



Public Comment on Draft Colorado Wolf Restoration and Management Plan

**Property and Environment Research Center
Bozeman, Montana**

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Key Points

- **To effectively restore wolves to the state, Colorado should adopt policies making wolves an asset, rather than a liability, to the ranchers and other private landowners that provide habitat**
- **Colorado should help ranchers minimize conflicts between wolves and livestock**
- **When such conflicts occur, ranchers should be fairly compensated for the costs they bear**
- **But the state should go beyond merely covering losses by supporting markets and incentives that reward rural landowners and communities for living among thriving wolf populations**

Introduction

The Property and Environment Research Center (PERC) respectfully submits this comment to the Colorado Parks and Wildlife Commission regarding its draft wolf restoration and management plan. PERC supports the commission's interest and efforts to mitigate the costs wolves may impose on rural landowners and communities.

PERC is the national leader in market solutions for conservation, with over 40 years of research and a network of respected scholars and practitioners. Through research, law and policy, and innovative field conservation programs, PERC explores how aligning incentives for environmental stewardship produces sustainable outcomes for land, water, and wildlife. Founded in 1980, PERC is nonprofit, nonpartisan, and proudly based in Bozeman, Montana. PERC and its affiliated scholars have produced extensive research on the ways markets and incentives can be used to promote coexistence among ranchers, wolves, and other wildlife.¹

The history of wildlife protection in North America is a story of restoring species as much as it is conserving them. Many species now considered common, including elk, deer, and wood ducks, were once at the brink of extinction due to a combination of overhunting and habitat loss. Thanks to the concerted

¹ Myers, T. June 2020. Wolves in Washington State: Managing the Final Steps to Recovery and Post Recovery. Property and Environment Research Center, Bozeman, MT and Washington Policy Center, Spokane, WA. and Tilt, W. July 2020. Elk in Paradise: Conserving Migratory Wildlife and Working Lands in Montana's Paradise Valley. Property and Environment Research Center. Bozeman, MT. and Semcer, C.E.. 2021. Securing A Future For Wolves in the West: Addressing the Financial Liability, Creating an Economic Asset. PERC Reports 40(2).

efforts of conservationists who established a system of wildlife conservation laws and institutions, collectively known as the North American Model of Wildlife Conservation, these and other species have returned to relative abundance.² Today, the wolf is following in their footsteps.

Wolf restoration in the West began in 1994 when 41 wolves were reintroduced to their former range in Yellowstone National Park. They were followed a year later by an additional 15 wolves released into the wildlands of Central Idaho. Three years later, 11 wolves of the Mexican subspecies were reintroduced to national forest lands in Arizona.

From these relatively humble beginnings, the wolf population across western states now numbers more than 3,000 animals.³ Most of these wolves are found in the states surrounding the original reintroduction sites. Individual wolves are dispersing, however, with breeding populations now being found as far away as California.

Wolves have also been dispersing into Colorado with probable sightings dating back to 2004 and the first breeding pair being confirmed in 2021.⁴ The presence of a breeding pair, however, does not mean that the return of the wolf to Colorado is certain. For wolves to become established in Colorado, the pups born last year will need to avoid inbreeding and that will require creating opportunities for them to mate with wolves from different parents.

The wolves that pioneered a new home in Colorado and are raising a family there started out in Wyoming. To reach Colorado, wolves encounter a variety of challenges. The path south crosses Wyoming's "predator zone" where anyone can kill a wolf, by any means, at any time of the year.⁵ In 2021, 38 dispersing wolves were killed in this zone.⁶ Wolves must also cross a busy interstate, I-70, where wolves have died after being hit by vehicles in the past.⁷

The challenges faced by wolves mean they need a helping hand if they are to establish themselves in Colorado. In 2020, Colorado voters approved Proposition 114, which directs the Colorado Parks and Wildlife Commission to develop the plan to reintroduce and manage wolves.

The return of wolves to Colorado will create benefits and impose costs. The draft plan recognizes this. Benefits may include a reduced prevalence of Chronic Wasting Disease, reduced competition for forage

² Organ, J.F., V. Geist, S.P. Mahoney, S. Williams, P.R. Krausman, G.R. Batcheller, T.A. Decker, R. Carmichael, P. Nanjappa, R. Regan, R.A. Medellin, R. Cantu, R.E. McCabe, S. Craven, G.M. Vecellio, and D.J. Decker. 2012. The North American Model of Wildlife Conservation. The Wildlife Society Technical Review 12-04. The Wildlife Society, Bethesda, Maryland, USA.

³ Wildlife Management Institute. 2021. Update on Western Gray Wolves. Outdoor News Bulletin. 75(7).

⁴ Colorado Parks and Wildlife. Wolf Management. Accessible at <https://cpw.state.co.us/learn/Pages/CON-Wolf-Management.aspx#:~:text=A%20male%20wolf's%20presence%20was,fitted%20with%20a%20GPS%20collar>.

⁵ Wyoming Game and Fish. 2011. Wolf Grey Management Plan. Accessible at https://wgfd.wyo.gov/WGFD/media/content/PDF/Wildlife/Large%20Carnivore/WYWOLF_MANAGEMENT_PLAN_FINAL.pdf

⁶ Davis, M. May 12, 2022. Wolves Faring Well in Wyoming. Powell Tribune.

⁷ Stebbins, J. July 7, 2004. Dead Wolf Found Near I-70 Came From Yellowstone. Summit Daily.

between livestock and other ungulates, and increased wildlife tourism opportunities.⁸

The costs of wolf restoration are certain to include the occasional loss of livestock and other economic impacts on ranchers. In 2021, wolves were confirmed to have killed 50 cattle and 53 sheep in Wyoming.⁹ That same year, wolves killed 67 head of cattle and 29 sheep in Montana while 127 head of cattle were killed across Arizona and New Mexico.¹⁰ While programs exist to financially compensate ranchers for these losses, the compensation is often not enough to encourage tolerance.

Private ranches support a variety of wildlife, as well as livestock. Species associated with the grasslands that characterize the Western Slope's ranches include Gunnison's prairie dog and the Gunnison sage grouse, a species listed as "threatened" under the Endangered Species Act. It is important that the costs accompanying wolf reintroduction not compromise the financial viability of large, working ranchers and increase the risk that they are sold for development. This means getting the incentives right and minimizing the loss of livestock and other negative impacts on ranchers' bottom line is central to the success of Colorado's wolf restoration program. At the very least, the people who live alongside wolves should be able to do so without fear of economic ruin. Ideally, enthusiasm should be built for the wolves' return.

To do this, the Colorado Parks and Wildlife Commission should do the following:

I. Help ranchers minimize conflicts between wolves and livestock

The surest way to lighten the load borne by ranchers following wolves' return is to help ranchers avoid conflicts and losses to wolves. There are well-established practices to achieve this, including the use of fladry, guard dogs, hazing, and range riders—a steady presence of cowboys who keep cattle calm and disrupt wolves hunting patterns.¹¹ There are also additional husbandry practices, such as using portable electric fences that have been shown to be effective in reducing the loss of livestock to wolves.¹²

The commission has already shown a commitment to conflict avoidance via the Colorado Parks and Wildlife Conflict Minimization Program. Under this program, Colorado Parks and Wildlife staff work with stakeholders, including federal agency counterparts, conservation organizations, and livestock producer groups, to evaluate methods to minimize wolf-livestock conflicts. Under the draft plan, it will

⁸ See e.g. Weiss, A.E., Kroeger, T., Haney, J.C., and N. Fascione. 2007. Social and Ecological Benefits of Restored Wolf Populations. Transactions of the 72nd North American Wildlife and Natural Resources Conference. Wildlife Management Institute. Washington, DC.

⁹Lachance, B. April 25, 2022. Wyoming Game and Fish Reports 300 + Wolves Across 40 Packs in 2021. Oil City News.

¹⁰ Montana Fish, Wildlife and Parks. 2021. Montana Gray Wolf Program 2021 Report. Accessible at <https://fwp.mt.gov/binaries/content/assets/fwp/conservation/wolf/final-draft-2021-wolf-report-7.28.pdf>

¹¹ Washington Department of Fish and Wildlife. Wolf-Livestock Conflict Prevention. Accessible at <https://wdfw.wa.gov/species-habitats/at-risk/species-recovery/gray-wolf/conflict-prevention#:~:text=Pens%2C%20fencing%2C%20and%20fladry&text=This%20is%20usually%20in%20early,electric%20fencing%20is%20more%20effective.>

¹²Bruns, A., Waltert, M., & Khorozyan, I. (2020). The effectiveness of livestock protection measures against wolves (*Canis lupus*) and implications for their co-existence with humans. *Global Ecology and Conservation*, 21, e00868.

also provide ranchers with electrified fladry and hazing devices on an undefined, temporary basis.

Conflict avoidance has a price, though. For example, installing an electrified fladry system can cost almost \$5,000 per mile.¹³ Hiring a range rider can cost between \$15,000 and \$20,000 per grazing season.¹⁴ As wolf numbers grow in Colorado, the probability of wolf-livestock conflicts is likely to increase. Commensurate with this increase will be the need for a more robust and better-funded Wildlife Conflict Minimization Program. Moreover, expecting ranchers to absorb any of the costs of avoiding conflicts with wolves can have the same negative impacts on ranchers' bottom line as wolf depredation.

The commission should not expect ranchers to bear the costs of avoiding conflicts with wolves. Ranchers should be provided with the means and equipment to practice conflict avoidance on a permanent rather than a temporary basis. This will require increased funding for the conflict minimization program that, as the draft plan notes, can be raised from supporters of wolf restoration.

The commission should also look beyond the conflict minimization program's obvious stakeholders and down the supply chain fed by Colorado's ranchers. Meat packers, grocery chains, restaurant chains, and their investors all have a financial interest in keeping Colorado's ranchers' ranching. Because of the carbon stored in grasslands so does the carbon credit sector. The commission should engage with these potential partners to tap this interest to support wolf recovery by minimizing its impacts on Colorado's ranchers. Such a public-private partnership can support a more secure supply chain of American beef and lamb while also producing reputational dividends for the private sector partners. Private sector partners may also be able to leverage the partnership to market value-added products such as "wolf-friendly" steaks and tap into the growing market for sustainably and ethically produced foods.¹⁵

II. When conflicts with wolves occur, ranchers should be fairly compensated for the costs they bear

Wolves can dine on ewes and stress cows, causing them to abort and create conflicts with ranchers. Resolving these kinds of conflicts is critical to ensuring wolves have a future in Colorado. One way to resolve conflicts with wolves is for Colorado to financially compensate ranchers for their losses.

Wildlife managers have used livestock loss compensation programs as a tool to resolve conflicts as wolves have returned across the West. The first such program was financed by a private conservation organization, Defenders of Wildlife, to support the reintroduction of wolves to the Greater Yellowstone Ecosystem in 1995.¹⁶ This program reimbursed livestock producers up to 100 percent of the fair market value, up to \$3,000, of livestock lost to wolves, where those losses could be certified by a biologist. The program was funded entirely by private donations. Operating from 1995 until 2009, it paid out more than

¹³ 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), 708-714.

¹⁴ Kramer, B. Range Riders Help Deter Wolves. *The Spokesman Review*. Accessible at <http://www.timberwolfinformation.org/wa-range-riders-help-ranchers-deter-wolves/>

¹⁵ Bogezi, C., Van Eeden, L. M., Wirsing, A., & Marzluff, J. (2019). Predator-friendly beef certification as an economic strategy to promote coexistence between ranchers and wolves. *Frontiers in Ecology and Evolution*, 7, 476. and Credit Suisse, IUCN, Gordon and Betty Moore Foundation, Rockefeller Foundation, and McKinsey and Company. 2016. Conservation Finance From Niche to Mainstream: The Building of an Institutional Asset Class.

¹⁶ Fischer, H. 2001. Who Pays For Wolves. PERC Reports. 19(4).

half-a-million dollars to livestock producers to cover the loss of approximately 1,500 animals. Along the way, the program gave wolves enough breathing room to establish themselves in the Yellowstone region.

As wolves have increased in number and expanded their range, these compensation programs have been gradually taken over by the federal and state governments. The programs, while important, have also been imperfect. Key issues include payment formulas that do not account for the full costs associated with livestock lost to wolves as well as undercapitalization.

Compensation payments typically cover the fair market value of the lost animal. This often equates to either the cost to replace the animal or the earnings that would be made had the animal lived and been sold at market. Fair market valuation, however, may not compensate ranchers for all of the costs, such as time, they incur when livestock are killed by wolves.

This valuation approach also only covers the price of an animal to be sold when not all cattle and sheep go to market. Some animals are retained in a herd for breeding purposes. This is done because a herd's characteristics, such as its ability to gain and keep weight, are a product of genetics. These genetically derived characteristics influence how profitable a herd can be. While large proportions of herds are sold each year, a stock of "breeders" helps ensure a herd's genetics are maintained, or even improved, in order to maximize the profit a herd can produce. The financial impact of lost breeding stock is speculative and hard to quantify. For this reason, compensation schemes, to date, have not been able to help producers recoup the cost of lost genetics and their contributions to a herd's long-term economic productivity. None of this makes the losses any less real, however, for ranchers whose operations are compromised by lost breeding stock.¹⁷

Many compensation programs also only compensate for dead animals. As a result, they do not address other costs such as decreased animal weight that can be brought on by the stress caused by the presence of wolves. These decreases in weight ultimately cause ranchers to lose revenue as animals sell for lower prices at the market than they might have.

Finally, some compensation programs do not account for the transaction costs that come with seeking compensation. To obtain compensation, ranchers must invest time in documenting the loss of an animal to wolves and filling out paperwork. This time might otherwise be spent on other activities their business requires.

For this reason, Colorado's livestock loss compensation program should remit fair market value "plus." To effectively capture losses this could mean a compensation rate larger than the fair market value of a lost animal. Wyoming already does this, compensating ranchers seven times the value of each sheep or head of cattle lost to wolves. This higher rate of compensation is intended to cover the costs like weight loss and other intangible impacts of wolf presence.¹⁸

Doing so, however, will require compensation programs to have sufficient capitalization to grow

¹⁷ The draft plan recognizes such scenarios with its principle of recognizing different grazing characteristics in relation to the development of a compensation program.

¹⁸ Ex supra 1, Myers.

alongside wolf populations. As wolf populations increase, so will the probability of wolves preying on livestock. This risk is especially high in areas with low densities of native prey such as deer and elk.

Colorado has paid farmers and ranchers for damages caused by wildlife for almost a century. Currently, Colorado capitalizes its wolf compensation program via the Species Conservation Trust Fund, Colorado Nongame Conservation Fund, and the Wildlife Restoration Cash Fund. As wolf numbers grow and the need for livestock loss compensation increases, it is important for the future of all of Colorado's wildlife that new and expanded sources of funding be found.

To prevent this, Colorado should explore opportunities for public-private partnerships to compensate producers for livestock losses. Such partnerships could take the form of the one launched in the Yellowstone region, with a private conservation organization raising the funds and administering them.

There may also be opportunities to tap into growing interest by businesses and investors to demonstrate environmental credentials and support the conservation of nature. This interest could lead to new kinds of public-private partnerships, such as a compensation fund backed partially or in whole by large agribusiness concerns, meat packers, and/or grocery chains with an interest in ensuring supplies of Colorado beef and lamb and looking to boost their environmental credentials. The ability to market businesses and products as "wolf friendly" would create an opportunity for the predominantly urban supporters of wolf restoration to use their purchasing power to support the return of wolves.

III. The state should go beyond merely covering losses by supporting markets and incentives that reward rural landowners and communities for living among thriving wolf populations

Even if ranchers are compensated for losses due to wolves and even if those losses are minimized, they will still be a source of conflict and are likely to enjoy little public support in rural Colorado.¹⁹ Perfectly designed and implemented conflict avoidance and compensation programs still position wolves as a potential financial liability for ranchers. If wolves are to have the support they need to thrive, they must be transformed into financial asset for the people who live alongside them.

One possible way to do this is to offer rural landowners cash payments and offer rural communities impact investments in exchange for wolf presence. For example, Defenders of Wildlife and state wildlife agencies in Arizona and New Mexico are currently piloting such a partnership. This program makes cash payments to landowners based on whether a landowner's grazing area overlaps with a known wolf territory; the number of wolf pups in the area that survive the year; the number of livestock exposed to wolves; and the extent to which the applicant has implemented voluntary wolf-livestock conflict avoidance measures. Bonuses are also awarded for each wolf pup.

Similar programs are also underway in Europe for lynx and wolverines and in Africa for lions.²⁰

¹⁹ Naughton-Treves, L., Grossberg, R., and A. Treves. 2003. Paying for Tolerance: Rural Citizen's Attitudes Toward Wolf Depredation and Compensation. *Conservation Biology*. 17 (6): 1500-1511.

²⁰ Zabel, A., & Holm-Müller, K. 2008. Conservation performance payments for carnivore conservation in Sweden. *Conservation biology*, 22(2), 247-251. and Dickman, A., Begg, C., Bhalla, S., Cotterill, A., Dolrenry, S., Hazzah, L.,

In the European example, rural communities are paid by the Swedish government for each lynx kitten or wolverine kit documented by researchers in areas adjacent to their communities. In the African examples, conservation groups provide payments to individuals and communities for each lion documented in an area and for maintaining stable lion populations.

Programs such as these create a cash incentive for landowners to tolerate and even desire higher wolf numbers and densities of wolves than they might otherwise. Unlike livestock loss compensation, which are necessarily limited to livestock producers, pay-for-presence programs also reward landowners who do not raise cattle or sheep for their stewardship of the habitat wolves need to thrive. This includes habitat for prey animals such as deer and elk.

Such programs could also be expanded to include the creation of community benefits via private impact investment. The funding of scholarships and other programs that help build the next generation of ranchers could be tied to the extent of wolf presence. Such opportunities are ripe for involvement by conservation organizations, foundations, and commercial interests seeking to tie their brand to wildlife conservation. To take advantage of the possibility of increased engagement in Colorado wolf restoration, the commission should convene stakeholders to share ideas, gather financial and other commitments, and launch a new initiative designed to position wolves as an asset for rural communities and landowners rather than a liability.

Conclusion

The restoration of the wolf to the Colorado Rockies will show the world that state wildlife agencies can take on even the hardest conservation challenges. It will stand alongside the restoration of elk, pronghorn, and other species in the North American Model of Wildlife Management's list of accomplishments. Restoring wolves to Colorado will not be easy. If the commission gets the incentives right, however, it will be easier. As Aldo Leopold noted, "conservation will ultimately boil down to rewarding the private landowner who conserves the public interest." That will be especially true here and it is why the commission should help ranchers avoid conflicts with wolves, compensate ranchers when wolves kill livestock, and build enthusiasm for wolf restoration by transforming the species from a liability into an asset.

& Macdonald, D. 6.9 Incentives for lion conservation and financial tools for co-existence. In 1st Meeting of Range States for the Joint CMS–CITES African Carnivore Initiative (ACI1) (p. 123).