

NOTICE OF PETITION AND PETITION FOR RULEMAKING
PURSUANT TO THE ADMINISTRATIVE PROCEDURE ACT,
5 U.S.C. § 553(e)

TO THE U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE

PETITION REQUESTING A NATIONAL FRAMEWORK FOR
MANAGEMENT OF CONFLICTS BETWEEN LIVESTOCK AND NATIVE
CARNIVORES ON NATIONAL FOREST SYSTEM LANDS

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October 7, 2022

Submitted via certified mail and email

Re: Petition for rulemaking to create a national framework for management of conflicts between livestock and native carnivores on National Forest System lands

Dear Secretary Vilsack and Chief Moore,

Pursuant to the Administrative Procedure Act, 5 U.S.C. § 553(e), 7 C.F.R. § 1.28, and the petition clause of the First Amendment of the Constitution, we hereby respectfully petition¹ the U.S. Department of Agriculture (USDA), by and through the U.S. Forest Service (Forest Service), for the issuance of a rule² and policy guidance to modify the Forest Service’s public land³ grazing regulations and policies to require that the conflict avoidance measures included in this petition be incorporated into forest plans during the forest plan development, revision, and/or amendment processes, into Allotment Management Plans, and into grazing permits and leases as they are renewed or reauthorized.

¹ In accordance with 5 U.S.C. § 553(e), “[e]ach agency shall give an interested person the right to petition for the issuance, amendment, or repeal of a rule.”

² 5 U.S.C. § 551(4) (“Rule” is defined as “the whole or part of an agency statement of general or particular applicability and future effect designed to implement, interpret, or prescribe law or policy.”).

³ WildEarth Guardians recognizes that “public lands” managed today by the U.S. Forest Service are lands stewarded by and home to Indigenous peoples since time immemorial.

Petitioners value native carnivores⁴ and work to protect native carnivores from Forest Service-authorized activities including livestock grazing and we thus qualify as “interested person[s]” under the APA.⁵ For the reasons set forth in this Petition and as a matter of law, we ask that the USDA and Forest Service promptly respond to this Petition.

Petitioners appreciate the Biden-Harris Administration’s commitment to protecting our climate, biodiversity, lands, and waters through evidence-based policy making and a coordinated government-wide approach. This includes the Administration’s America the Beautiful initiative and 30x30 campaign, as well as the Executive Orders on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis (Executive Order 13990) and Tackling the Climate Crisis at Home and Abroad (Executive Order 14008).

Instituting a national framework that ensures coexistence between native carnivore species and livestock is essential if the USDA and U.S. Forest Service (USFS) are to fully contribute to the Administration’s 30x30 pledge. The report introducing the America the Beautiful initiative recognized that achieving the 30x30 ambition will require executive departments, including the USDA, to safeguard the wildlife upon which we all depend.⁶

Therefore, this petition requests that the Forest Service implement a national proactive grazing management framework that mitigates conflicts between native carnivores and commercial livestock on National Forest System (NFS) lands. Because such conflicts—i.e., actual or suspected livestock depredations largely attributed to apex and mesopredators like wolves, bears, cougar, and coyotes—have been the primary driver of government-sponsored wildlife killing efforts, we respectfully urge the Department to adopt grazing management regulations that incorporate science-backed measures proven to reduce the risk of such conflicts on federal grazing allotments. Such regulations are necessary to foster an ethic of coexistence on federally managed public lands and to better conserve and connect ecologically valuable wildlife habitat. Additionally, fostering coexistence will help the Forest Service achieve the duty assigned to federal agencies in the America the Beautiful campaign to stem the decline of wildlife populations and their habitats.

This petition demonstrates that the Forest Service has the legal authority and responsibility to adopt a coexistence management framework that establishes a suite of conflict avoidance measures for NFS lands where wildlife-livestock conflicts are a present or potential concern.

⁴ We use the term “carnivore(s)” throughout this petition to refer to predatory species that experience conflicts with livestock on lands managed by the Forest Service.

⁵ Pursuant to 7 C.F.R. § 1.28, “interested persons” may file a petition under 5 U.S.C. § 553(e) “for the issuance, amendment or repeal of a rule . . . with the official that issued or is authorized to issue the rule,” and that “all such petitions shall be given prompt consideration and petitioners will be notified promptly of the disposition of their petitions.”

⁶ Conserving and Restoring America the Beautiful (2021), available at <https://www.doi.gov/sites/doi.gov/files/report-conserving-and-restoring-america-the-beautiful-2021.pdf>.

Mitigating such conflicts—using science as a guide—falls squarely within the Forest Service’s jurisdiction to manage its lands as well as the wildlife inhabiting those lands.

This petition is supported by the best available science. Large carnivores like wolves, grizzly bears, and mountain lions are critical determinants of biological diversity and ecological integrity. Taking action to minimize the killing of these essential species on NFS lands helps ensure that public lands realize their potential as reservoirs of biodiversity. A large and growing body of scientific research shows that certain nonlethal measures and animal husbandry techniques are effective tools for avoiding or reducing conflicts between carnivores and livestock. Conversely, scientific research has not shown that lethal measures effectively resolve carnivore-livestock conflicts—in fact, lethal control may increase conflicts.

The need for uniform direction on the part of Forest Service to address this growing problem is clear. By utilizing its legal authority and applying the best available scientific information, the Forest Service can play a pivotal and proactive role in fostering a livestock grazing system that is compatible with native carnivore conservation. We strongly urge the Forest Service to take advantage of this opportunity.

Sincerely,

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Introduction

Expanding populations of wolves, grizzly bears and other native carnivores increasingly utilize and rely on America's public lands for their survival. The Administration's America the Beautiful commitment recognizes the significant work and investments of past generations to conserve wildlife, the result of which is the expansion of important species like wolves and grizzly bears on Forest Service lands. For perspective, little more than two decades ago wolves and grizzlies were relegated to a handful of national forests in three western states. These species existed almost entirely in the shadow of Yellowstone National Park and, relatedly, the leadership of both the National Park Service and the U.S. Fish and Wildlife Service. Today wolves exist in nine western states and on approximately 30 national forests covering millions of acres. Grizzlies, though less widespread, are likewise expanding their range.

Yet nearly 40% of NFS lands in the lower 48 states are available for livestock grazing. These multi-use, public lands are a nexus for interactions—and potential conflicts—between the millions of livestock that graze on them and expanding native carnivore populations that rely on them for habitat. The Forest Service's management of domestic livestock grazing on NFS lands is negatively impacting native carnivores, and thus the biodiversity and resilience of ecosystems where domestic livestock and carnivores share space; and the problem is growing as native carnivore numbers increase and they recolonize their historic ranges. The presence of domestic livestock on Forest Service lands is a recipe for conflict, especially because Forest Service land managers are reluctant to assert the agency's legal authority to manage federally permitted grazing to protect these wildlife populations by ensuring meaningful coexistence between livestock and native carnivores.

Because of the population growth of some carnivore species and their expansion into historic habitat, as well as the importance of NFS lands to wildlife and biodiversity, the Forest Service's leadership is more critical now than ever. Rather than creating and condoning the situations that engender conflicts—with the predictable and largely inevitable result of the killing of native carnivores—the Forest Service should make its livestock grazing program compatible with its duty to manage for and conserve native carnivores on NFS lands.

Without Forest Service leadership, however, conflicts will continue. The Forest Service should lead in developing solutions because the Forest Service authorizes the livestock grazing that creates a significant source of these conflicts. The Forest Service has the legal authority and responsibility to modify its livestock grazing program to minimize or prevent conflicts. By using its authority and applying existing science, the Forest Service can play a pivotal and proactive role in fostering coexistence between livestock and native carnivores.

Through this petition, we ask the Forest Service to fulfill its legal duty to protect the iconic and wildly popular native carnivores that are held in trust for all American people. Our petition asks the Forest Service to adopt and implement grazing management practices reduce the likelihood of conflicts with carnivores and the predation that may result. Forest Service leadership in this

regard will promote wildlife conservation on NFS lands and help the Administration achieve 30x30 goals.

Background

Importance of Public Lands to Wildlife and Biodiversity

Federal public lands provide crucial refuges for fish and wildlife and are significant reservoirs of biodiversity.⁷ Forest Service lands are arguably more important for fish and wildlife populations than public lands managed by other federal land management agencies.⁸ The importance of public lands for wildlife conservation will only increase as more private land is developed.⁹

The 193 million acres of land that the Forest Service manages provides some of the most essential fish and wildlife habitat in the country. Forest Service lands contain the vast majority of this country's remaining old-growth forests, millions of acres of waterfowl and migratory bird habitat, and some of the highest quality habitat for rare plants, reptiles, amphibians, and iconic species like grizzly bear and Canada lynx. Forest Service lands host more than 430 federally listed threatened and endangered species and an additional 3,500 rare and sensitive species. More than 12 million acres of land and 22,000 river miles serve as federally designated critical habitat for federally-listed species.

These wildlife habitats provide the foundation for much of our nation's biodiversity. Biodiversity is critical for maintaining stable ecosystems and facilitating recovery from disturbances such as wildfires and human activities, but it is disappearing at unprecedented rates. With current rates of development, the Forest Service and others forecast that biodiversity will continue to decline.¹⁰

Yet nearly 40% of Forest Service land in the lower 48 states—over 74 million acres—is available for livestock grazing.¹¹ These multi-use public lands are a nexus for interactions and potential conflicts between the millions of livestock that graze on them and expanding native carnivore populations that rely on them for habitat. As one federal court recently noted, for example, wolves in the western United States reside largely on federal public lands.¹²

⁷ Stein, B.A., Scott, C., Benton, N. 2008. Federal lands and endangered species: The role of military and other federal lands in sustaining biodiversity. *BioScience*. 58(4):339–47, available at <https://doi.org/10.1641/B580409>.

⁸ *Id.* at 345.

⁹ *Id.* at 346.

¹⁰ U.S. Department of Agriculture, Forest Service. 2012. Future of America's forest and rangelands: Forest service 2010 resources planning act assessment. Gen. Tech. Rep. WO-87. Washington, D.C., at 4, 11 (projecting that the “[t]otal urban and developed land area [will] increase between 39 and 69 million acres between 2010 and 2060, an increase of 41 to 77 percent,” and concluding that “biodiversity in the United States will continue to erode”).

¹¹ U.S. Department of Agriculture. FY 2020 Grazing statistical summary, available at <https://www.fs.usda.gov/rangeland-management/documents/grazing-stats/2020s/GrazingStatisticalSummaryFY2020.pdf>.

¹² *Defenders of Wildlife v. U.S. Fish and Wildlife Serv.*, Nos. 21-cv-00344-JSW, 21-cv-00349-JSW, 21-cv-00561-JSW, 2022 WL 499838, at *14 (N.D. Cal. Feb. 10, 2022).

It follows, then, that the way the Forest Service manages its lands, the wildlife that inhabit its lands, and the human uses it authorizes play an enormous role in whether NFS lands achieve their potential in ensuring the survival of America's wildlife.¹³ Facing increasing pressures and persecution, native carnivores need public lands more than ever. The Forest Service can and should take action, as outlined in this petition, to facilitate science-based coexistence between native carnivores and livestock grazing.

Importance of Carnivores to Ecosystem Health

Healthy ecosystems and the well-being of large carnivores go hand in hand. Top-of-the-food-chain predators like wolves, mountain lions, and grizzly bears play an essential role in maintaining the natural balance of ecosystems, and a large and growing body of research confirms the positive influences that carnivores have on their surrounding habitat.

By controlling the distribution and abundance of their prey, large carnivores impact other carnivores and other animal and plant species farther down the food chain, an effect known as “trophic cascades.” One of the clearest examples of trophic cascades occurs when carnivores prey on ungulates (*e.g.*, elk or deer). Predation reduces ungulate numbers and influences their movement and distribution, in turn decreasing the impacts that ungulate browsing has on trees, bushes, and grasses. This natural predator-prey dynamic improves habitat conditions, benefitting many other species. For example, scientists have found that wolves in Yellowstone and Grand Teton national parks benefit species including aspen and other streamside vegetation, songbirds, beavers, bison, fish, pronghorn, foxes, and grizzly bears.¹⁴

Top carnivores also influence other carnivores, with corresponding positive effects on other species. As the dominant of the two species, wolves tend to regulate the number and distribution of coyotes. With coyote populations naturally in check, animals lower on the coyote's food chain, such as pronghorn antelope, have been shown to have higher survival rates.¹⁵ Top carnivores thus support prey species at lower levels and contribute to the healthy functioning of habitats.

¹³ Stein, Scott, and Benton, *supra* note 7, at 346 (“While the nation's biological heritage cannot be maintained on federal lands alone, how these public trust lands are managed will be a major determinant of our success at sustaining America's rich diversity of wildlife.”).

¹⁴ Beschta, R.L., Ripple, W.J. 2019. Can large carnivores change streams via a trophic cascade? *Ecohydrology*. 12(1):e2048, available at <https://doi.org/10.1002/eco.2048>; Ripple, W.J., Beschta, R.L. 2012. Trophic cascades in Yellowstone: The first 15 years after wolf reintroduction. *Biological Conservation*. 145(1):205–13, available at <https://doi.org/10.1016/j.biocon.2011.11.005>.

¹⁵ Berger, K.M., Gese, E.M., Berger, J. 2008. Indirect effects and traditional trophic cascades: A test involving wolves, coyotes, and pronghorn. *Ecology*. 89(3):818–28, available at <https://doi.org/10.1890/07-0193.1>; Berger, K.M., Conner, M.M. 2008. Recolonizing wolves and mesopredator suppression of coyotes: Impacts on pronghorn population dynamics. *Ecological Applications*. 18(3):599–612, available at <https://doi.org/10.1890/07-0308.1>.

By increasing the availability of carrion from predation, wolves also increase food sources for raptors and other scavengers, including grizzly bears, which scavenge carrion left by wolves.¹⁶ Likewise, wolf predation on elk can reduce elk browsing of berry-producing shrubs, giving grizzlies access to more fruit.¹⁷

Another example of trophic cascades involves coyotes and sage-grouse. Research suggests that coyotes may indirectly benefit sage-grouse (and possibly other grouse species) in three ways, by: 1) reducing the number of mammalian nest predators that eat sage-grouse eggs and young; 2) limiting the number of jackrabbits and thereby the number of Golden Eagles that prey on sage-grouse; and 3) reducing the number of competitors that eat plants consumed by sage-grouse.¹⁸

Given carnivores' significant role in ecosystem function and balance and the interdependent nature of the food chain, lethally removing carnivores can cause cascading negative effects and changes throughout all ecosystem trophic levels, such as reducing biological diversity, simplifying ecosystem structure and function, and interfering with ecological processes. Research examining the effect of reduced mountain lion populations showed decreased black oak recruitment in Yosemite National Park¹⁹ and a reduction in the number of cottonwood trees in Zion National Park.²⁰ Changes documented in Zion National Park included greater stream erosion and a decrease in several terrestrial and aquatic species including wildflowers, butterflies, reptiles, and amphibians. Similarly, in areas where wolves are absent, unchecked ungulate populations and overgrazing decrease the abundance of native plant species, leading to degraded forests and riparian habitat.²¹

¹⁶ Wilmers, C.C., Crabtree, R.L., Smith, D.W., Murphy, K.M., Getz, W.M. 2003. Trophic facilitation by introduced top predators: Grey wolf subsidies to scavengers in Yellowstone National Park. *Journal of Animal Ecology*. 72(6):909–16, available at <https://doi.org/10.1046/j.1365-2656.2003.00766.x>.

¹⁷ Ripple, W.J., Beschta, R.L., Fortin, J.K., Robbins, C.T. 2014. Trophic cascades from wolves to grizzly bears in Yellowstone. *Journal of Animal Ecology*. 83(1):223–33, available at <https://doi.org/10.1111/1365-2656.12123>.

¹⁸ Mezquida, E.T., Slater, S.J., Benkman, C.W. 2006. Sage-grouse and indirect interactions: Potential implications of coyote control on sage-grouse populations. *The Condor*. 108(4):747–59, available at <https://doi.org/10.1093/condor/108.4.747>.

¹⁹ Ripple, W.J., Beschta, R.L. 2008. Trophic cascades involving cougar, mule deer, and black oaks in Yosemite National Park. *Biological Conservation*. 141(5):1249–56, available at <https://doi.org/10.1016/j.biocon.2008.02.028>.

²⁰ Ripple, W.J., Beschta, R.L. 2006. Linking a cougar decline, trophic cascade, and catastrophic regime shift in Zion National Park. *Biological Conservation*. 133(4):397–408, available at <https://doi.org/10.1016/j.biocon.2006.07.002>.

²¹ Ripple, W.J., Larsen, E.J. 2000. Historic aspen recruitment, elk and wolves in northern Yellowstone National Park, USA. *Biological Conservation*. 95(3):361–70, available at [https://doi.org/10.1016/S0006-3207\(00\)00014-8](https://doi.org/10.1016/S0006-3207(00)00014-8); Beschta, R.L. 2003. Cottonwoods, elk and wolves in the Lamar Valley of Yellowstone National Park. *Ecological Applications*. 13(5):1295–1309, available at <https://doi.org/10.1890/02-5175>.

Carnivore Corridors and Habitat Connectivity

Wildlife survival is contingent upon restoring and protecting wildlife corridors and habitat connectivity. A wildlife corridor is the route by which an animal moves to complete the various stages of its life cycle.²² In order to survive, an animal must be able to safely move throughout its environment to find food, reproduce, disperse, and find shelter.²³ The Administration recognized the importance of wildlife corridors and habitat connectivity in its America the Beautiful initiative, designating one of its focus areas as building corridors and connectivity.

Livestock grazing fragments carnivore habitat, particularly when permitted without the coexistence measures recommended in this petition. Therefore, protecting carnivores from livestock interactions on Forest Service lands falls squarely within the goals of the America the Beautiful initiative. When livestock are present, for example, near a wolf den or rendezvous site, or in an area with a dense concentration of an essential food source for grizzly bears, carnivores are not able to move safely throughout their environment for basic needs. As discussed below, carnivore interactions with livestock often end with the death of carnivores.

Protecting corridors for species like wolves and grizzly bears is especially important because human- and climate-driven habitat fragmentation primarily affects species with a large home range.²⁴ For example, grizzly bears require large and undisturbed blocks of land to complete the stages of their life cycles. According to the U.S. Fish and Wildlife Service's 2021 species status assessment, grizzlies also require natural connectivity between populations to recover as a species. And, the presence of livestock grazing allotments and management removals—which can occur as a result of predation on livestock—are two of the main threats to grizzlies.²⁵ Since livestock allotments and management removals as a result of negative livestock interactions are major stressors for grizzlies as they move throughout their environment and disperse into new areas, implementing coexistence measures can protect the corridors, including between populations, that grizzlies require individually and to recover as a species.

²² Morse, S., U.S. Fish & Wildlife Service. Wildlife Corridors. Last accessed Oct. 5, 2022, available at <https://www.fws.gov/story/wildlife-corridors>.

²³ Washington Wildlife Habitat Connectivity Working Group. Importance of habitat connectivity. Last accessed October 5, 2022, available at <https://wacconnected.org/importance-of-habitat-connectivity/>.

²⁴ Beeland, D. 2009. Probing question: What are wildlife corridors? *PennState Research*, available at <https://www.psu.edu/news/research/story/probing-question-what-are-wildlife-corridors/>; see also Sells, S.N., et al. 2021. Evidence of economical territory selection in a cooperative carnivore. *Proceedings of the Royal Society B: Biological Sciences*, available at <https://royalsocietypublishing.org/doi/full/10.1098/rspb.2021.0108> (“Wolves are coursing predators who traverse long distances.”), and Shepherd, B., Whittington, J. Response of wolves to corridor restoration and human use management. 2006. *Ecology and Society* 11(2): 1, available at <https://www.ecologyandsociety.org/vol11/iss2/art1/> (“Wolves . . . incur higher risk of mortality due to their wide-ranging movements, [and] they are sensitive to habitat fragmentation.”).

²⁵ U.S. Fish and Wildlife Service. 2021. Species status assessment for the Grizzly Bear (*Ursus arctos horribilis*) in the lower-48 states.

Additionally, because carnivores prey on native ungulates, they are likely to follow these species as they move through human-facilitated corridors.²⁶ Research shows that wolves in particular favor human-made linear features to move around because this increases energy efficiency while hunting or guarding territory.²⁷ Because carnivores and native ungulates share the same corridors, protecting corridors for carnivores can benefit other species including elk and deer, whose seasonal habitat and migration paths are currently the focus of a significant amount of corridor protection work.²⁸

Lethal Wildlife Removal in Response to Wildlife-Livestock Conflicts

Human activity is a major source of mortality for large carnivores.²⁹ Along with habitat loss and fragmentation, human-caused mortality—including death due to livestock predation—has contributed to widespread carnivore population declines and has reduced carnivores’ ability to provide essential ecosystem functions.³⁰ Lethal removal of carnivores—primarily to benefit livestock producers in western states—often has significant local impacts and can cause removal of one or more carnivore species from local ecosystems.³¹

USDA reports show that livestock losses in the U.S. are primarily related to health, old age, and the weather, not wolves or other native carnivores.³² For example, these “nonpredator” causes account for approximately 98% of all deaths in adult cattle and 89% of all deaths in calves. Yet

²⁶ Kittle, A.M., et al. 2015. Wolves adapt territory size, not pack size to local habitat quality. *Journal of Animal Ecology*. 84: 1177-86, available at

<https://besjournals.onlinelibrary.wiley.com/doi/pdf/10.1111/1365-2656.12366> (noting that carnivore numbers are often higher where prey biomass is denser); *see also* Cleland, V. 2010. Gray wolf habitat suitability analysis for Washington state. *Tufts University*, available at https://sites.tufts.edu/gis/files/2014/11/Cleland_Valerie.pdf (“Wolves will follow prey[.]”).

²⁷ Sells, S.N., et al. 2021. Evidence of economical territory selection in a cooperative carnivore. *Proceedings of the Royal Society B: Biological Sciences*, available at <https://royalsocietypublishing.org/doi/full/10.1098/rspb.2021.0108>.

²⁸ Western big game seasonal habitat and migration corridors fund. Last accessed October 5, 2022, available at <https://www.nfwf.org/programs/rocky-mountain-rangelands/western-big-game-seasonal-habitat-and-migration-corridors-fund>.

²⁹ Ordiz, A., Aronsson, M., Persson, J., Støen, O.-G., Swenson, J.E., Kindberg, J. 2021. Effects of human disturbance on terrestrial apex predators. *Diversity*. 13(2), 68, available at <https://doi.org/10.3390/d13020068>.

³⁰ Ripple, W.J., Estes, J.A., Beschta, R.L., Wilmers, C.C., Ritchie, E.G., Hebblewhite, M., Berger, J., Elmhagen, B., Letnic, M., Nelson, M.P. 2014. Status and ecological effects of the world’s largest carnivores. *Science*. 343(6167):1241484, available at <https://doi.org/10.1126/science.1241484>.

³¹ Bergstrom, B.J. 2017. Carnivore conservation: Shifting the paradigm from control to coexistence. *Journal of Mammalogy*. 98(1):1–6, available at <https://doi.org/10.1093/jmammal/gyw185>.

³² U.S. Department of Agriculture, Animal and Plant Health Inspection Service. 2017. Death loss in U.S. cattle and calves due to predator and nonpredator causes, 2015, available at https://www.aphis.usda.gov/animal_health/nahms/general/downloads/cattle_calves_deathloss_2015.pdf; U.S. Department of Agriculture, Animal and Plant Health Inspection Service. 2015. Sheep and lamb predator and nonpredator death loss in the United States, available at https://www.aphis.usda.gov/animal_health/nahms/sheep/downloads/sheepdeath/SheepDeathLoss2015.pdf

the government has sponsored and funded carnivore killing for alleged depredations and perceived threats to livestock on behalf of livestock producers since the early 20th century. Despite advances in our scientific understanding of the importance of native carnivores—and the lack of evidence-based support for the effectiveness of lethal removal—carnivores are regularly killed on NFS lands at the request of federal grazing permittees.

The federal government, state wildlife agencies, and private entities kill carnivores on behalf of livestock owners who graze their livestock on the public lands. For perspective on the scope of the federal government’s involvement, we briefly summarize the actions of Wildlife Services, an agency of the USDA.

As part of its “predator damage management program,” Wildlife Services uses poisoned bait, neck snares, leghold traps, aerial gunning, and cyanide traps to kill tens of thousands of native carnivores every year, often on NFS lands, in response to reported attacks on livestock. In 2020 alone, Wildlife Services reported that it killed 1.5 million animals, including 433,192 native animals and over 67,000 native carnivores.³³ Among the carnivores Wildlife Services killed in 2020 were 449 black bears, 703 bobcats, 62,701 adult coyotes, 2,752 foxes, 381 gray wolves, 5 Mexican gray wolves (a federally listed endangered subspecies of gray wolf), and 284 mountain lions. Wildlife Services also destroyed 252 coyote dens and 80 fox dens, killing an unknown number of pups. Wildlife Services’ use of nonselective, lethal predator control (e.g., trapping and poison baits) has also caused the deaths of mammals from at least 12 taxa (or that were candidates for protection) under the Endangered Species Act since 1990.³⁴

The agency’s predator damage management program costs taxpayers tens of millions of dollars every year.³⁵ Moreover, the public subsidizes federal public lands grazing in the first place, meaning the real cost borne by the public is much higher. Private livestock producers are allowed to graze federal public lands for well below market price, paying only \$1.35 per head or cow/half pair per month. The Government Accountability Office (GAO) reported in 2005 the federal government spends at least \$144 million each year managing private livestock grazing on federal public lands, but collects only \$21 million in grazing fees, amounting to an annual net loss of at least \$123 million.³⁶ Considering the additional direct and indirect costs not included in the GAO

³³ U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services. Program Data Report G - 2020 animals dispersed/killed or euthanized/removed or destroyed/freed or relocated, available at https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage/pdr/?file=PDR-G_Report&p=2020:INDEX:.

³⁴ Bergstrom, B.J., Arias, L.C., Davidson, A.D., Ferguson, A.W., Randa, L.A., Sheffield, S.R. 2014. License to kill: Reforming federal wildlife control to restore biodiversity and ecosystem function. *Conservation Letters*. 7(2):131–42, available at <https://doi.org/10.1111/conl.12045>.

³⁵ U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services. Program Data Report A - 2020 Federal and cooperative funding, available at https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage/pdr/?file=PDR-A_Report&p=2020:INDEX:.

³⁶ GAO. 2005. Livestock grazing: Federal expenditures and receipts vary, depending on the agency and the purpose of the fee charged. GAO-05-869. Government Accountability Office. Washington, D.C., available at <https://www.gao.gov/assets/gao-05-869.pdf>.

report, economists have estimated that the federal public lands grazing on Bureau of Land Management and USFS lands may cost as much as \$500 million to \$1 billion annually.³⁷ Yet, grazing on all federal public lands contributes only 2-3% of national meat production, making minor contributions to regional economies.³⁸

Legal Authority

Under existing law, the Forest Service has both the authority and the responsibility to create a proactive, science-based, national grazing management framework that incorporates livestock-carnivore conflict mitigation measures into the livestock grazing permitting and land management planning processes.

Forest Service Authority to Manage Livestock Grazing

The Federal Land Policy and Management Act of 1976 authorizes the Forest Service to permit livestock grazing on specified allotments within a national forest. The Forest Service authorizes and manages grazing in three main ways:

- By issuing grazing permits pursuant to 43 U.S.C. §1752(a) and 36 C.F.R. § 222. A grazing permit is the official written permission to graze livestock on NFS lands and includes the number, kind, and class of livestock; the allotment to be grazed; and the period of use. *See* 36 C.F.R. §§ 222.1-222.4; 43 U.S.C. §§ 1702(p) and 1752.
- By issuing Allotment Management Plans (AMP) pursuant to 43 U.S.C. § 1752(d) and 36 C.F.R. § 222.1(b). An AMP is a land management directive developed for individual allotments designated for livestock grazing. Among other things, the AMP “[c]ontains such other provisions relating to livestock grazing and other objectives as may be prescribed by the Chief, Forest Service, consistent with applicable law.” 36 C.F.R. § 222.1(b)(2)(iii); 43 U.S.C. §§ 1702(k)(1), (3), and 1752.
- By issuing annual operating instructions (AOI) pursuant to Forest Service Handbook 2209.13, §§ 94.3 and 94.31. AOIs reflect the specific operating plan for each grazing season. Issued annually, AOIs offer flexibility and allow the Forest Service to fine-tune grazing restrictions and conditions in response to circumstances that may not have been anticipated or planned for in the AMP or grazing permit. AOIs are incorporated by

³⁷ Glaser, C., Romaniello, C., Moscovitz, K. 2015. Costs and consequences: The real price of livestock grazing on America’s public lands. Center for Biological Diversity, available at https://www.biologicaldiversity.org/programs/public_lands/grazing/pdfs/CostsAndConsequences_01-2015.pdf.

³⁸ Leshy, J.D., McUsic, M.S. 2008. Where’s the beef? Facilitating voluntary retirement of federal lands from livestock grazing. 17 *N.Y.U. Environmental Law Journal*, 368–69, available at <https://nyuelj.org/wp-content/uploads/2013/03/Leshy.pdf>.

reference into grazing permits and govern the permittee's grazing operations for the following grazing season.

The Forest Service has broad authority to modify, cancel, or suspend grazing permits, update AMPs, and adjust AOIs for the benefit of special resources on federal allotments under its jurisdiction. Forest Service grazing regulations expressly recognize the agency's authority to cancel or suspend grazing permits in whole or in part for non-compliance with federal or state laws or regulations regarding wildlife protection. Additionally, the regulations expressly grant the Forest Service authority to modify terms and conditions of permits due to changes to law or policy, updated AMPs, "or other management needs." 36 C.F.R. §§ 222.4(a)(6)-(8).

Forest Service Authority and Responsibility to Manage and Conserve Wildlife

Mitigating carnivore-livestock conflicts falls squarely within the Forest Service's jurisdiction to manage its lands and the wildlife inhabiting them. According to federal land policy experts, "federal land management agencies have an obligation, and not just the discretion, to manage and conserve fish and wildlife on federal lands."³⁹ The Forest Service's duty to maintain viable populations⁴⁰ of native carnivores on national forest lands includes the responsibility to mitigate conflicts with Forest Service permitted livestock grazing—a demonstrated threat to the conservation of native carnivores.

In the Multiple Use Sustained Yield Act (MUSYA) of 1960, 16 U.S.C. §§ 528-31, Congress expressly recognized "wildlife and fish" as among the "multiple uses" the Forest Service is responsible for managing. "It is the policy of the Congress that the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and *wildlife and fish* purposes." 16 U.S.C. § 528 (emphasis added).

Under the MUSYA, the Forest Service maintains broad discretion to determine the priority of different uses and how to best manage competing uses when conflicts arise. *See e.g., Perkins v. Bergland*, 608 F.2d. 803 (9th Cir. 1979); *Wyoming v. U.S. Dep't of Agric.*, 661 F.3d 1209, 1267–68 (10th Cir. 2011) (upholding Forest Service's authority to promulgate and implement 2001 Roadless Rule over challenges that the Rule failed to satisfy the statutory multiple-use mandate because it precluded timber harvesting in certain areas).

Although the Forest Service has the discretion to determine *how* to manage for multiple uses (*e.g.*, managing livestock grazing while also managing and conserving native carnivores), it may not avoid its responsibility to manage for wildlife and fish altogether, particularly where other legal duties so require.

³⁹ For a comprehensive analysis of the constitutional and statutory bases of the federal government's authority over wildlife on federal lands, *see* Nie, M., Barns, C., Haber, J., Joly, J., Pitt, K., Zellmer, S. 2017. Fish and wildlife management on federal lands: Debunking state supremacy. *Environmental Law*. 47(4):797–932, available at <http://www.jstor.org/stable/44466736>.

⁴⁰ NFMA 1982 rule, 36 C.F.R. §§ 219.19, 219.27 (1982) (viability mandate for all wildlife).

The National Forest Management Act (NFMA) of 1976, 16 U.S.C. §§ 1600-14, imposes specific duties on the Forest Service to manage and conserve wildlife on NFS lands. Through NFMA, Congress elevated the importance of ecosystems, habitat, and wildlife in Forest Service land management. NFMA established wildlife diversity as a central component of Forest Service planning and management and prescribed science-based standards intended to ensure the diversity of wildlife species across the landscape.

According to legal scholar Charles Wilkinson, “NFMA called for a fundamental reshaping of national wildlife policy.”⁴¹ Further:

[W]hen the section is read in light of the historical context and overall purposes of the NFMA, as well as the legislative history of the section, it is evident that section 6(g)(3)(B) requires Forest Service planners to treat the wildlife resource as a controlling, co-equal factor in forest management . . .⁴²

Whereas the Forest Service has discretion under MUSYA to manage for multiple uses—including fish and wildlife—NFMA bounds this discretion with substantive standards defining the agency’s responsibilities to manage and conserve fish and wildlife. NFMA requires that national forest planning “provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives.” 16 U.S.C. § 1604(g)(3)(B). NFMA’s broad wildlife diversity mandate not only imposes substantive standards on the Forest Service, it also “confirms the Forest Service’s duty to protect [all] wildlife.” *Seattle Audubon Soc’y v. Moseley*, 798 F. Supp. 1484, 1489 (W.D. Wash. 1992). The Forest Service’s duty under NFMA “clearly requires protection of the entire biological community.” *Sierra Club v. Espy*, 822 F. Supp. 356, 364 (E.D. Tex. 1993).

The regulations the Forest Service developed to implement NFMA expanded on its duty to provide for the diversity of animal species across NFS lands. Regulations developed through two major rulemakings in 1982 and 2012⁴³ direct Forest Service compliance with the wildlife diversity mandate by requiring that the agency both protect wildlife habitat and ensure “viable” wildlife populations. While the two sets of regulations vary in how they define the viability requirement, both emphasize the importance of ensuring species population distribution, persistence, and resilience.

Land and Resource Management Plans (forest plans), whether developed pursuant to the 1982 or 2012 NFMA regulations, must ensure the viability of species in planning areas. The 2012 NFMA regulations require the Forest Service to “use the best available scientific information to inform

⁴¹ Wilkinson, C.F., Anderson, H.M. 1985. Land and resource planning in the national forests. *Oregon Law Review*. 64(1&2):1, 296, available at <https://scholar.law.colorado.edu/articles/1038/>.

⁴² *Id.*

⁴³ NFMA 1982 rule, 36 C.F.R. §§ 219.19, 219.27 (1982) (viability mandate for all wildlife); NFMA 2012 rule, 36 C.F.R. §§ 219.9(a)-(b) (2012) (recovery and viability mandates for T/E species and “species of conservation concern”).

the planning process,” 36 C.F.R. § 219.3, and to ensure ecological integrity on Forest Service lands, 36 C.F.R. § 219.8. AMPs and grazing permits are subject to NFMA’s wildlife diversity mandate through the requirement that these instruments be consistent with forest plans. *See* 16 U.S.C. § 1604(i).

The Forest Service has on several occasions exercised its authority to manage and conserve wildlife by adopting specific measures to address conflicts between human activities and native wildlife. For example, on the Payette National Forest in Idaho, the Forest Service used the planning process to assess and address the risk of disease transmission from domestic sheep to Bighorn sheep (a USFS “sensitive” species). The Forest Service ultimately adopted a forest plan that reduced domestic sheep grazing on the Payette National Forest by approximately 70%, referring to the 1982 NFMA planning rule as the main source of legal authority for its decision: “The regulations implementing NFMA require that I select an alternative that provides habitat to support at least a minimum number of reproductive bighorn sheep and the habitat is well distributed so that those bighorns can interact with others in the planning area.”⁴⁴

On the Wallowa-Whitman, Umatilla, and Malheur National Forests in eastern Oregon, all of which are heavily grazed by domestic livestock, the Forest Service in June 2018 adopted⁴⁵ several forest plan standards to mitigate wolf-livestock conflicts. These enforceable standards included prohibiting the turning out of sick or injured livestock to reduce the risk of attracting wolves, requiring the removal or disposal of livestock carcasses to avoid attracting wolves, prohibiting salt or other livestock attractants near known active wolf dens or rendezvous sites to minimize livestock use of these sites, and related site-specific considerations to reduce disturbances to denning wolves.⁴⁶

On the Flathead National Forest in Montana, the Forest Service adopted several standards in its recently revised forest plan aimed at mitigating grizzly bear-livestock conflicts.⁴⁷ One standard provides that “new or reauthorized livestock grazing permits and annual operating plans shall incorporate requirements to reduce the risk of grizzly bear-human conflicts [and] include a clause providing for modification, cancellation, suspension, or temporary cessation of activities, if needed, to resolve a grizzly bear-human conflict situation.” Additional standards require that permittees promptly report and properly dispose of livestock carcasses, prohibit a net increase in the number of active sheep allotments on NFS lands, prohibit an increase in the number of active

⁴⁴ *See Record of decision for the: Final supplemental environmental impact statement and forest plan amendment identifying suitable rangeland for domestic sheep and goat grazing to maintain habitat for viable bighorn sheep populations* (July 2010), ROD-15, available at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5238683.pdf.

⁴⁵ The USFS headquarters/regional forester subsequently instructed local officials to withdraw these revised forest plans after the objection period and thus their revision is still pending.

⁴⁶ *See, e.g.,* Wallowa-Whitman National Forest Land Management Plan (2018), Species diversity guidelines, at 136, available at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd584609.pdf.

⁴⁷ Flathead National Forest Land Management Plan (2018), Livestock grazing standards at 80–81, available at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd603502.pdf.

cattle grazing allotments above the baseline on NFS lands, and provide that temporary permits for grazing by small livestock “shall not result in an increase in bear-small livestock conflicts.”

While these examples show that managing livestock grazing on NFS lands in a manner that also protects native carnivores is possible, they are unfortunately the exception. Too often, Forest Service land managers fail to address carnivore-livestock conflicts at all, let alone in a way that satisfies the agency’s legal duty to manage and conserve carnivore species. Indeed, with respect to gray wolves, one federal court recently observed that Forest Service forest plans “do not contain standards and guidelines specific to wolf management” and, accordingly, that federal public land management regimes do not provide adequate regulatory mechanisms to ensure sustainable wolf populations.⁴⁸

The erroneous but persistent view among Forest Service land managers that federal agencies manage wildlife habitat and states manage wildlife impedes the rigor with which the Forest Service asserts its legal authority to meaningfully address carnivore-livestock conflicts.⁴⁹ Land managers who adhere to this false narrative may shirk their legal duties to protect wildlife.

The way the Forest Service manages livestock grazing on NFS lands harms native carnivores and interferes with carnivore conservation, and the problem is growing as carnivore numbers increase and they recolonize habitat. The Forest Service’s latitude in managing for these multiple uses does not mean it may ignore carnivore-livestock conflicts and the nearly inevitable lethal removal of carnivores that follows. Fortunately, as shown in this petition, the Forest Service has the legal authority to act and mitigate these conflicts in a uniform, coordinated, and science-based manner.

Public Support for Nonlethal Conflict Reduction Measures

The Forest Service is responsible for managing and conserving public lands and resources—including wildlife—for the benefit of present and future generations of the American people. *See, e.g.*, 16 U.S.C. §§ 529, 531(a); 16 U.S.C. § 1600. Therefore, the Forest Service needs to understand the American public’s views on wildlife and the actions of other government agencies to “control” native predators. Because the Forest Service has a duty to manage and

⁴⁸ *Defenders of Wildlife v. U.S. Fish and Wildlife Serv.*, Nos. 21-cv-00344-JSW, 21-cv-00349-JSW, 21-cv-00561-JSW, 2022 WL 499838, at *14 (N.D. Cal. Feb. 10, 2022).

⁴⁹ *See, e.g.*, Martin, J.V., Epstein, K., Anderson R.M., Charnley, S. 2021. Coexistence praxis: The role of resource managers in wolf-livestock interactions on federal lands. *Frontiers in Conservation Science*. 2:707068, available at <https://www.frontiersin.org/articles/10.3389/fcosc.2021.707068/full> (summarizing interviews of Forest Service land managers in the Western U.S., including: “This need for Forest Service managers to “stay in their lane”—*e.g.*, leaving wildlife management questions to state agencies—was often repeated, . . .”; “One manager on the Colville pointed to how the USFS ‘always tried to be careful and mindful of doing our work and not trying to do other agencies’ or people’s work. We don’t get into a lot of conversations about how the state should be managing the wildlife or wolves. We also shouldn’t be speaking about how ranchers should manage their businesses. What we’re to do is manage the resources and habitat out on national forest land.””).

conserve public lands and wildlife in furtherance of, among other things, the national interest, public values should inform the national strategy the Forest Service develops to facilitate coexistence between public land livestock grazing and native carnivore conservation.

Public values toward wildlife are shifting, according to a recent study assessing how people across all 50 states think about wildlife.⁵⁰ Today, a majority of the American public view wildlife as part of an extended social network, deserving of protection, consideration, and care, and as having an intrinsic right to exist (the “mutualist” view). People holding a mutualist value orientation have less tolerance for lethal control of predators. On the other hand, a minority of the American public view wildlife as subordinate to humans, measuring their value in relation to their use and benefit to humans (the “traditionalist” view). People holding a traditionalist value orientation have a higher tolerance for lethal control of predators. The researchers found that Western states had a 5.7 percent decline in traditionalists and a 4.7% increase in mutualists between 2004 and 2018.

Similarly, research shows that the American public strongly prefers nonlethal methods to address wildlife-livestock conflicts over lethal control and views nonlethal measures as more humane than lethal techniques.⁵¹ Specifically, lethal predator control methods such as shooting animals from aircraft, neck snares, gassing pups in dens, leg-hold traps, and poisons are becoming less popular with the American public.⁵²

Evolving state and federal policies reflect this change in attitude to more strongly favor wildlife protection and oppose cruel wildlife killing practices. In state legislatures and in Congress, the number of laws and new legislation that ban or would ban cruel wildlife killing practices including poisoning and trapping is increasing. For example, at least six states have passed laws banning the use of M-44 “cyanide bombs.” Similarly, H.R. 4951 (“Canyon’s Law”), recently

⁵⁰ Manfredo, M.J., Sullivan, L., Don Carlos, A.W., Dietsch, A.M., Teel, T.L., Bright, A.D., Bruskotter, J. 2018. America’s wildlife values: The social context of wildlife management in the U.S. national report from the research project entitled “America’s Wildlife Values.” Colorado State University, Department of Human Dimensions of Wildlife, available at https://www.fishwildlife.org/application/files/9915/4049/1625/AWV_-_National_Final_Report.pdf.

⁵¹ Slagle, K., Bruskotter, J.T., Singh, A.S., Schmidt, R.H. 2017. Attitudes toward predator control in the United States: 1995 and 2014. *Journal of Mammalogy*. 98(1):7–16, available at <https://doi.org/10.1093/jmammal/gyw144>; Reiter, D.K., Brunson, M.W., Schmidt, R.H. 1999. Public attitudes toward wildlife damage management and policy. *Wildlife Society Bulletin*. 27(3):746–58. <http://www.jstor.org/stable/3784098>; Arthur, L.M. 1981. Coyote control: The public response. *Journal of Range Management*. 34(1):14–15, available at <https://journals.uair.arizona.edu/index.php/jrm/article/viewFile/7118/6730>; Way, J.G., Bruskotter, J.T. 2012. Additional considerations for gray wolf management after their removal from Endangered Species Act protections. *Journal of Wildlife Management*. 76(3):457–61, available at <https://doi.org/10.1002/jwmg.262>.

⁵² Slagle, K., Bruskotter, J.T., Singh, A.S., Schmidt, R.H. 2017. Attitudes toward predator control in the United States: 1995 and 2014. *Journal of Mammalogy*. 98(1):7–16, available at <https://doi.org/10.1093/jmammal/gyw144>.

reintroduced in the U.S. Congress, would ban the use of M-44s on all federal public lands. And in April 2020, Colorado became the 6th state to ban killing contests—the 4th state to do so within the past year.

Shifting social values toward wildlife strengthen the case for Forest Service leadership to mitigate and prevent carnivore-livestock conflicts, which would satisfy the agency’s stewardship obligations to present and future generations of Americans and its duty to manage and conserve wildlife on NFS lands.

Case Studies

Colville National Forest

The Colville National Forest case study demonstrates the Forest Service’s failure to manage livestock grazing in the Colville National Forest in a way that protects wildlife. The agency’s grazing activities in the Colville is seriously undermining wolf conservation in the state of Washington.

Gray wolves have started reclaiming their historic habitat in Washington state, primarily in eastern Washington. Wolves in Washington once numbered as many as 5,000, until humans extirpated them by the 1930s. The state of Washington listed the gray wolf as endangered in 1980 and subsequently the Washington Department of Fish and Wildlife developed a gray wolf conservation and management plan to guide wolf recovery as they naturally reestablish themselves across the state. The 2011 plan contains minimal—and as-yet-unrealized—target population objectives.

The Colville National Forest’s livestock grazing program is impeding wolf recovery in Washington. Between 2012 and early 2021, approximately 34 wolves were killed in Washington state in response to conflicts with livestock. Over 90% of those wolves were killed either completely or partially in response to predations of federally permitted cattle grazing on the Colville.

Located in the northeast corner of Washington, the Colville National Forest is mostly comprised of densely forested, rugged terrain—ideal habitat for native carnivores like wolves, grizzly bear, and lynx. Yet nearly 70 percent of the forest is open to livestock grazing. The Forest Service has not changed the acreage available for livestock grazing since the gray wolf began reclaiming its historic habitat in Washington, nor has the Forest Service changed anything else to manage livestock grazing to accommodate returning gray wolves, which the Forest Service has dedicated as a “sensitive species” for the Pacific Northwest region. Predictably, without any mandatory proactive measures in place to reduce the risk of livestock depredations, conflict ensue.

Colville National Forest managers bear much, if not most, of the responsibility for the ongoing conflicts, livestock depredations, and killing of wolves in Washington. Colville land managers have had multiple opportunities to proactively address and mitigate wolf-livestock conflicts in a

way that also serves the conservation needs of wolves inhabiting the Forest by modifying grazing management, but have refused to do so. This is despite having received specific recommendations from state and federal wildlife agencies to incorporate science-backed conflict reduction measures into its grazing management framework.

This institutional bias in favor of lethal control of wolves is well illustrated by a Colville district ranger's statement regarding the solution to cattle depredation: "By [killing wolves] soon enough, you remove the offending wolves that probably killed those livestock."⁵³

This institutional bias is also demonstrated by the Colville land managers' failure over the past decade to use the forest planning, allotment management planning, or grazing permitting processes to reduce the risk of recurring conflicts between livestock and reestablishing native wolves. As wolves continue to return to the forest and as recurring wolf-livestock conflicts continue to prove deadly to both wolves and cattle, the Colville National Forest managers refuse to change the grazing program to reduce the conflicts.

The Colville case study demonstrates that Forest Service action to effectively address carnivore-livestock conflicts in the livestock grazing context is not occurring at the forest level. Forest Service leadership at the national level is desperately needed to reconcile the conflicts between permitted livestock grazing and native carnivores inhabiting NFS lands. The proactive, science-backed approach outlined in this petition is clearly needed and will serve both native carnivore conservation and public lands livestock producers.

East Paradise Allotments

In its December 2021 East Paradise Range Allotment Management plan decision, the Forest Service authorized livestock grazing on National Forest lands in an essential movement corridor for grizzly bears, undermining their recovery in an area just north of Yellowstone National Park. More than 20 management removals in response to livestock interactions have occurred near or adjacent to the livestock grazing allotments covered by this decision.

Despite the history of livestock conflicts in this area, and the resulting lethal grizzly bear removals, the Forest Service authorized expanded livestock grazing in this East Paradise decision. The agency left several allotments available for future grazing instead of closing them, expanded the acreage of some allotments and the grazing season dates in others. Nine conservation groups, including WildEarth Guardians, filed a lawsuit in September, 2022, challenging the East Paradise decision. Not only did this decision undermine grizzly bear recovery, but it stands in stark contrast to the agency's commitments under 30x30 to protect wildlife habitat connectivity and corridors.

⁵³ Read, R. (Dec. 18, 2019) One ranch, 26 wolves killed: Fight over endangered predators divides ranchers and conservationists. *Los Angeles Times*, available at <https://www.latimes.com/world-nation/story/2019-12-18/endangered-wolf-killings-ranch>.

Like the Colville case study, the East Paradise decision by the Forest Service demonstrates the consequences that the lack of a coexistence framework at the national level has both on threatened wildlife populations and on the agencies themselves when they are subject to litigation as a result of decisions like East Paradise.

Gila National Forest

Similarly, the Forest Service's livestock grazing management on the Gila National Forest in New Mexico is undermining Mexican gray wolf recovery (a federally listed endangered subspecies of gray wolf). Mexican wolves in New Mexico live largely or entirely on the Gila, which contains some of the best wolf habitat in the Blue Range Wolf Recovery Area and is critical for Mexican wolf recovery.

But Forest Service livestock grazing management on the Gila—and the resulting wolf-livestock conflicts and retaliatory wolf killing—impedes long-term persistence of wolf packs on the forest. Between 1998 and 2018, 82 out of 193 wolf removals (lethal, non-lethal, and intended non-lethal removals that resulted in a dead wolf) were attributed to livestock predation on the Gila. Removing these wolves—each of which are genetically valuable—contributes to the ongoing decrease in genetic diversity of the population, a primary threat to the conservation of the species.

Mexican wolf-livestock conflict in the Rainy Mesa area of the Gila is a recurring issue spanning many years. Multiple wolf packs have used this area since the recovery program's inception because it has high-quality elk habitat and relatively little human disturbance. Since 2018, at least seven wolves have been removed from just one allotment as a result of livestock depredations. The predation rate on this allotment is higher than average for other allotments in wolf territory on the Gila; it has one of the five highest conflict rates on the forest even though it also ranks highest for wolf removals. Despite these recurring wolf-livestock conflicts, the AMP for this allotment does not even mention Mexican gray wolves. Nor have Gila land managers required grazing permittees to adjust their operations to reduce conflicts.

Scientists have recommended several management measures to prevent wolves from preying on livestock on the Gila, which Gila land managers have ignored. For example, scientists strongly recommended that land managers require livestock owners to remove or render inedible naturally occurring cattle carcasses since carcasses commonly attract wolves to areas with livestock, which can lead to depredation. Gila land managers ignored even this commonsense measure to mitigate a demonstrated pattern of repeated conflicts.

Across the Gila, livestock grazing with no mandatory livestock protection measures—often leading to depredation and lethal wolf removals—is among the top two Forest Service-controlled causes of the wolves' declining genetic diversity. Despite scientific evidence and calls for action, the Forest Service refuses to update AMPs or incorporate conflict reduction measures into AOIs to protect Mexican wolves and livestock on the Gila. Similar to the situation on the Colville, Gila

managers are able to sidestep their responsibility to protect Mexican gray wolves on the Gila National Forest because of a lack of national direction on livestock coexistence, demonstrating the need for nation-wide Forest Service leadership.

Science on Carnivore-Livestock Conflict Mitigation Measures

A large and growing body of scientific research suggests that nonlethal carnivore-livestock conflict deterrents and animal husbandry practices effectively reduce carnivore predation on livestock. Conversely, science also suggests that lethal control does not decrease carnivore-livestock conflicts and may lead to increased conflict. Because native carnivores play such a critical role in maintaining healthy ecosystems, nonlethal conflict prevention benefits not only carnivores and livestock producers, but the whole environment.

Further, the Administration's America the Beautiful initiative tasks the Forest Service with using science as a guide in achieving 30x30. The initiative recognizes that conservation efforts are more likely to succeed when they are based on the best available science and informed by "the recommendations of top scientists and subject matter experts."⁵⁴ Over the past 20 years, scientific experts in the field of livestock-carnivore conflicts and coexistence recommend the use of non-lethal techniques and livestock husbandry methods to reduce conflict, as recommended in this petition. Research shows that nonlethal methods are more effective than lethal control measures for preventing livestock depredation by large carnivores.⁵⁵ Additionally, studies show that the effectiveness of nonlethal tools is enhanced when several types are used in combination on an adaptive basis.⁵⁶

⁵⁴ Conserving and Restoring America the Beautiful (2021), at 20.

⁵⁵ See, e.g., Shivik, J.A., Treves, A., Callahan, P. 2003. Nonlethal techniques for managing predation: Primary and secondary repellents. *Conservation Biology*. 17(6):1531–37, available at <https://doi.org/10.1111/j.1523-1739.2003.00062.x>; Lance, N.J., Breck, S.W., Sime, C., Callahan, P., Shivik, J.A. 2010. Biological, technical, and social aspects of applying electrified fladry for livestock protection from wolves (*Canis lupus*). *Wildlife Research*. 37(8):708–14, available at https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2257&context=icwdm_usdanwrc; Breck, S.W., Kliever, B.M., Panasci, M., Oakleaf, J., Johnson, T. 2011. Domestic calf mortality and producer detection rates in the Mexican wolf recovery area: Implications for livestock management and carnivore compensation schemes. *Biological Conservation*. 144(2):930–36, available at <https://doi.org/10.1016/j.biocon.2010.12.014>; Stone, S.A., Breck, S.W., Timberlake, J., Haswell, P.M., Najera, F., Bean, B.S., Thornhill, D.J. 2017. Adaptive use of nonlethal strategies for minimizing wolf-sheep conflict in Idaho. *Journal of Mammalogy*. 98(1):33–44, available at <https://doi.org/10.1093/jmammal/gyw188>; Barnes, M. 2015. Livestock management for coexistence with large carnivores, healthy land and productive ranges. Keystone Conservation, available at <https://wolfwatcher.org/wp-content/uploads/2015/09/Livestock-Management-for-Coexistence-with-Large-Carnivores-Healthy-Land-Productive-Ranches.pdf>.

⁵⁶ Bangs, E., Jiminez, M., Niemeyer, C., Fontaine, J., Collinge, M., Krischke, R., Handegard, L., Stone, S. 2006. Non-lethal and lethal tools to manage wolf-livestock conflict in the northwestern United States. *Proceedings of the Vertebrate Pest Conference*. 22:7–16, available at <https://doi.org/10.5070/V422110170>; Sime, C.A., Bangs, E., Bradley, E., Steuber, J.E., Glazier, K., Hoover, P.J., Asher, V., Laudon, K., Ross, M., Trapp, J. 2007. Gray wolves and livestock in Montana: A

A 2017 study on public grazing allotments in Idaho demonstrated that nonlethal management methods and animal husbandry techniques effectively mitigate carnivore-livestock conflicts.⁵⁷ The allotments in the study, like many existing USFS grazing allotments, were large, remote, rugged, unpopulated, mountainous, and/or had primarily forested landscapes. The researchers evaluated the effectiveness of nonlethal conflict mitigation measures and found that proactively using a variety of nonlethal techniques reduced sheep depredation by wolves. Over seven years, the researchers collected data on sheep depredation mortalities in an area where only nonlethal measures were used, including increased human presence, livestock guardian dogs, and attractant reduction. The researchers also collected data on sheep mortalities in an adjacent, wolf-occupied area where no nonlethal measures were applied, but where wolves were lethally removed. Comparing the data, the researchers calculated that wolves killed sheep at a rate 3.5 times higher in the lethal removal area with no nonlethal protection measures. Conversely, wolves killed only 0.02% of sheep in the area protected by nonlethals—the lowest loss rate among sheep-grazed areas in wolf habitat statewide. Proactive, nonlethal management measures reduced domestic sheep losses by 90 percent.

A 2018 literature review of 114 peer-reviewed studies that evaluated the effectiveness of lethal and nonlethal methods for reducing carnivore predation on livestock showed that certain nonlethal methods, including livestock guardian dogs, effectively deterred conflicts in agricultural landscapes.⁵⁸ Further, the science also showed that promptly removing or properly disposing of livestock carcasses and other attractants prevented conflicts.⁵⁹ Studies on seasonal carnivore behavior likewise showed that moving livestock away from high risk areas, like carnivore denning and rendezvous sites, during certain times of the year also effectively reduced carnivore-livestock conflicts.⁶⁰ In fact, according to one recent literature review, “[i]mproving

recent history of damage management. Montana Fish, Wildlife & Parks, available at <https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1206&context=wdmconference>; Breck, S., Clark, P., Howery, L., Johnson, D., Kluever, B., Smallidge, S., Cibils, A. 2012. A perspective on livestock-wolf interactions on western rangelands. *Rangelands*. 34(5):6-11, available at <https://doi.org/10.2111/RANGELANDS-D-11-00069.1>.

⁵⁷ Stone, S.A., Breck, S.W., Timberlake, J., Haswell, P.M., Najera, F., Bean, B.S., Thornhill, D.J. 2017. Adaptive use of nonlethal strategies for minimizing wolf–sheep conflict in Idaho. *Journal of Mammalogy*. 98(1):33–44, available at <https://doi.org/10.1093/jmammal/gyw188>.

⁵⁸ van Eeden, L.M., Eklund, A., Miller, J.R.B., López-Bao, J.V., Chapron, G., Cejtin, M.R. 2018. Carnivore conservation needs evidence-based livestock protection. *PLoS Biology*. 16(9):e2005577, available at <https://doi.org/10.1371/journal.pbio.2005577>.

⁵⁹ Wilson, S.M., Madel, M.J., Mattson, D.J., Graham, J.M., Merrill, T. 2006. Landscape conditions predisposing grizzly bears to conflicts on private agricultural lands in the western USA. *Biological Conservation*. 130(1):47–59, available at <https://doi.org/10.1016/j.biocon.2005.12.001>; Morehouse, A.T., Boyce, M.S. 2011. From venison to beef: Seasonal changes in wolf diet composition in a livestock grazing landscape. *Frontiers in Ecology and the Environment*. 9(8):440–45, available at <https://doi.org/10.1890/100172>.

⁶⁰ Parr, S., Engelhart, J., Liebenberg, L., Sampson, L., Coleshill, J. 2017. A ranchers guide to coexistence among livestock, people, and wolves. 2d ed. at 20–23, available at DOI:10.13140/RG.2.2.17802.18883; Breck, S.W., Kluever, B.M., Panasci, M., Oakleaf, J., Johnson, T., Ballard, W., Howery, L., Bergman,

[livestock] husbandry practices around wolf territories during high risk seasons is one of the leading factors in reducing wolf depredations.”⁶¹

Since poor livestock surveillance is strongly associated with livestock losses, experts recommend maintaining regular and frequent human presence to detect and reduce carnivore-livestock conflict on the range. Trained individuals can closely monitor livestock and carnivore behavior, detect sick or dead livestock so that they can be promptly removed or properly managed, and keep herds or flocks together in defensible spaces.⁶²

Recent research and literature reviews show strong support for measures applicable to large, remote, and often heavily treed landscapes, which represent the majority of USFS grazing allotments. Conversely, lethal measures have not been shown to effectively resolve carnivore-livestock conflicts, and may have unintended consequences, including increased predation. For example, researchers examining 25 years of data (1987-2012) from Idaho, Wyoming, and Montana found a positive correlation between the number of wolves killed and the number of livestock depredations the following year.⁶³ While the exact mechanism responsible for this effect is not entirely understood, the researchers surmised that wolf biology, and in particular compensatory strategies to respond to increased wolf mortality, likely played a role.⁶⁴

Two recent analyses of long-term lethal wolf control found that removals generally had limited or no effect in reducing the recurrence of depredation.⁶⁵ Other studies similarly found little or no scientific support for the proposition that killing carnivores such as wolves, mountain lions, and

D.L. 2011. Domestic calf mortality and producer detection rates in the Mexican wolf recovery area: Implications for livestock management and carnivore compensation schemes. *Biological Conservation*. 144(2):930–36, available at <https://doi.org/10.1016/j.biocon.2010.12.014>.

⁶¹ Western Wildlife Outreach. Wolf-livestock nonlethal conflict avoidance: A review of the literature. 2014. at 12, available at https://wdfw.wa.gov/sites/default/files/2019-02/wolf_livestock_conflict_avoidance_literature_review_11_2014_final_submitted_version.pdf.

⁶² Parr, S., Engelhart, J., Liebenberg, L., Sampson, L., Coleshill, L. 2017. A Ranchers Guide to Coexistence Among Livestock, People, and Wolves. 2d, available at DOI:10.13140/RG.2.2.17802.18883, at 9–10 (citing Barnes, M. 2015. Low-stress herding improves herd instinct, facilitates strategic grazing management. *Stockmanship Journal*. 4(1):34–43, and Musiani, M., Muhly, T., Callaghan, C., Gates, C.C., Smith, M., Stone, S., Tosoni, E. 2004. Recovery, conservation, conflicts and legal status of wolves in western North America. Pp. 51–75 in Fascione, N., Delach, A., Smith, M. (eds.). *Predators and People: from conflict to conservation*. Island Press, Washington, D.C.).

⁶³ Wielgus, R.B., Peebles, K.A. 2014. Effects of wolf mortality on livestock depredations. *PLoS One*. 9(12):e113505, available at DOI: 10.1371/journal.pone.0113505 PMID: 25470821. Two subsequent studies have attempted to critique aspects of the Wielgus & Peebles (2014) study. Wielgus has addressed these concerns in several reviews and media articles.

⁶⁴ *Id.*

⁶⁵ Harper, E.K., Paul, W.J., Mech, L.D., Weisberg, S. 2008. Effectiveness of lethal, directed wolf depredation control in Minnesota. *Journal of Wildlife Management*. 72(3):778–84, available at <https://doi.org/10.2193/2007-273>; Muhly, T., Gates, C.C., Callaghan, C., Musiani, M. 2010a. Livestock husbandry practices reduce wolf depredation risk in Alberta, Canada. Pp. 261–86 in Musiani, M., Boitani, L., Paquet, P.C. *The world of wolves: New perspectives on ecology, behavior, and management*. University of Calgary Press, Calgary, Alberta.

bears reduces livestock losses, and also suggested that killing wolves to benefit one farm or ranch may increase predation losses elsewhere.⁶⁶

Overall, the experimental evidence for effective ways to protect livestock is stronger for nonlethal methods than for lethal methods. The science on the relative effectiveness of nonlethal and lethal predator control measures at mitigating carnivore-livestock conflicts should inform the Forest Service's development of an appropriate management response.

REQUESTED ACTION:

Petitioners request that the Forest Service create a proactive, nationally coordinated, grazing management framework to mitigate conflicts between native carnivores and federally permitted commercial livestock. This management framework would require that permitted livestock grazing on Forest Service administered public lands incorporates science-backed nonlethal conflict mitigation measures and livestock husbandry practices.

Proactive modifications to the Forest Service grazing program to reduce carnivore-livestock conflicts should include science-backed measures incorporated at both (1) the programmatic scale, as forest-wide grazing management directives in Land and Resource Management Plans ("forest plans"), either during the forest plan revision process or through amendments to existing plans; and (2) the allotment-specific scale, during the development and revision of allotment management plans for allotments that may experience carnivore-livestock conflicts. The agency's strategy should include the minimum components described below.

⁶⁶ Treves, A., Bruskotter, J.T. 2014. Tolerance for predatory wildlife. *Science*. 344(6183):476–77, available at https://www.researchgate.net/publication/262008800_Tolerance_for_Predatory_Wildlife; Treves, A., Krofel, M., McManus, J. 2016. Predator control should not be a shot in the dark. *Frontiers in Ecology and the Environment*. 14(7):380–88, available at <https://doi.org/10.1002/fee.1312>; van Eeden, L.M., Crowther, M.S., Dickman, C.R., Macdonald, D.W., Ripple, W.J., Ritchie, E.G., Newsome, T.M. 2018. Managing conflict between large carnivores and livestock. *Conservation Biology*. 32(1):26–34, available at <https://doi.org/10.1111/cobi.12959>; van Eeden, L.M., Eklund, A., Miller, J.R.B., López-Bao, J.V., Chapron, G., Cejtin, M.R. 2018a. Carnivore conservation needs evidence-based livestock protection. *PLoS Biology*. 16(9):e2005577, available at <https://doi.org/10.1371/journal.pbio.2005577>; Eklund, A., López-Bao, J.V., Tourani, M., Chapron, G., Frank, J. 2017. Limited evidence on the effectiveness of interventions to reduce livestock predation by large carnivores. *Scientific Reports*. 7(1):2097, available at <https://www.nature.com/articles/s41598-017-02323-w>; Moreira-Arce, D., Ugarte, C.S., Zorondo-Rodríguez, F., Simonetti, J.A. 2018. Management tools to reduce carnivore-livestock conflicts: Current gap and future challenges. *Rangeland Ecology & Management*. 71(3):389–94, available at <https://doi.org/10.1016/j.rama.2018.02.005>; Santiago-Avila, F.J., Cornman, A.M., Treves, A. 2018. Killing wolves to prevent predation on livestock may protect one farm but harm neighbors. *PLoS One*. 13(12):e0209716, available at <https://doi.org/10.1371/journal.pone.0189729>; Bradley, E.H., Robinson, H.S., Bangs, E.E., Kunkel, K., Jimenez, M.D., Gude, J.A., Grimm, T. 2015. Effects of wolf removal on livestock depredation recurrence and wolf recovery in Montana, Idaho, and Wyoming. *Journal of Wildlife Management*. 79(8):1337–46, available at <https://doi.org/10.1002/jwmg.948>.

Forest Plan Management Direction: Petitioners request that the Forest Service require the following measures to be incorporated into forest plans during the forest plan development, revision, and/or amendment processes:

- Require the prompt removal and/or disposal of livestock carcasses such that a carcass will not attract carnivores. If carcass removal and/or disposal is not possible due to its location, require other remedies that will eliminate the attractant.
- When grizzly bear presence is known or likely, require that bear attractants such as livestock feed are stored in a manner that reduces the risk of attracting and habituating grizzly bears.
- Where carnivore presence is known or likely, require the use of guard animals or range riders, shepherds, or other forms of human presence, as appropriate for the type of livestock and that are trained and equipped to reduce carnivore-livestock conflict using approved nonlethal techniques.
- Limit grazing to open defensible spaces and prohibit livestock from grazing unattended by human range riders in remote, heavily treed areas.
- Prohibit the turnout of sick or injured livestock and require the prompt removal of sick and injured livestock to reduce the risk of attracting carnivores.
- If an active wolf den or rendezvous site is discovered on an allotment during the grazing season, require that livestock be moved or create a minimum one-mile buffer between grazing and those sites. Offer alternative grazing sites away from known wolf areas when possible.
- Prohibit the placement of mineral blocks or other livestock attractants within a one-mile radius of known wolf dens or rendezvous sites to minimize wolf-livestock interactions.
- Implement appropriate seasonal restrictions based on site-specific consideration, such as reducing temporal overlap between grazing activities and high-risk periods for depredations (*e.g.*, when wolves are rearing their offspring) and reduce livestock presence around high-risk areas like wolf dens and rendezvous sites to reduce disturbance to wolves and protect livestock.
- Require that permittees notify the Forest Service and state wildlife agencies as soon as practicable of any predation of livestock or conflicts between large carnivores and livestock.

- In the event of depredation, require that livestock are moved to another unit or another allotment. If alternative grazing sites are unavailable, require livestock to be moved off the national forest for the duration of the grazing season.
- All grazing permits shall be made subject to cancellation, suspension, or modification for any violation of Forest Service carnivore-livestock conflict mitigation regulations.

Site-Specific Management Direction: Petitioners request that the Forest Service require the following measures be considered during the site-specific NEPA process or FLPMA § 402(c)(2) reauthorization process⁶⁷ for renewing grazing permits for allotments where carnivore-livestock conflicts have occurred, or are likely to arise in the future, and that each corresponding AMP contain mandatory measures reflecting best management practices for the specific allotment:

- Adjust seasons of use to best avoid conflicts while also protecting sensitive resources. For instance, consider delaying livestock turnout until native ungulates are birthing their offspring and can provide an abundant and easy prey source for carnivores.
- Prohibit the turnout of young lambs, and calves under 200 pounds in weight, to minimize depredation potential.
- Prohibit allotment management activities by humans near active wolf den sites during the denning period to avoid human disturbance of the site.
- At the end of each grazing season, agency range staff will document compliance with all applicable carnivore-livestock management directives.

The Forest Service's strategy should include procedures to ensure that the best available science around carnivore-livestock conflict mitigation is incorporated into its conflict reduction framework. The Forest Service should likewise require timely and thorough monitoring and documentation of carnivore-livestock conflicts across NFS lands and use this data to measure conflict resolution success and to target subsequent management and mitigation efforts.

CONCLUSION

In sum, the Forest Service has both the legal authority and the responsibility to create a proactive, science-based, national grazing management framework that fosters coexistence

⁶⁷ In 2014, Congress amended FLPMA § 402(c)(2) to allow the Forest Service to re-authorize expired grazing permits or leases without changing previous terms and conditions until new NEPA analysis is complete. *See* Grazing Improvement Act, S. REP. NO. 113-166, § 2 (2014).

between livestock and carnivores. As native carnivore populations expand throughout their historic ranges, they need public lands more than ever; yet, nearly 40% NFS lands in the lower-48 states are available for livestock grazing, including within prime habitat for these species and often without coexistence measures in place. Without Forest Service leadership, livestock conflicts—and the predictable and largely inevitable result of killing native carnivores—will continue. We strongly urge the Forest Service to establish a national framework requiring conflict avoidance measures, both through nonlethal management and animal husbandry techniques, on NFS lands where livestock-carnivore conflicts are a present or potential concern.

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