically liberalized the killing of wolves in those states. These new conditions violate the assumptions of their models and undermine the Service's reliance on the states' wolf population estimates.[50]

Importantly, a scientific analysis of Montana's survey methodology showed overestimation bias that resulted in estimated wolf abundance 2.5 times larger than true abundance.[51] Alarmingly, the analysis warns that because Montana's methodology results "in severe overestimation bias," it would be unable to "detect any change in abundance except possibly at or near extirpation levels".[52] The Service's analysis ignored this science in the record.

The "best available science" standard requires that the Service follow the existing science concluding that Idaho's and Montana's wolf population numbers are overestimates. The Service was unreasonable when it failed to properly correct for their overestimation bias.

Aggressive wolf killing under state management in the northern Rockies. The 2009 Delisting Rule made clear that "if a State changed their regulatory framework to authorize the unlimited and unregulated taking of wolves . . . emergency listing would be immediately pursued."[53] Because Congress instructed the Service to readopt the 2009 Delisting Rule, the Service remains bound by that commitment. Thus, because large swaths of the northern Rockies states are subject to "unlimited" killing – with no quotas restricting the killing of wolves in Idaho, most of Wyoming, and elsewhere – the Service is compelled to relist wolves.

Data from Idaho and Montana show losses of approximately 30% of the states' wolves each of the last several years,[54] which means that wolf populations will continue to decline towards endangerment.[55] The best available science shows declines occur when human-caused mortality exceed certain thresholds.[56]

The Service's modelling shows that wolf killing in the northern Rockies will lead to precipitous population declines in the next ten years.[57] The agency's "not warranted" finding appears largely premised on the agency's new tolerance for high levels of wolf killing. This is an unjustified and unexplained change in policy that does not comport with best available science.

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[50] Treves & Santiago-Avila 2023.
[51] Crabtree 2023.
[52] *Id.*
[53] 74 Fed. Reg. at 15148
[54] *See, e.g.*, MFWP 2023c, MFWP 2024; IDFG 2023; MFWP 2023b, MFWP 2022; Inman et al. 2020.
[55] In 2022, Montana estimated that the total wolf population was 1,087 wolves, and the reported human-caused wolf mortality was 293 (27%). In 2021, the population was 1,144 wolves with 338 wolves killed (30%). The 2020 wolf population was 1,177 wolves with 366 wolves killed (31%). The 2019 wolf population was 1,153 with 386 wolves killed (33%). The percentage of the state's wolf population killed by people has trended slightly smaller each year over the last several years, despite liberalized hunting regulations and financial incentives. In 2022, Idaho estimated that the total wolf population was 1,337 wolves, and the reported human-caused wolf mortality was 395 (29.5%). From 2019-2021, an average of 516 wolves died annually in Idaho from all documented mortality causes, a mortality rate of approximately 33%. These population numbers are also likely overestimates given the state's inaccurate survey methodologies.
[56] Adams et al. 2008; Vucetich & Carroll 2011; Fuller et al. 2003; Sparkman et al. 2011; Creel & Rotella 2010.
[57] USFWS 2024.

Additionally, the Service failed to incorporate in its modelling the numerous recent scientific studies concluding that reduced protection for wolves is associated with increases in illegal and concealed anthropogenic mortality.[58] Scientists have observed that "unreported deaths accounted for over two-thirds of all mortality annually among wolves > 7.5 months old".[59]

Moreover, the Service's modelling does not reflect the fact that human-caused mortality can be additive or super-additive if hunters/poachers kill a breeder or a lactating female or if death of a breeder also led to death of offspring.[60] Mortality driven by hunting, rather than ecological factors, can also affect the genetic composition and fitness of wolf populations.[61] In addition, stress experienced by exploited wolf populations has sub-lethal physiological and behavioral effects on that also affect their fitness, including changes to pack dynamics.[62] Bassing et al. (2020) finds that wolves' social structure limits the potentially compensatory response of immigration to high levels of killing.[63]

The Service also failed to use the best available science that harvest statistics should not be used to indicate population trends.[64]

In sum, the Service failed to consider this abundant science – the best available science – on the myriad ways that human-caused mortality will result in foreseeable wolf population declines that threaten the long-term viability of the Northern Rocky Mountains wolf population. These scientific findings also demonstrate that reported mortality surely underestimates the actual, total mortality.

Predator control, other wolf killing on federal lands. In addition to the threats to wolves caused by inadequate state regulatory mechanisms, the Service also failed to meaningfully explain how federal public land management by the U.S. Forest Service and the Bureau of Land Management could be adequate to protect wolves in the northern Rockies. These federal land management agencies almost always allow state wildlife management regulations to govern on federal lands, including allowing aerial gunning of wolves by private contractors, and hunting and trapping even in wilderness areas.[65]

In addition, the U.S. Forest Service and the Bureau of Land Management allow aggressive killing of wolves for "predator control" by APHIS-Wildlife Services. This federal wildlife-killing program uses highly effective methods like traps, snares, and aerial gunning to kill wolves on federal lands throughout the northern Rockies.[66]

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[58] Santiago-Ávila & Treves 2022; Louchouarn et al. 2021; Treves et al. 2017a; Treves et al. 2017b; Treves et al. 2021; Oliynyk 2023; Santiago-Ávila et al. 2020; Santiago-Ávila et al. 2022; Treves et al. 2016; Chapron & Treves 2016; Chapron & Treves 2017a; Chapron & Treves 2017b.
[59] Treves et al. 2017b; *see also* Liberg et al. 2012.
[60] Cassidy et al. 2023; Sells et al. 2022; Barber-Meyer et al. 2021; Robinson et al. 2022, n.195.
[61] Frank et al. 2021; Robinson et al. 2022, n.199.
[62] Bryan et al. 2015; Stewart et al. 2021; Wikenros et al. 2021.
[63] Bassing et al. 2020.
[64] Treves et al. 2022; Garshelis & Hristienko 2006; Fukasawa et al. 2020.
[65] Center for Biological Diversity et al. 2023.
[66] *See, e.g.*, U.S. Forest Service & USDA-APHIS-Wildlife Services 2023; USDA-APHIS-Wildlife Services 2023.

In the last round of wolf listing litigation, the district court held that the Service's determination that "post-delisting federal public land management regimes provide adequate regulatory mechanisms was arbitrary and capricious."[67] The Service has pointed to no improvements in these regulatory regimes that could compel a different conclusion now.

The Threats of Decreased Genetic Variability and Impaired Wolf Dispersal, Connectivity

Section 4 of the ESA requires the Service to consider "other natural or manmade factors affecting its continued existence" when assessing whether a species should be listed.[68] However, in refusing to relist northern Rockies wolves, the Service failed to adequately consider the threats from decreased genetic variability and connectivity.

Too low wolf population numbers impair genetic health. The best available science shows that the effective population size of wolves in the northern Rockies is too low and is threatening wolf viability now and in the foreseeable future.

Modern conservation genetics demonstrates that "effective" population size (N_e) is likely just a fraction of the censused population (N). For social species like wolves with an alpha-pair breeding system, the N_e/N ratio may be 0.1, or over lower.[69] Despite this best available science, in its modelling, the Service unreasonably estimated the average ratio of effective to census population size as approximately 0.17.[70]

About a decade ago, conservation geneticists widely accepted N_e = 500 as a minimum for long-term maintenance of healthy genetic variation.[71] In that case, an interconnected metapopulation would require a minimum census size of N = 5,000. Since then, evidence has accumulated showing that N_e = 500, N= 5,000 is too low for retaining evolutionary potential for fitness in perpetuity; a better approximation is N_e = 1,000, N= 10,000.[72] Densities that fluctuate below these minimums could cause bottlenecks, with long-term negative impacts on genetic variation,[73] while larger populations with higher genetic variation have increased viability.[74]

Despite this best available science, the Service unreasonably concluded that an effective population size of just 50 wolves would avoid inbreeding depression and other threats to genetic health.[75]

Idaho and Montana expect to drive their wolf population numbers down to 500 wolves and 450 wolves, respectively, under their state wolf management plans. Even assuming the

[67] *See Defs. of Wildlife v. U.S. Fish & Wildlife Serv.*, 584 F. Supp. 3d 812, 832 (N.D. Cal. 2022).
[68] 16 U.S.C. § 1533(a)(1)(E)
[69] Bergstrom et al. 2019; Bergstrom et al. 2009; vonHoldt et al. 2023.
[70] USFWS 2024, p. 170.
[71] Allendorf et al. 2012; vonHoldt et al. 2023.
[72] Frankham et al. 2014.
[73] Allendorf et al. 2012.
[74] Kardos et al. 2021; Willi et al. 2021.
[75] USFWS 2023.

number of wolves in Wyoming remains approximately stable in the coming years, that would bring the total number of wolves in the region to under 1,200 wolves. This is far below the threshold needed to avoid endangerment, according to population viability experts. Even adding in the small populations outside the northern Rockies, the total wolf population in the western U.S. does not reach the viability threshold. The Service estimates 2,979 wolves across seven states in the Western U.S., which is far less than the minimum of 5,000 – 10,000 needed for a viable population.

For these reasons, scientists have concluded that the Service's wolf population goals for the northern Rockies are inadequate.[76] Scientists have warned that "large reductions in population size or reduced connectivity with the larger western North America metapopulation" could lead to a "genetically impoverished" population.[77]

Indeed, a recently published study concludes that the level of genetic variability observed in the northern Rockies wolf population is already insufficient for long-term viability. vonHoldt et al. (2023) concludes that minimum effective population sizes in the northern Rockies "are below sizes predicated to avoid long-term risk of extinction." Further, gray wolves in the northern Rocky Mountains have lower genomic diversity than wolves of the western Great Lakes, and that diversity has declined over time.[78] Such decreasing genomic diversity for northern Rockies wolves impairs their viability through inbreeding depression and numerous other mechanisms such as reduced ability to resist disease.[79] The Service ignored this key science without any explanation.

As such, the low wolf population numerical goals and observed decreases in genetic variability for wolves in the northern Rockies shows that they are not viable in the long-term. The Service inadequately considered this threat, which compels relisting.

High levels of wolf killing impair connectivity. The Service failed to consider best available science on how high levels of wolf killing in the northern Rockies impairs the ability of wolves to disperse to and connect with wolves in other areas. Dispersing wolves allow smaller populations to function as part of a metapopulation, enhancing genetic diversity.[80] The threat to dispersal and connectivity impairs the viability of wolves across several significant portions of their range, including the West Coast and southern Rockies, as well as within the northern Rockies.[81]

A recent study shows that wolf dispersal and connectivity is harmed by high levels of wolf killing.[82] The study explained that "human-caused mortality reduces distance, duration and

[76] Bergstrom 2011; Bergstrom 2014; Bergstrom et al. 2009; Bergstrom et al. 2019; Kareiva et al. 2021.
[77] Ausband 2022.
[78] vonHoldt et al. 2023; *see also* Leonard et al. 2005.
[79] DeCandia et al. 2020; Jimenez et al. 2010; *see also* Niedringhaus et al. 2019 for a review of impacts of mange on gray wolves.
[80] Geffen et al. 2004; Musiani et al. 2007.
[81] *See Defs. of Wildlife v. Hall*, 565 F. Supp. 2d 1160, 1172 (D. Mont. 2008) (holding that plaintiffs were likely to succeed on their claim that the Northern Rocky Mountain DPS remained endangered due to lack of connectivity).
[82] Morales-González et al. 2022.

success of dispersal events. Dispersers are particularly vulnerable to human-caused mortality, and its additivity to natural mortality evidences these negative effects".[83] Killing compounds harmful impacts to dispersal caused by human development.[84]

Despite this science, the Service assumes – without any reasoned explanation – that wolves in the northern Rockies will remain connected with wolves in the West Coast and Canada, even after the northern Rockies population plummets, as the Service predicts.

If protected from the predicted wolf population decline, wolves in the northern Rockies could provide a needed source of genetic variation for recovering wolves in the West Coast states and southern Rockies, as well as Mexican gray wolves.[85] Such dispersal events create small recolonizing populations that are "important in part because their genetic composition can diverge rapidly from that of the source population, given the small number of founders."[86]

Even with Colorado's historic reintroduction efforts, the effective breeding population size for wolves in Colorado is too low to avoid risk of inbreeding depression without dispersals of Wyoming wolves into Colorado.[87] In addition, without federal protections returned to wolves in Wyoming, precious wolves reintroduced to Colorado will continue to be shot or trapped when they cross the Wyoming border, which further impairs this significant portion of the wolf's current range.[88]

Wolves dispersing from the northern Rockies are also essential for recovery of West Coast wolves. The recolonization of wolves in western Oregon and Washington has been slow, and the killing of wolves in the northern Rockies is a threat as it hinders the ability of wolves to disperse and repopulate unoccupied areas in the West Coast, which is a significant portion of the wolf's current range.[89] Nevertheless, the Service failed to consider how high levels of wolf killing in the northern Rockies threatens wolf recovery elsewhere.

For all these reasons, the Service failed to adequately consider the threat to wolves posed by decreased genetic variability and connectivity.

Wolves are Imperiled in Significant Portions of Their Range in the Western DPS

Under the ESA, a species must be listed as endangered or threatened if it satisfies the requirements for either status throughout "all" of its range or throughout "a significant portion of its range" ("SPR").[90] The requirement to list a species if it is endangered or threatened

[83] Morales-González et al. 2022.
[84] *Id.*
[85] Hedrick & Fredrickson 2010; Hedrick et al. 2018.
[86] Carroll et al. 2021.
[87] vonHoldt et al. 2023.
[88] Koshmrl 2023.
[89] Wielgus 2019.
[90] 16 U.S.C. § 1532(6), (16), (20).

throughout an SPR applies not just to biological species, but also to a DPS of such species.[91] Federal courts have rejected numerous Service interpretations of "significant portion of its range," limiting any subsequent agency interpretations. The Service cannot employ an interpretation that functionally equates a species being endangered in an SPR with being endangered in all of its range.[92] Similarly, the Service cannot rely on the viability of wolves in some states—such as Idaho and Montana—to render other portions of a DPS insignificant.[93] Furthermore, the Service must adequately explain why certain portions and not others qualify as "significant."[94]

Here, the Service concluded that wolves in the western part of the United States satisfy its DPS requirements of significance and discreteness, establishing a Western DPS.[95] After concluding wolves are not endangered or threatened in all of this DPS, the Service conducted an SPR analysis for four areas—Idaho, Montana, the West Coast states, and the NRM— ultimately concluding that wolves are not in danger of extinction in these areas, so listing of the Western DPS is not warranted.[96] Yet, the best available information shows that wolves in the West Coast states are both imperiled and significant. Further, the Service acted unreasonably in not conducting an SPR analysis for the southern Rockies and Wyoming because factors the agency determined required further SPR evaluation of the four evaluated areas also apply to Wyoming and southern Rockies states. Moreover, the best available information establishes that wolves in both areas are imperiled. For these reasons, the Service's SPR analysis was arbitrary and capricious.

Significance of Southern Rocky Mountains and Wyoming.[97] Wolf populations in the Southern Rocky Mountains and Wyoming are significant. Indeed, factors the Service used to find West Coast states, Idaho, and Montana significant (or at least worthy of further SPR evaluation) also apply to the southern Rockies and Wyoming. Yet, the Service did not conduct an SPR analysis for these latter regions, highlighting the unreasonableness of its approach.

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[91] *Id.*; *see also Crow Indian Tribe v. United States*, 965 F.3d 662, 671 (9th Cir. 2020) ("If a DPS exists, such segment is considered a 'species' in and of itself, independent from the rest of the biological species." (citation omitted)).

[92] *See, e.g.*, *Desert Survivors v. U.S. Dep't of Interior*, 321 F. Supp. 3d 1011, 1072-74 (N.D. Cal. 2018); *Desert Survivors v. U.S. Dep't of the Interior*, 336 F. Supp. 3d 1131, 1133-37 (N.D. Cal. 2018) (vacating definition of "significant" in 2014 SPR policy); *Ctr. for Biological Diversity v. Jewell*, 248 F. Supp. 3d 946, 956-58 (D. Ariz. 2017).

[93] *Defs. of Wildlife v. Sec'y, U.S. Dep't of Interior*, 354 F. Supp. 2d 1156, 1168 (D. Or. 2005) (rejecting the Service's argument that "the long-term viability of the Northern Rockies population renders all other areas in the Western DPS insignificant" because FWS interpretation "'has the effect of rendering the phrase [significant portion of its range] superfluous'" (citation omitted)).

[94] *Defs. of Wildlife v. U.S. Fish & Wildlife Serv.*, 584 F. Supp. 3d 812, 828 (N.D. Cal. 2022) ("But the Service has not sufficiently explained how it draws that line. Because the Service has not provided any threshold for meaningfulness, the Court cannot assess whether the Service's interpretation gives independent meaning to the phrase or has again implemented an interpretation that renders it redundant or superfluous.").

[95] USFWS 2024.

[96] *Id.*

[97] Although the Service further evaluated the West Coast states (western Oregon, western Washington, and California) as parts of its SPR analysis, it is not clear whether the Service considered them significant. The best available information establishes that they are significant for the reasons identified in the Petition. *See* Center for Biological Diversity et al. 2021, p. 13-14.

The Southern Rocky Mountains are significant. To start, they represent a unique ecological setting. The U.S. Forest Service has created a hierarchical classification system that divides the U.S. into ecoregions based on vegetation and climate with the highest level of classification being domains, followed by divisions and provinces.[98] Under this system, the Southern Rocky Mountains includes the Colorado Plateau Semidesert Province, unlike any other region in the lower 48 states, making the region significant.[99] In fact, in determining the West Coast may be significant the Service explained that "wolves in th[o]se states occupy unique ecoregional provinces not otherwise represented in the NRM."[100]

Additionally, the Southern Rocky Mountains contain extensive habitat for wolves, so loss of wolves in this area would create a significant gap in range.[101] Carroll et al. (2006) identify Colorado as one of the states (along with Montana, Idaho and Wyoming) capable of supporting "the largest potential wolf populations," and estimate the state could support nearly 1,000 wolves with Utah being able to support more than an additional 600 wolves.[102] The Service discounted the Southern Rocky states as insignificant because it determined that they "could not be considered significant in light of the small proportion of occupied current range that exists in those individual states."[103] But this is inconsistent with the Service's determination that further SPR analysis for the West Coast states was warranted because there are "substantially fewer wolves [there] than the remainder of the gray wolf's range in the Western United States."[104]

Further, the Service's conclusion regarding the southern Rockies states' insignificance appears to be based on its faulty analysis that they do not "contribute to the viability of the species" since they do not "represent a large percentage of the [current] range."[105] But this is nothing more than a variation of the Service's past unlawful efforts to render non-core areas insignificant based on the viability of wolves in core areas.[106] Moreover, the ESA's conservation purpose would be undermined if the lack of recovery progress in a region could somehow foreclose its consideration as a "significant portion," especially an ecologically unique region like the southern Rockies.

Wyoming is also significant, or at least worthy of further SPR evaluation, because, as the Service concluded for Idaho and Montana, it is an area "where there are elevated threats such

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[98] McNab & Avers 1994.
[99] McNab et al. 2007.
[100] USFWS 2024; *see also* 61 Fed. Reg. 4722, 4725 (Feb. 7, 1996) (including "[p]ersistence of the [population] in an ecological setting unusual or unique for the taxon" as a factor to consider when evaluating the significance of a DPS).
[101] *See* 61 Fed. Reg. at 4725 (including "[e]vidence that loss of the [population] would result in a significant gap in the range of a taxon" as a factor to consider when evaluating the significance of a DPS).
[102] Carroll et al. 2006; *see also* Bennett 1994; Miller et al. 2003.
[103] USFWS 2024
[104] *Id.*
[105] *Id.*
[106] *See Defs. of Wildlife v. Sec'y, U.S. Dep't of the Interior*, 354 F. Supp. 2d at 1168 ("By ruling out all other portions of the wolf's range because a core population ensures the viability of a DPS, the Secretary's interpretation 'has the effect of rendering the phrase [significant portion of its range] superfluous.'" (citation omitted)).

that the status may be different than the status of the species through its range".[107] For example, in Wyoming's predator zone—which constitutes about 85% of the state—wolves can be killed at any time, without a license, and using virtually any method.[108]Although the Service considered Wyoming in assessing the NRM, "human-caused mortality is managed at the individual state level,"[109] so it should have been evaluated separately as well. Further, Wyoming, like Idaho and Montana, represents a large portion of currently occupied range.

Imperiled status of wolves in the West Coast states, Southern Rocky Mountains, and Wyoming. The best available scientific and commercial information shows that wolves in the West Coast states, southern Rockies, and Wyoming qualify as endangered or threatened under the ESA. Indeed, wolves on the West Coast and in the southern Rockies are currently listed as endangered. And leaving wolves in the current NRM DPS unlisted threatens not only those wolves who are currently delisted, but it also threatens currently listed wolves in Colorado and on the West Coast.

First, wolves in all three areas are at risk of overutilization and current regulatory mechanisms are inadequate to protect them (as also explained above). Starting with the West Coast states, Oregon no longer protects wolves as a state endangered species.[110] State agents can kill wolves for livestock predation control under the state's inadequate management plan.[111] Wolf poaching, including by poisoning, is high in Oregon, and occurs largely in portions of the state where wolves are currently federally delisted.[112] The Oregon Department of Fish and Wildlife recently reported that more than one-third of known wolf mortalities were caused by illegal take and identified eight cases of wolf poisoning in 2021 alone.[113] The recolonization of wolves in western Oregon has been slow, and the killing of wolves in the eastern part of the state is a threat since it hinders the ability of wolves to disperse and repopulate unoccupied areas.

In Washington, wolves are classified as an endangered species under state law,[114] but state managers kill wolves for livestock predation control.[115] Wolves also face unlimited killing on the Confederated Tribes of the Colville Reservation in northeastern Washington. In 2019, they adopted wolf hunting regulations that allowed for year-round hunting with no bag limits.[116] Again, killing of wolves in the delisted portions of Washington state is a threat since it hinders the ability of wolves to disperse and repopulate unoccupied areas.

In the Southern Rocky Mountains too, wolves face significant threats. A Utah law aims to keep wolves out of the state, including instructing state managers to seek removal of wolves who enter the portion of the state where wolves are currently listed under the ESA.[117] Further, the

[107] USFWS 2024
[108] WYO. ADMIN. CODE Tit. 40, Ch. 21 §§ 3, 4; WYO. STAT. ANN. § 23-3-103.
[109] USFWS 2024.
[110] OR. ADMIN. R. 635-100-0125.
[111] Oregon Department of Fish & Wildlife ("ODFW") 2019.
[112] Brown 2023.
[113] *Id.*; ODFW 2022.
[114] WASH. ADMIN. CODE 220-610-010.
[115] Washington Department of Fish & Wildlife ("WDFW") 2011; WDFW 2018.
[116] CCT CODE Tit. 4, Ch. 4-1; CCT Business Council Resolution 2019–255 (May 9, 2019).
[117] UTAH CODE § 23A-15-201.

state-sanctioned killing of wolves and mismanagement in Wyoming is hampering wolf recovery in Colorado, where wolf packs have only recently been documented. While wolves that travel across the Wyoming-Colorado border into Colorado or who are reintroduced in Colorado are federally protected under the ESA, wolves who cross from Colorado into Wyoming are not and can be killed under Wyoming law.[118] Wyoming's "predator zone"—where wolve can be killed without a license in nearly any manner and at any time—covers roughly 85% of the state, including the entire border region shared with Colorado.[119] Recent media reports highlight the intent of Wyoming ranchers to kill any wolves who cross over from Colorado[120] and also document Wyoming hunters' history of killing wolves who have done so.[121]

Wolves in Wyoming are likewise imperiled. As discussed above, they are subjected to unlimited killing in the predator zone. Even wolves in the trophy game area face high levels of exploitation. In 2017, the state instituted a wolf hunting season with the biological objective to reduce the wolf population in the trophy game areas by approximately 24%, and the end of year wolf population decreased 16% from 2016 to 2017.[122] And the Service has cautioned that continued high rates of juvenile mortality of Wyoming wolves could affect recruitment.[123]

Moreover, the genetic health of wolves in the West Coast states and the southern Rockies is perilous (Factor E). As discussed above, the best available science confirms that an effective population size of at least 500 wolves and as many as 1,000 wolves is necessary to ensure the genetic health of populations—and that effective population size is a mere fraction of the censused population.[124] Yet the Service concluded the *censused* population of western Washington, western Oregon, and California was only 107 wolves.[125] And, in Colorado, even with reintroduction, the effective breeding population size for wolves in Colorado is too low to avoid risk of inbreeding depression, without regular dispersals of Wyoming wolves into Colorado.[126] Such dispersal is surely hindered since Wyoming wolves crossing into Colorado must travel through Wyoming's predator zone, where the animals can be aggressively hunted at any time.

Finally, the loss of historical wolf range in both the West Coast states and the Southern Rocky Mountains cannot be ignored when assessing whether wolves in these areas are endangered or threatened. While the Service has defined "range" to include current range and this interpretation has been upheld by two courts, the agency must still—at a bare minimum—"consider the scope of the species' historical range, and the impact that material contraction or relocation might indicate for survival within a currently constricted or confined range."[127]

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[118] WYO. ADMIN. CODE Tit. 40, Ch. 21 §§ 3, 4; WYO. STAT. ANN. § 23-3-103.
[119] WYO. ADMIN. CODE Tit. 40, Ch. 21 §§ 3, 4; WYO. STAT. ANN. § 23-3-103.
[120] Heinz 2023.
[121] Koshmrl 2023.
[122] WGFD 2018.
[123] 85 Fed. Reg. at 69805.
[124] Allendorf et al. 2012; Frankham et al. 2014; VonHoldt et al. 2023.
[125] USFWS 2024.
[126] vonHoldt et al. 2023.
[127] *Humane Soc'y of the U.S. v. Zinke*, 865 F.3d 585, 606 (D.C. Cir. 2017); *see also Ctr. for Biological Diversity v. Zinke*, 900 F.3d 1053, 1067 (9th Cir. 2018) (upholding Service's interpretation of "range" but noting Service's

Breeding populations of gray wolves remain absent from vast swaths of their historical range in the western United States. Scientists have identified extensive wolf habitat in areas where wolves have not yet recovered.[128] In the western United States, this includes the Central and Southern Rocky Mountains in both Colorado and Utah, the Olympic Peninsula in Washington, the Cascade Mountains in Washington, Oregon and California, and the Sierra Nevada in California. Many additional wolves could likely populate the southern Rockies and West Coast regions, increasing the existing populations and creating a network of interconnected populations necessary for genetic health.[129] Thus, the current perilous status of wolves in the West Coast states and in the Southern Rocky Mountains is further exacerbated by the fact that the species has not recovered in much of its historic range in these regions.

For these reasons, the Service acted arbitrarily and capriciously when it failed to list the Western DPS in its entirety because wolves are imperiled in significant portions of their range in this DPS.

CONCLUSION

In sum, the Service's not-warranted determination for listing of wolves in the Northern Rocky Mountains or a Western DPS violates the ESA. If the Service does not act to correct the violations described in this letter, Petitioners plan to pursue litigation in U.S. District Court in 60 days.[130] We will seek injunctive and declaratory relief, and legal fees and costs regarding these violations.

If you have wish to discuss this matter or believe this notice is in error, please contact me at 651-955-3821.

Sincerely,

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policy "requires that FWS consider the historical range of a species in evaluating other aspects of the agency's listing decision").

[128] Mladenoff et al. 1995; Carroll et al. 2006; Morell 2008.

[129] Weiss et al. 2014.

[130] *See* 16 U.S.C. § 1533(b)(3)(C)(ii).

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