

# The Humane Society of the United States

Comments from the Humane Society of the United States are attached. Thank you for your consideration.

Dan



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Dear Ms. Wood,

On behalf of the Humane Society of the United States, and our members and supporters in Washington, we appreciate the opportunity to provide input on the scope of a post-recovery plan for wolves in Washington. While we strongly believe that delisting is unwarranted and premature because the best available science demonstrates gray wolves have not recovered, we also stress that if delisting does occur that a post-recovery plan must reflect the values of Washingtonians by ensuring that (1) under no circumstances should members of the public be allowed to trophy hunt and/or trap wolves, (2) the threat of climate change to wolf populations is thoroughly considered, and (3) killing is nothing more than a last resort in addressing rare conflicts with livestock.

Washington's unique Wolf Advisory Group (WAG) is an intriguing model as to what progressive wolf management and conflict collaboration can look like on the state level. Unfortunately, we have also seen the high death tolls and continuing conflicts that occur in states where trophy hunting and trapping is liberalized and non-lethal solutions to conflicts are not prioritized. If Washington moves forward with developing a post-recovery plan, we urge the state to take this opportunity to continue being a leader and raising the bar on state-level wolf management.

**I. The creation of a post-recovery plan is premature.**

The current population of wolves in Washington is small and fragile. In 2018, the minimum population of wolves in Washington was just 126.<sup>i</sup> Ongoing protections are necessary due to the combination of this small population's precarious conservation status and its significance to the taxon as a whole - indeed, the best available science concludes that West Coast wolves "have a dominant [Pacific] coastal ancestry [and] should be a priority for conservation given their unique evolutionary heritage and adaptations".<sup>ii</sup>

The Pacific Northwest, including Washington, contains extensive habitat for wolves.<sup>iii</sup> Carroll et al. (2006) identified habitat in the region that could support an estimated wolf population of more than 600 wolves.<sup>iv</sup> Habitat capable of supporting viable wolf populations was found on the Olympic Peninsula, Oregon Cascades, northern California, and the Sierra Nevada, with the Oregon Cascades providing the largest and most viable core habitat. Olympic National Park has been identified as a large area with suitable wolf habitat and a candidate for wolf reintroduction.<sup>v</sup> The southern Washington Cascades was not identified by Carroll et al. (2006) as having viable wolf populations based on current habitat conditions, but a follow-up analysis by Carroll (2007) that also considered habitat in Canada found that the southern Washington Cascades could support a viable population with immigration across the border.<sup>vi</sup> The Center for Biological Diversity digitized maps from Carroll et al. (2006) and Carroll (2007) and determined that wolf habitat comprises approximately 280,000 square kilometers (nearly 70 million acres) in Oregon, Washington, California and Nevada. In Oregon, state agency scientists identified suitable habitat totaling 106,853 km<sup>2</sup> - wolves currently occupy just 12 percent of this area (Oregon Dept. Fish and Wildlife 2015). California Department of Fish and Wildlife identified 60,088 square kilometers (23,200 square miles) in northern California (north of I-80).<sup>vii</sup>



## II. Under no circumstances should members of the public be allowed to trophy hunt and/or trap wolves.

The Humane Society of the United States is strongly opposed to any provision that would open the door to trophy hunting and trapping of wolves in Washington by members of the public. As explained below, studies demonstrate that hunting and trapping may have an additive or even super-additive effect on wolf mortality through the additional loss of dependent offspring or by disrupting pack structure.<sup>viii</sup> This can result in a change in pack size<sup>ix</sup> and/or reproductive and breeding strategies, reduce individual fitness, and increase the risk for population extinction.<sup>x</sup>

### A. Most Washingtonians want their wolves protected and are opposed to the recreational trophy hunting and trapping of them.

Numerous polls and surveys have demonstrated that most Washingtonians want their wolves protected and do not support the recreational trophy hunting and trapping of them. For example, a 2013 poll showed that 72 percent of respondents from Washington supported continued protections for wolves.<sup>xi</sup> This result was echoed in a 2014 survey conducted by Responsive Management for WDFW that showed that “there is much more support for (70%) than opposition to (15%) maintaining sustainable populations of predators in Washington.”<sup>xii</sup> That same survey also found that there is “much more support for (64%) than opposition to (27%) the recovery of wolves in Washington,” and that the majority of Washingtonians continue to support wolf recovery even if it results in some localized declines in elk and deer populations. Furthermore, a majority of those surveyed opposed recreational wolf hunting.<sup>xiii</sup>

According to a recent report sponsored by the Association of Fish and Wildlife Agencies, just 29 percent of respondents agreed that wolves that kill livestock should be killed, while 57 percent disagreed with that sentiment.<sup>xiv</sup>

These sentiments are echoed across the country. Many studies and polls show that a super majority of Americans want wolves conserved, protected, and humanely treated.<sup>xv</sup> Most Americans don’t even support killing wolves to protect livestock, according to a new national study.<sup>xvi</sup> That is because a plethora of non-lethal alternatives exist that are efficacious, humane and more cost effective.<sup>xvii</sup>

### B. Unacknowledged consequences of trophy hunting and predator control: Additive and super-additive mortality effects

Lethally removing a single wolf from a population of 126 is not like withdrawing one dollar from a \$126 checking account balance. Wolves are not fungible goods; due to their social structure and life history, taking a single wolf causes a cascade of effects resulting in death and disruption beyond that individual. The best available science describes this as “additive” and “super-additive” mortality.<sup>xviii</sup> Killing single adult wolves can result in the loss of *entire packs*, by causing the loss of dependent offspring and disrupting packs’ social structure.<sup>xix</sup>

Studies show that trophy hunting wolves causes additive-mortality effects especially strongly, since wolves’ complex pack structure makes them particularly susceptible to social disruption.<sup>xx</sup> The human-caused death of individuals harms wolves’ family group cohesion.<sup>xxi</sup> Wolf populations exposed to heavy hunting experience increased stress and reproductive hormone imbalance.<sup>xxii</sup> The human-caused loss of breeding females has been shown to cause complete dissolution of social groups and abandonment of territory.<sup>xxiii</sup>

Trophy hunting also causes artificial selection pressure on the hunted population, disrupting life histories and reproductive strategies and otherwise adversely altering a population’s genetic fitness.<sup>xxiv</sup> Trophy hunters choose prime-age, trophy-size individuals, which influences species’ evolution: studies show that trophy hunting forces rapid evolutionary shifts in both the behavior and body size of mammalian populations,<sup>xxv</sup> and this response may change a species’ ability to adapt, particularly when added to the burdens of habitat loss and climate change.<sup>xxvi</sup>

Numerous studies have detailed the realized and potential effects of legal trophy hunting and predator control on genetics of wildlife populations.<sup>xxvii</sup> Population genetics, particularly genetic diversity and genetic effective population size, play a critical role in both short-term and long-term population viability.<sup>xxviii</sup> As a result, the genetic changes caused by trophy



hunting and predator control can have harmful consequences that ultimately elevate extinction risks and impede recovery.<sup>xxxix</sup> These changes include reduced gene flow and elevated structuring among populations, loss of genetic diversity and reduced fitness, and overrepresentation of heritable and sometimes maladaptive phenotypes due to exploitative selection.<sup>xxx</sup>

Indeed, the genetic consequences of sport hunting and trapping were documented in Minnesota wolves just one year after a trophy-hunting season was implemented in 2012.<sup>xxxi</sup> The observed effects included a significant increase in structuring and differentiation among subpopulations, decreased dispersal and gene flow among subpopulations, and elevated mortality of dispersing wolves.<sup>xxxii</sup> These results are corroborated by similar findings in a lightly to moderately persecuted wolf population in Alaska.<sup>xxxiii,xxxiv</sup> The kill rate in Minnesota was approximately 24% during the study period, thus, it is clear that even low to moderate rates of legal wolf killing are not genetically neutral and do invoke deleterious population-wide genetic and demographic changes that can dramatically reduce population viability, elevate extinction risk, and require multiple generations for wolf populations to recover from.<sup>xxxv</sup>

If WDFW is to move forward with a post-recovery plan, such a plan must reflect the values of Washingtonians and account for this additive and super-additive human-caused mortality by ensuring that trophy hunting and trapping is off the table.

### **III. A post-recovery plan must adequately address the threat posed to wolves by climate change.**

Any post-recovery plan must adequately address the present and foreseeable threat posed to gray wolves by climate change. Climate change is already driving a global extinction crisis; state and federal protections for wolves must be maintained as a warming climate accelerates habitat loss and fragmentation, diminishes prey availability, and exposes wolves to novel and deadly parasites and diseases.

#### **A. Climate change is driving a worldwide extinction crisis that has put large-bodied carnivores at particular risk**

The loss of Earth's megafauna has so concerned preeminent biologists that dozens of them convened, and starting in 2011, produced the seminal and alarming paper, *Trophic Downgrading of Planet Earth*.<sup>xxxvi</sup> In it, James Estes et al. (2011), warn that the loss of top carnivores and other megafauna will increase pandemics, make ecosystems dysfunctional and accelerate the effects of climate change.<sup>xxxvii</sup>

In the U.S., large-bodied carnivores like wolves and grizzly bears are at particular risk during this unprecedented extinction crisis.<sup>xxxviii</sup> In 2014, another assemblage of international biologists, Ripple et al. (2014), again voiced urgency about this loss of top carnivores and the implications for the planet.<sup>xxxix</sup> They (2014), write:

The largest terrestrial species in the order Carnivora are wide-ranging and rare because of their positions at the top of food webs. They are some of the world's most admired mammals and, ironically, some of the most imperiled. Most have experienced substantial population declines and range contractions throughout the world during the past two centuries. Because of the high metabolic demands that come with endothermy and large body size, these carnivores often require large prey and expansive habitats. These food requirements and wide-ranging behavior often bring them into conflict with humans and livestock. This, in addition to human intolerance, renders them vulnerable to extinction. Large carnivores face enormous threats that have caused massive declines in their populations and geographic ranges, including habitat loss and degradation, persecution, utilization, and depletion of prey. We highlight how these threats can affect the conservation status and ecological roles. . . Additionally, the future of increasing human resource demands and changing climate will affect biodiversity and ecosystem resiliency. These facts, combined with the importance of resilient ecosystems, indicate that large carnivores and their habitats should be maintained and restored wherever possible.<sup>xl</sup>

Ripple et al. (2017) warned that "without intervention, anthropogenic activities will soon precipitate a double truncation of the size distribution of the world's vertebrates, fundamentally reordering the structure of life on our planet,"<sup>xxli</sup> arguing that large-bodied carnivores "are perhaps the species most in need of protections so that communities can be buffered against



climate change” because they “affect other ecosystem processes, such as biogeochemical cycles, disease, carbon storage, wildfire. . .”<sup>xliii</sup>

A Paris conference of the Science-Policy Platform on Biodiversity and Ecosystem Services issued a May 2019 press release from 145 participants from 50 countries who had assessed changes on Planet Earth for the past five decades. They found that one million species now face extinction, and that the extinction rate has reached a 10 million year-peak and is still accelerating. Even under the likely impossibly optimistic scenario in which global warming is contained to 1.5 to 2 degrees Celsius, the majority of terrestrial species ranges are projected to shrink profoundly.<sup>xliiii</sup>

## **B. The climate crisis threatens the survival of wolves.**

The best available science shows that climate change poses myriad threats to wolves, their prey and habitats—all of which are dire.<sup>xliv</sup>

**Prey availability.** Effects on prey availability will likely be the most immediate and direct threat to wolves. The best available science illustrates several mechanisms connecting climate change to wolf prey availability. First, changes in vegetation could harm wolves by causing shifts in the herbivore community.<sup>xlv</sup> The effect of the climate crisis on plants will be a complex mixture of direct effects and changes in disturbance, insect herbivory, and mammalian herbivory and opportunities for exotic invaders. These, in turn will lead to differences in mammalian herbivore communities from deer mice to moose, which will both affect and be affected by shifts in the carnivore community. Among the species McKelvey and Buotte (2018) (U.S. Forest Service biologists) suggest are most sensitive to climate change in the Northern Rocky Mountains are wolves’ prey animals, including American beavers and all ungulates (moose, elk, mule deer, white-tailed deer).<sup>xlvi</sup>

In some climes, these events have already occurred, presaging more to follow. Wolves, dependent on wild prey to avoid starvation, are indirectly harmed when plant communities are lost because of drastic changes in temperature. Stochastic weather events such as a midsummer snowfall covering plants and killing them caused numerous herbivores to starve and die.<sup>xlvii</sup> With no herbivores, wolf numbers dropped drastically, preventing wolves from raising pups as Mech (2004) recorded in the Arctic.<sup>xlviii</sup> For wolves and other carnivores, the climate crisis could degrade cached food supplies. Their food is highly perishable under warm conditions.<sup>xlix</sup>

**Dispersal.** In the face of climate change, species’ persistence will require individuals to be able to disperse to different suitable habitats for their survival. Dispersal requires individuals maintain their diverse genetic profiles across connected landscapes.<sup>l</sup> As the climate warms, species will move more northward, southward or up or down in latitude, but if species are unable to shift, extirpation or extinction follows.<sup>li</sup> Williams and Blois (2018) predict that wolves and other large-bodied carnivores will have large range shifts.<sup>lii</sup> While species shift their range, their survival is dependent on “phenotypic plasticity, genetic diversity and dispersal ability.”<sup>liiii</sup> Climate change-driven “increased periods of drought, thermal stress and extreme climatic events” will create a series of new pressures on biodiversity.<sup>liv</sup> Boonstra et al. (2018) report that one of the biggest factors involving climate change in northern latitudes will be snow depth and hardness because of rain-on-snow events, affecting wolves and other animals’ abilities to travel.<sup>lv</sup>

**Parasites and disease.** Warmer winters and extended fall and spring seasons will drive the expansion of ticks and tick-borne diseases to more northern latitudes and higher altitudes.<sup>lvi</sup> Increases in temperature facilitate the proliferation of parasitic organisms.<sup>lvii</sup> Climate warming will change trophic effects that include the profusion of parasites and disease.<sup>lviii</sup> For instance, Lyme disease has tracked to northern climes including into Canada as a result of climate change.<sup>lix</sup> Emerging infectious disease outbreaks may occur with more frequency and across greater landscapes. Most parasites are highly specialized to use one type of host species within restricted ranges. Authors predict a greater degree of host shifts to novel and naïve prey with climate change and range expansions for emerging infectious diseases.

Parasites are able to rapidly evolve under climate change scenarios because of both their large population sizes and short generation times.<sup>lx</sup> Cable et al. (2017) note “the potential for parasites to out-evolve their hosts suggests that increasing, rather than decreasing, parasite risks and burdens will be the norm under global change.”<sup>lxi</sup>

## **IV. Killing wolves to address conflicts must be nothing more than a last resort.**



On September 30, Governor Jay Inslee sent a letter to Kelly Susewind, Director of the WDFW, asking for changes to the gray wolf recovery program that reduce killing wolves in response to conflicts with livestock and prioritize non-lethal solutions. In his letter, he stated, “We must find new methods to better support co-existence between Washington’s livestock industry and gray wolves in our state. The status quo of annual lethal removal is simply unacceptable.”<sup>lxii</sup>

Governor Inslee is correct that we need to find creative solutions to a highly contentious and complex issue. Most of the estimated 126 wolves in Washington live in the northeastern corner of the state, a region that is also home to several federal grazing allotments. In this area of difficult terrain and high overlap between wolves and livestock there has been a deadly pattern of depredations and killing wolves that has increased public tension.

**A. Both the need for lethal predator control and its effectiveness at addressing depredations are overstated.**

According to the most recent report from WDFW, in 2018 WDFW investigators confirmed just 11 cattle and one sheep as being killed by wolves, in addition to 19 cattle and two sheep that were confirmed to have been injured by wolves, and one injured cow and one mortality of a calf that were considered probable depredations.<sup>lxiii</sup> Yet, according to the most recent (2018) data from the U.S. Department of Agriculture, National Agricultural Statistics Services, Washington is home to approximately 1.18 million cattle and calves and 50,000 sheep and lambs.<sup>lxiv</sup> Taking both confirmed and probable depredations into account, wolves injured or killed just 0.003 percent of Washington’s cattle/calf inventory and just 0.006 percent of the sheep inventory.

While biologists have argued whether hunting wolves reduces livestock losses (see: e.g., Wielgus and Peebles (2014) and Bradley et al. (2015)), subsequent studies found that killing wolves does not improve livestock safety. Wildlife biologists reviewing a 17-year data set that involved Michigan wolves and livestock losses discovered that the lethal removal of wolves for livestock protection reasons on one farm, increased future wolf predation on their neighbors’ livestock.<sup>lxv</sup> Killing wolves on one farm increased future predation risks by nine and 14% per year at local scales.<sup>lxvi</sup> Studies show that government and individuals’ random killing of wolves (predator control) does little to protect livestock.<sup>lxvii</sup> A Montana study also indicates that the trophy hunting and lethal control of wolves does little-to-nothing to protect livestock.<sup>lxviii</sup> Most predator control kills wolves randomly, is ineffective in preventing livestock losses but is overly lethal to wolves.<sup>lxix</sup>

Given this context, there is little justification for liberalizing lethal removal by introducing trophy hunting and trapping seasons. Scattershot predator control will result in a number of human-caused mortalities far out of proportion to the modest effect that wolves have on livestock and is unlikely to meaningfully ameliorate the underlying problem. Because wolf killing does not effectively stop livestock losses, predator control threatens to become an unlimited source of mortality.

**B. Retire grazing allotments that have had chronic depredation.**

A creative, non-lethal alternative to the perpetual and highly controversial cycle of depredations and killing wolves that has emerged in the northeastern corner of Washington is for WDFW to work with federal agencies to suspend or retire grazing allotments that have been the site of repeated depredations, where other non-lethal deterrent methods have been inadequate at preventing conflicts. In addition to retiring those current grazing allotments, going forward Washington could continue to prevent repeated depredations by establishing buffers around known active denning and rendezvous sites where grazing and the use of attractants (such as salt and mineral blocks) is prohibited.

**V. Conclusion**

If WDFW moves forward with developing a post-recovery plan for state wolf management, the Humane Society of the United States urges the agency to ensure that such a plan is reflective of Washingtonian values and rooted in the best available science. To that end, a plan must address the threat of the current climate and biodiversity crisis, ensure that recreational trophy hunting and trapping is prohibited, and only use lethal removal as a last resort in cases of chronic depredation. By meeting these criteria, Washington can continue to be a leader in creative collaboration and good wolf stewardship.



**THE HUMANE SOCIETY  
OF THE UNITED STATES**

Sincerely,

Dan Paul  
Senior State Director, Washington

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- <sup>i</sup> Washington Department of Fish and Wildlife, Confederated Colville Tribes, Spokane Tribe of Indians, USDA-APHIS Wildlife Services, and U.S. Fish and Wildlife Service. 2019. Washington Gray Wolf Conservation and Management 2018 Annual Report. Washington Department of Fish and Wildlife, Ellensburg, WA, USA.
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