A PETITION FOR THE EMERGENCY RELISTING OF THE NORTHERN ROCKIES/ WESTERN NORTH AMERICAN POPULATION OF GRAY WOLVES (Canis lupus)

Petition Submitted to the U.S. Secretary of Interior Acting through the U.S. Fish and Wildlife Service

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INTRODUCTION

Pursuant to 16 U.S.C. § 1533(b)(3) of the Endangered Species Act ("ESA") and its implementing regulations, 50 C.F.R. § 424.14, as well as 5 U.S.C. § 553 of the Administrative Procedure Act ("APA"), Petitioners hereby submit to the U.S. Department of the Interior ("DOI"), and the U.S. Fish and Wildlife Service ("Service" or "FWS"), a petition for the emergency relisting of the of the gray wolf (*Canis lupus*) in the Northern Rocky Mountains ("NRM"), or, in the alternative, in the western United States including the Northern Rocky Mountains, as a Distinct Population Segment ("DPS"). Idaho and Montana have drastically altered their wolf management laws and regulations to push populations below viable levels. Idaho, for instance, allows for essentially unregulated and unlimited wolf-killing.

In its 2009 rule delisting the NRM DPS, the Service made the following commitment: "if a State changed their regulatory framework to authorize the unlimited and unregulated taking of wolves, a condition we have previously determined threatened a wolf population, emergency listing would be immediately pursued." Final Rule To Identify the Northern Rocky Mountain Population of Gray Wolf as a Distinct Population Segment and To Revise the List of Endangered and Threatened Wildlife, 74 Fed. Reg. 15,123, 15,148 (Apr. 2, 2009). Given the regulatory changes in Idaho and Montana, and continued inadequacy of state management in Wyoming, the Service must adhere to its 2009 promise to relist wolves on an emergency basis Petitioners respectfully request that the Service immediately protect the NRM DPS, or the Western DPS, with its emergency listing authority under ESA, 16 U.S.C. § 1533(b)(7).

LEGAL AND FACTUAL BACKGROUND

The ESA listing criteria states that a species may be determined to be an endangered species or a threatened species because of one or more of the five factors described in section 4(a)(1) of the Act (16 U.S.C. 1533(a)(1)):

A. The present or threatened destruction, modification, or curtailment of its habitat or range [Factor A];
B. Overutilization for commercial, recreational, scientific, or educational purposes [Factor B];
C. Disease or predation [Factor C].
D. The inadequacy of existing regulatory mechanisms [Factor D]; and
E. Other natural or manmade factors affecting its continued existence [Factor E].

The ESA also gives the Secretary of the Interior authority to list a species on an emergency basis for 240 days if she determines there is a "significant risk" to the well-being of any species. 16 U.S.C. § 1533(b)(7).

The story of the gray wolf in the lower 48 states, including its near-extirpation and later efforts to reintroduce the species in central Idaho and Yellowstone National Park, has been told many times, including by the Service. *See, e.g.*, 2003 Wolf Downlisting Rule, 68 Fed. Reg. 15,804, 15,805–07 (Apr. 1, 2003) (recounting the gray wolf's decline and subsequent efforts to protect

and reintroduce the species). For purposes of this Petition,[1] we begin in 1987—after the Service listed grey wolves as endangered and just before efforts to reintroduce them to the Northern Rockies began in the mid-1990s.

In 1987, the Service approved a revised recovery plan for the Northern Rocky Mountain gray wolf that "recommended a combination of natural recovery and reintroduction be used to recover wolves in the area around Yellowstone National Park . . . north to the Canadian border, including central Idaho." Wolf Reintroduction Rule, 59 Fed. Reg. 60253 (Nov. 22, 1994). The 1987 revised recovery plan defined "recovery" as securing and maintaining a minimum of 10 breeding pairs in each of three recovery areas—Yellowstone, Central Idaho, and Northwest Montana—for three years. *See* 1987 Wolf Recovery Plan at 15. These goals represented minimal—and inadequate—recovery criteria.

The Northern Rocky Mountain ("NRM") population of gray wolves met the Service's 1987 minimum recovery goals under the ESA through three decades of reintroduction, management, and coexistence efforts. In 2009, after the FWS determined the minimal 1987 recovery objectives had been met, the FWS prematurely delisted wolves in Idaho and Montana and turned management back over to the states. *See* 74 Fed. Reg. 15,123. Even though the rule was declared unlawful by a federal court, it went into effect by congressional rider in 2011.

When the Service delisted grey wolves in Idaho and Montana in 2009, it stated: "[I]f a State changed their regulatory framework to authorize the unlimited and unregulated taking of wolves . . . emergency listing would be immediately pursued." 74 Fed. Reg. at 15,148.

Recently passed laws in Idaho and Montana have done just that, triggering emergency relisting of gray wolves. Idaho's new law allows hunters, trappers, and private contractors to kill wolves year-round, at any age and with no limits. Montana's new rules allow the killing approximately 85% of the wolf population and has a disproportionate impact to wolves from Yellowstone National Park, where they are habituated to seeing people almost daily and have little to no fear associated with humans, when they leave the protection of the park boundary.

Based on these changes, hundreds of thousands of people across the US and around the world are asking for emergency relisting of Northern Rockies' wolves. Regional tribes including the Nez Perce Tribe and Shoshone-Bannock tribes, twenty-three US Senators and 81 US Representatives 81 US Representatives, Dan Ashe, the former US Fish and Wildlife Service national director and now head of the American Association of Zoos and Aquariums, and more than 70 directors of zoos across the nations that have formally requested emergency relisting of the Northern Rockies wolves. s So too have Dr. Jane Goodall and over 800 of the world's top scientists.

The FWS must respond to these calls for action in light of the new regulatory changes and immediately initiate emergency listing, as it promised to do in 2009.

[1] The undersigned incorporate by reference the listing history set forth in WWP et al., A Petition to List the Western North American Population of Gray Wolves As A Distinct Population Segment at 8-13 (July 29, 2021).

GROUNDS FOR EMERGENCY RELISTING

I. Regulatory Changes in Idaho and Montana Warrant Emergency Listing

A. Idaho

Prior to the 2009 federal delisting, the State of Idaho pledged to manage wolves the same way it managed other predators. At a FWS wolf delisting hearing in Boise on March 6, 2007, James Caswell, representing Governor Butch Otter, stated:

> *"I'm here to tell you straight up that Idaho is going to manage wolves exactly like we manage black bears and mountain lions as a commitment, not only on behalf of the governor, the legislature, the Idaho Fish and Game Commission and the Department. The estimated black bear and cougar populations are 20,000 and 3,000, respectively. Idaho has a proven record of responsible large carnivore management. And we will continue this track record with wolves."*

However, on July 1, 2021, the State of Idaho began a campaign to eradicate its wolf population and allows the use of bounties, traps, snares, night raids, hunting hounds, and even the killing of nursing pups and mothers in their dens.[2] This has resulted in renewed persecution of a keystone

[2] Despite Mr. Caswell's statement in 2007, the State of Idaho is returning to its 2001 anti-wolf position when the legislature adopted House Joint Memorial No. 5, which stated:

> NOW, THEREFORE, BE IT RESOLVED by the members of the First Regular Session of the Fifty-sixth Idaho Legislature, the House of Representatives and the Senate concurring therein, that this Legislature not only calls for, but demands, that wolf recovery in efforts in Idaho be discontinued immediately, and wolves be removed by whatever means necessary.

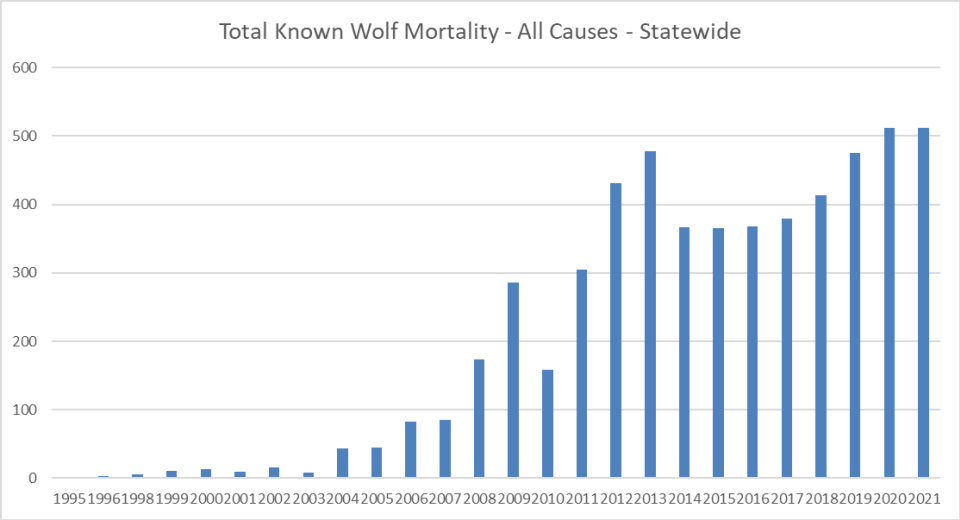
While the State of Idaho Post-delisting Wolf Management Plan pays lip service to recovery, it incorporates this position:

> The State of Idaho is on the record asking the federal government to remove wolves from the state by the adoption in 2001 of House Joint Memorial No. 5. The position reflected in House Joint Memorial No. 5 continues to be the official position of the State of Idaho. However, in order to use every available option to mitigate the severe impacts on the residents of the State of Idaho, the state will seek delisting and manage wolves at recovery levels that will ensure viable, self-sustaining populations.

species in the region's ecosystem and is swiftly reversing decades of recovery efforts and successes. Entire packs are being destroyed by this wanton killing.

Specifically, the State of Idaho now permits unlimited killing of wolves using "any method utilized for the take of any wild canine in Idaho." Senate Bill No. 1211 (2021).[3] That means that any method used to kill coyotes (classified as "predatory" in Idaho and killed without limit) can be used to kill wolves. There is no limit to the number of tags people can buy to kill wolves. All tags are valid in any open season and any unit and most seasons in wolf occupied areas are year-round.

This new legislation comes on top of years of increased and unsustainable pressure on the wolf population. There were a reported 786 surviving wolves in Idaho in December 2015 (IDFG 2016). In 2021, over 500 wolves were reported killed in Idaho marking the fourth straight year that potentially more than half of the surviving wolf population has been killed in the subsequent year.



Idaho Statewide Wolf Mortality Data, 1995 -2021 (Idaho Dept. of Fish and Game, 2022)

Despite new aggressive hunting and trapping initiatives in 2021, overall wolf mortality did not increase as expected pointing to a declining wolf population.

Demographic studies of wolves in North America reported by Fuller et al. (2003) indicated annual human-caused mortality rates above 0.23 resulted in population declines and more recent

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Idaho Legislative Wolf Oversight Committee as amended by the 56th Idaho Legislature, Idaho Wolf Conservation and Management Plan 4 (March 2002), *available at* https://idfg.idaho.gov/old-web/docs/wolves/plan02.pdf.

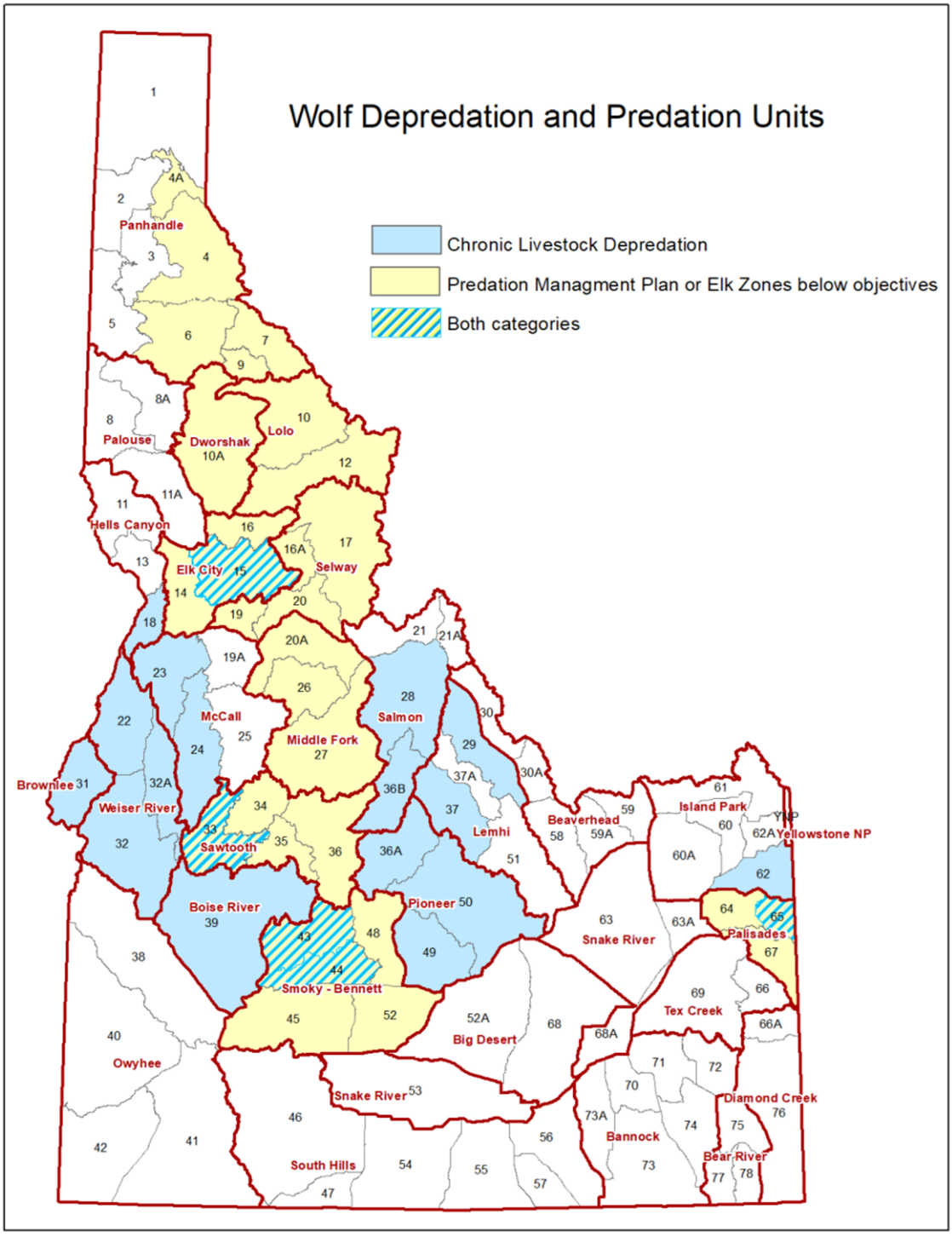
[3] *Available at* https://legislature.idaho.gov/wp-content/uploads/sessioninfo/2021/legislation/S1211.pdf

analysis detected the decline in population levels at only 0.18. The full range of values of 18-29% come from four studies: Vucetich 2012 for the low end, Adams et al. 2008 for the high end, and Fuller et al. 2003 and Creel & Rotella for intermediate values. **Idaho's wolf mortality reports include only reported human caused mortality and are well over the rates presented by any of these studies indicating that the Idaho wolf population has been in decline for some time**. Given the further deregulation of wolf hunting and new incentives to kill wolves in Idaho, this graph indicates that the population is declining to levels that may lead to the swift extirpation of wolves in Idaho. The latest peer-reviewed research that came out this month from Wisconsin shows that states without precise data on births and deaths of wolves risk state extirpation even when they claim to be aiming for a so-called safe population size (Treves et al, in review).

Further, these intense extermination measures are occurring both during the breeding and denning season and at the boundaries of protected landscapes. The unregulated timing and locations of this slaughter is removing breeding and dispersing individuals, which will have a severe negative impact on genetic connectivity. A study by vonHoldt et al. (2010) surveyed genetic connectivity across the NRM wolf populations between 1995 and 2004. The study found that each designated NRM recovery area is genetically distinct and carries unique, identifiable genetics.[4] Reduction of the population size removes critical genetic variations. Exterminating breeding and dispersing wolves impacts the genetic health of a population (vonHoldt et al 2010). To prevent the extirpation of NRM wolf populations and threatening the long-term persistence of the species, this slaughter must not be permitted.

The State of Idaho is also contributing funding to bounties to private individuals for killing wolves of any age, from $1000 per wolf in 2020 to up to $2500 per wolf in 2021 and very possibly higher in the future. Higher bounties is available for wolves killed in "chronic" conflict areas. Each conflict area is defined by game management units and often contain tens of thousands of livestock. Idaho Department of Fish and Game ("IDFG") defines these "chronic conflict areas" as one or more confirmed livestock loss to wolves in 4 out of 5 years. The core of the state's wolf population occurs within these game management units that are defined as "chronic" conflict areas (Jon Rachel, IDFG State wolf manager). And, as noted, wolf bounties were one of the main mechanisms through which wolves were eradicated from Idaho to begin with.

[4] Although vonHoldt et al. (2010) reported favorable levels of variation with minimal inbreeding and some genetic exchange between Montana, Idaho and Wyoming, this dataset is now antiquated and does not represent the best science possible by today's standards. New, updated data are needed to accurately make predictions of management needs and the survival of the NRM gray wolf populations.



IDFG justifies its liberal hunting and trapping policies by claiming that they are needed to prevent livestock conflicts and/or "protect" wild ungulates. This flies in the face of modern science, modern science, which shows that wolf killing does not prevent wolf-livestock conflicts or reliably boost wild ungulate populations (Santiago-Avila et al 2018, Clark and Hebblewhite 2021, and Treves et al in review). Nor is it needed, since IDFG employs professionals to advance

both objectives. IDFG kills wolves by annually aerially gunning wolf packs in "Elk Zones below objectives" and by private trappers aided by state and privately funded bounties in its "Predation Management Plan" zones. Wildlife Services, within the U.S. Department of Agriculture Animal and Plant Health Inspection Service, also responds to requests for assistance from livestock producers by killing wolves in Idaho—and is partially compensated for its efforts by the Idaho's "Wolf Depredation Control Board."

IDFG announced last month that the statewide wolf population has been unchanged since 2020 despite the increased pressure through unlimited and unregulated hunting combined with a lucrative bounty system. However, the agency is relying on a camera study model of both population and range. Camera studies can be effective at documenting the range of a species but are less reliable in documenting sudden or substantive changes in the population and current research indicates that camera trap studies frequently do not meet the requirements necessary to produce unbiased density estimates and typically overestimate true densities (Tobler & Powell 2013). And IDFG has admitted during the January 27, 2022 commission meeting that the most recent wolf population estimate in 2022 cannot detect the effects of the June 2021 rule changes. A clear understanding of the IDFG study designs with respect to camera layout, number of cameras, study length, and camera placement, etc. is essential in determining the validity of IDFG's population assessments but the state has not provided this information to the public.

Montana

Meanwhile, Montana regulatory changes newly target wolves in the Yellowstone ecosystem, further warranting that the Service reinstate federal protections

The National Park Service has determined that wolves in Yellowstone's northern range spend an estimated 5% of their time outside the park. In the fall these wolves follow migrating elk out of the park or leave their birth pack and enter Montana in search of a mate or new territory. Many of the wolves that leave the park from the northern range enter Montana Wolf Management Unit ("WMU") 313 and WMU 316, which are adjacent to the park's northern boundary. Prior to this year those two units each had a quota that limited the number of wolves that could be killed.[5] With the elimination of quotas adjacent to Yellowstone National Park, there are no longer any quotas for wolf hunting and trapping throughout the N. Rockies region.

However, after the 2021 wolf hunting season ended, the Montana Fish and Wildlife Commission abolished the quotas in WMU 313 and 316. Abolishing those quotas led to a significant increase in the killing of Yellowstone wolves in Montana compared to previous years. As the table below shows, in WMU 313 and 316 more Yellowstone National Park wolves have been killed so far this hunting season than in the five previous seasons combined.[6]

[5] Natl. Park Serv., News Release: Three Yellowstone wolves killed in Montana during first week of Montana's hunting season (Sept. 27, 2021), *available at* https://www.nps.gov/yell/learn/news/21028.htm.

[6] Data source: https://www.nps.gov/aboutus/foia/upload/YELL-Montana-Wolf-Mangement-Documents-January-7-2022.pdf

Yellowstone wolves killed by unit and season	WMU 313	WMU 316	Total in both units
2016-2017	3	3	6
2017-2018	0	2	2
2018-2019	1	1	2
2019-2020	2	0	2
2020-2021	2	0	2
Total killed 2016-2021 with quota in place	8	6	14
2021-2022 (as of 2/2/22 with no quota)	16	3	19

When the Fish and Wildlife Commission chose to abolish the quota in WMU 313 and 316, they changed Montana's wolf management practices. This re-established wolves in Montana as threatened or endangered and provides the basis for an emergency relisting now under Factors A, B, and D as described below.

With respect to Factor A (the present or threatened destruction, modification, or curtailment of its habitat or range), the range and habitat of wolves leaving Yellowstone National Park in Wyoming and entering Montana has been curtailed by the hunting and trapping in WMU 313 and 316 of so many of the traveling wolves.

According to Yellowstone National Park, ninety-eight percent of wolves in Montana live outside WMU 313 and 316. *See* n.5, above. When Yellowstone wolves breed with Montana wolves, they can improve the genetic health of Montana's wolf population and the genetic health of wolves in the Northern Rockies. However, Yellowstone wolves are being stopped from reaching those Montana wolves by being hunted and trapped in WMU 313 and 316. Of the 18 wolves that Montana Fish, Wildlife & Parks (FWP) reports being killed in WMU 313 as of 2/7/20, 16 are Yellowstone wolves. Of the three wolves reported by FWP as killed in WMU 316, all are Yellowstone wolves.[7] Yellowstone National Park reports that the Phantom Lake Pack with a territory that straddles northern Yellowstone and Montana is now considered eliminated after up to seven of its members were killed in WMU 313.

With respect to Factor B (overutilization for commercial, recreational, scientific, or educational purposes) Montana is overutilizing WMU 313 and 316 for commercial (outfitters and guides) and recreational (hunters without outfitters) purposes.

[7] *See* https://mtfwp.maps.arcgis.com/apps/dashboards/e6fb069d45b74034ad85569e5f96ae7a (FWP data) *and* https://www.nps.gov/yell/learn/nature/wolf-restoration.htm (NPS data).

WMUs 313 and 316 are two of the smallest wolf management units in Montana. These two units combined encompass only .5% of Montana's land area but together these two units account for 10% of all wolves killed in Montana as of 2/7/22.

The taking of wolves in WMU 313 and 316 is not required to protect livestock or wildlife. On December 16, 2021, Yellowstone National Park Superintendent Cam Sholly wrote a letter to Montana's governor Greg Gianforte, asking him to stop the hunting in WMUs 313 and 316. *See* n.6, above. Superintendent Sholly wrote that Montana's data shows little to no wolf-related depredation in northern Yellowstone, an area that includes 313 and 316. *Id.* The data also shows that the elk population in units in northern Yellowstone is "At" the population objectives set by Fish, Wildlife & Parks. On a larger scale, in all of Region 3, the elk population is "Over" the objectives. *Id.*

With respect to Factor D (the inadequacy of existing regulatory mechanisms), the Fish and Wildlife Commission's response to the significant increase in the number of wolves killed in two of the smallest wolf management units in Montana and their keeping of Yellowstone wolves from expanding their range and interbreeding with Montana wolves shows the inadequacy of Montana's current regulatory mechanisms.

In his December letter, Yellowstone National Park Superintendent Sholly asked Montana's Governor Gianforte to stop the hunting and trapping in WMUs 313 and 316, due to "the extraordinary number of Yellowstone wolves already killed this season, and the high probability of even more park wolves being killed in the near future…" Superintendent Sholly also asked Gianforte to consider reinstating the quotas that had limited the kill for the last decade.

Gianforte did not respond directly to either request. Instead, he wrote that the "Montana Fish and Wildlife Commission establishes hunting regulations in accordance with the laws of the State of Montana" and that the Fish and Wildlife Commission was monitoring the hunt and would respond according to Montana's new wolf hunting legislation.

On January 28, 2022, the Fish and Wildlife Commission met to consider whether to stop hunting and trapping in Region 3 which includes WMU 313 and WMU 316.[8] In a meeting recorded on Zoom, the commission chair ordered that the only issue that could be put to a vote that day would be whether to close Region 3. The question of whether to reinstate a quota in the two units could not even be discussed by the commissioners at that meeting. One commissioner provided evidence that Yellowstone wolves were being disproportionately impacted by the killing in 313 and 316. Another commissioner pointed out that Superintendent Sholly had written to the governor asking for hunting and trapping to be stopped immediately in the two units.

The commission chair limited public comment to one-half hour. During that half hour, seventeen public comments were made and 16 supported stopping hunting and trapping in Region 3 immediately. One person's testimony was not intelligible due to a bad connection. There was no contingent of hunters, trappers, or outfitters testifying for the need to keep hunting and trapping open in the Region 3. But regardless of evidence presented by the commissioners and the public,

[8] *See* https://fwp.mt.gov/about-fwp/news/commission-agendas/2022/january-28-meeting-agenda.

the commission voted to keep Region 3 open to hunting and trapping until six more wolves had been killed and the region threshold of 82 wolves was reached (the commission voted to close Region 3 on February 17, by which point hunters and trappers had killed 86 wolves). The commission's vote to keep the units open so that even more wolves could be killed shows the inadequacy of Montana's current regulatory mechanisms. This meets the criteria set under Factor D to emergency relist Montana wolves.

II. Regulatory Mechanisms in Wyoming Continue to Prove Inadequate

While the detrimental impacts to the wolf populations due to overutilization and inadequate state regulatory mechanisms in Idaho and Montana are currently being observed, these impacts have been reflected in Wyoming since the State of Wyoming was granted management authority in 2017. The FWS developed delisting criteria that required the state of Wyoming to maintain its gray wolf population at or above 100 wolves and a minimum of 10 breeding pairs (U.S. Fish and Wildlife Service. 2012.). The State of Wyoming has since implemented a wolf management plan that intentionally suppresses the Wyoming wolf population to minimum viable population ("MVP") numbers so the state has management authority.

In Wyoming, wolves are classified as predators in 85% of the state, and trophy game animals in the remaining 15% where trophy hunting is set annually by the Wyoming Game and Fish Department ("WGFD") (Wyoming Game and Fish Dept. et al. 2021). Where wolves are classified as predators, there are no restrictions on wolf killing, time of year or method of take W.S. § 23-1-101(a)(viii)(B). Since delisting, gray wolf populations in state management areas have rapidly declined from 400 individuals in 2017 to 183 individuals at the end of 2020. Breeding pairs have been reduced to 11, just one above MVP, two (2) out of four (4) years while under state management (Wyoming Game and Fish Dept. et al. 2019; 2021). Pack size continues to decrease in Wyoming, with 55% of wolf packs (18) documented at the end of 2020 having four (4) or fewer individuals (Wyoming Game and Fish Dept. et al. 2021). In addition to severe impacts on breeding activity in Wyoming, the Department has also documented extremely high rates of pack mortality. Several studies have indicated sustainable wolf populations can only remain intact if there are no alterations to normal pack dynamics and if mortality rates are less than 30% (Adams et al. 2008; Creel and Rotella 2010; Sparkman et al. 2011; Vucetich 2012). However, WGFD has reported average annual mortality rates of 39% (Wyoming Game and Fish Dept. et al. 2018; 2019; 2020; 2021), suggesting the long-term stability of this wolf population is in jeopardy. Wyoming Game and Fish Dept. et al. (2018; 2019; 2020; 2021) reports that in four years, 22 wolf packs have been exterminated and no longer exist due to human-caused mortality (hunting, control, predatory animal take), six (6) of these packs overlapped into the "Predatory Zone" where no regulatory mechanisms are in place for population management.

Furthermore, WGFD reported 10 wolf packs that reside along the borders of Montana and Idaho but primarily inhabit Wyoming. These packs count towards the minimum delisting criteria for Wyoming and seven (7) are under the jurisdiction of Yellowstone National Park. These wolf packs are susceptible to the newly instated regulations in Idaho and Montana, but mortalities will impact the wolf population in Wyoming, specifically Yellowstone National Park. With new regulation in place in Idaho and Montana, 25 Yellowstone wolves were killed during 2021-2022 (19, Montana; 4, Wyoming; 2, Idaho). With consistently negative trends for wolf population, breeding pairs, pack size, and high mortality rate, the State of Wyoming regulated wolf

populations cannot sustain dramatic regulatory changes made in neighboring states of Idaho and Montana, for which they rely on for genetic exchange and dispersing individuals, in addition to Wyoming wolves being exterminated in increased hunting and trapping pressure.

III. Wolf Management Plans in Idaho, Montana, and Wyoming Fail to Provide for Genetic Exchange, and Fail to Account for Unreported and Super-additive Mortality

Although the states of the NRM DPS claim they are simply reducing their wolf populations to FWS recovery levels and therefore such levels must be viable, the FWS-defined recovery levels were never truly viable. The FWS itself later characterized the 10-breeding pair/100 wolf recovery floor it set as "at best, a minimum recovery goal" and added genetic exchange between populations bolster its definition of recovery—a criterion that has never been met. 74 Fed. Reg. at 15,130.

This is exemplified by the recent killing of at least three members (two pups and a yearling) of the beloved Junction Butte gray wolf pack whose territory includes regions outside the protective boundaries of Yellowstone National Park. The land bordering the Park was previously protected, with supportive language included in the FWS 2009 delisting ruling that described how "connectivity across the [Northern Rocky Mountains, NRM] will remain a high priority issue for the Service," with an ongoing effort "to identify, maintain and improve wildlife movement areas between the large blocks of public land in the NRM." *Id.* at 15,176. Emergency listing of the gray wolf could prevent extinction and is in line with the original commitment of FWS to protect public land that supports gray wolf territories and dispersal corridors. To this end, these protective efforts also support the original declaration of the ESA about the value of genetic heritage, which is "quite literally, incalculable" (ESA 1973, p143).

In addition, the states have not taken into account all the unreported and super-additive mortality (e.g., disruption caused by loss of breeding adults, low pup survival, low pack numbers, etc.) that their policies are highly likely to create. The best available science published since 2010 in international, peer-reviewed journals shows that legal killing of wolves leads to an undetected increase in additional deaths of wolves in four independent studies of four wolf populations (NRM DPS gray wolves: Creel & Rotella 2010; Wisconsin and Michigan gray wolves: Chapron & Treves 2016, 2017; Santiago-Ávila et al. 2020 and in review 2022; Mexican gray wolves Louchouarn et al. 2021; and red wolves: Agan et al. 2021 and Santiago-Ávila et al. in review 2022). The additional deaths would cause population declines or slowdowns in growth of 6-20% (NRM gray wolves) or 5-9% (Wisconsin and Michigan gray wolves). Additional unreported deaths have been estimated from survival analyses of individual wolves. The unreported deaths were caused mainly by illegal killing with rates estimated at 50% or more of all radio-collared wolves in three populations (Santiago-Ávila et al. 2020; Louchouarn et al. 2021; Agan et al. 20221).

While the states will contend that their wolf populations are stable in the face of increased harvest pressure, they do not adequately support those assertions with sufficient evidence. In Idaho, for example, Idaho Fish and Game Director Ed Schriever recently presented to the Idaho Fish and Game Commission that both wolf mortality and the wolf population (measured at its spring peak) remain stable after six months of operation of S. 1211. Director Schriever reached

that conclusion based upon use of a population modeling method using camera traps that has never been peer-reviewed. In addition, IDFG has never presented documentation showing how it applied the method to the wolf population to the public to allow for review of its conclusions regarding the wolf population. And, even if the population estimate were accurate, stability in the face of six months' increased harvest pressure does not speak to the wolf population's ability to sustain that kind of pressure in the long-term. Montana's "patch occupancy" population model may be even less reliable than Idaho's camera trap method.

As is the case in Idaho, Montana has recently changed the methods that it uses to estimate population size. Rather than collecting direct data on the number of wolves present each year, they use a series of indirect models that convert data on the area occupied by wolves into an estimate of population size and suggest that this "eliminates the need for intensive field-based monitoring." The best available science shows that only monitoring the area occupied by a species is not a sensitive tool to monitor changes in population size (Tobler & Powell 2013).

Because state estimates of wolf population levels have wide bounds of uncertainty and by some estimates, population resilience and mortality rates are overly optimistic (Treves et al. 2017a; Vucetich 2012), it is impossible at present to determine when the NRM wolves will be eradicated but current levels of wolf-killing are certainly unsustainable. That conclusion is not pessimistic but precautionary given the liberal wolf-killing methods described above are being practiced during the wolf breeding season, which is a period of high increased vulnerability for breeding pairs of wolves (Treves et al. 2021). Most wolf packs have only one breeding pair and their deaths disrupt reproduction for a year or more. As a result, the level of legal killing condoned by the NRM DPS states may be sufficient to eradicate wolves across the DPS and certainly undermines the integrity of the metapopulation structure of the western DPS.

CONCLUSION

The FWS delisting rule for the gray wolf in the Northern Rockies states that meaningful changes in state law or management objectives that increase the threat to the wolf population can lead to both the reconsideration of listing and an emergency relisting at any point. (*See* 74 Fed. Reg. at 15148).

Changes in laws and regulations in Idaho and Montana constitute an immediate and clear threat to wolves across the region. Without the emergency listing the FWS promised in 2009 would respond to new laws like these, the core of the population of gray wolves in the Northern Rockies is at risk. Moreover, without emergency listing the Service will set harmful precedent by condoning states with management for delisted species to change their regulations to allow and encourage take of recovered species to the point that puts them back on the brink of extinction. Emergency listing for NRM wolves or the western DPS would allow the FWS to continue its own evaluation and review of the population that is already underway. The data upon which the 2009 delisting ruling was based is antiquated and highly inappropriate to justify any current decision to delist without a re-evaluation. Emergency listing would allow scientists to collect updated, meaningful information with respect to connectivity and genetic health of each regional gray wolf population. Such information is immensely critical to ensure their long-term viability and prevent their extermination.

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