

## IV. COEXISTENCE

### A. Human presence. Range riders and herders.

1. Increasing human presence is the most effective way to keep wolves away and prevent conflict. In Idaho at the Wood River Wolf Project, which started in 2008, 16,000 – 24,000 sheep graze on public lands every summer in Blaine County, Idaho. With wolves throughout the project area, by implementing a suite of non-lethal coexistence strategies, wolves coexist side by side with sheep with almost no conflict. On average, 4 sheep are lost per year to wolves. Since 2008 only one wolf was lethally removed by Wildlife Services.

**Wood River Wolf Project.** <https://www.woodriverwolfproject.org/>



Sheep herder at the Wood River Wolf Project. Photo credit: Wood River Wolf Project.

2. In Montana in the Blackfoot Valley from 2006-2015 range riders closely supervised wolves and livestock on about 800,000 acres that are annually grazed by 16,000-18,000 head of livestock. During that time wolf-caused depredations averaged 2.2 per year.

**Learning to Live with Wolves: Community-based Conservation in the Blackfoot Valley of Montana.**

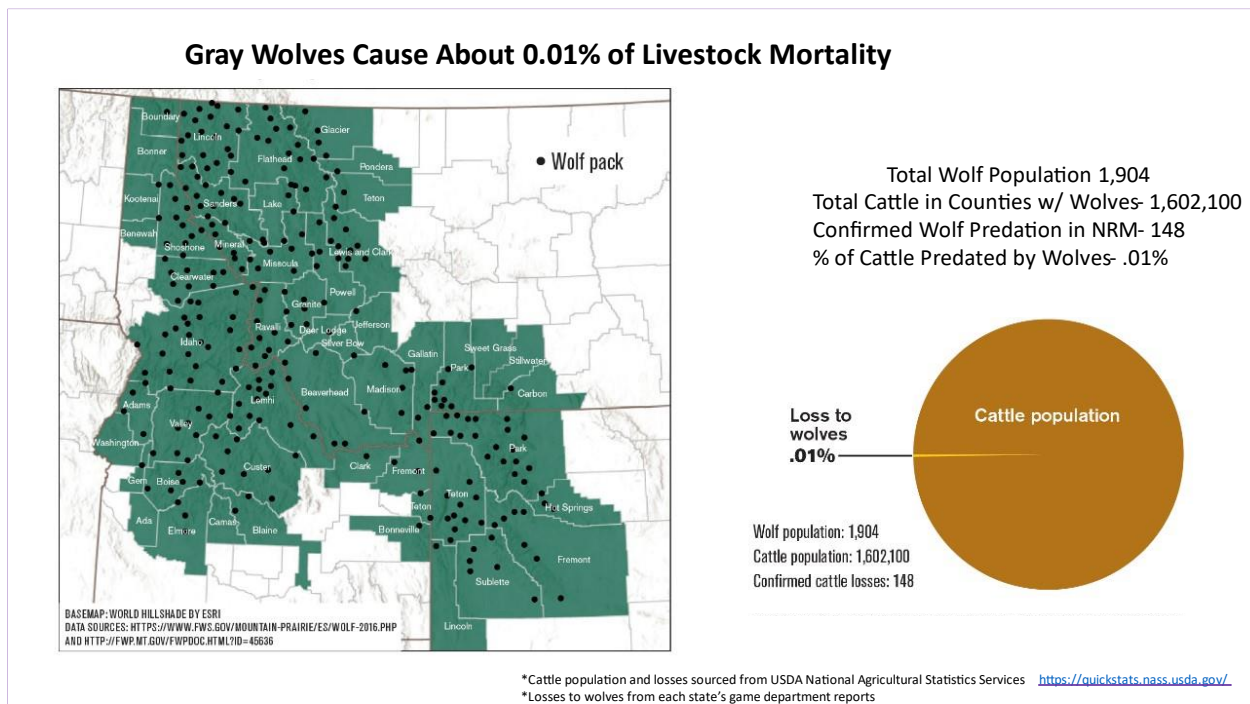
<https://digitalcommons.usu.edu/hwi/vol11/iss3/4/>

3. Additional benefits accrue from the presence of riders and herders. Range riders can readily observe and manage problems affecting the herd. Data from the U.S. Department of Agriculture show that farmers and ranchers lose nine times more cattle and sheep to health, weather, birthing and theft problems than to all carnivores combined. And, by keeping cattle on the move, riders prevent overgrazing. Grazing management that involves bunching livestock into a single cohesive herd, keeping that herd in a limited portion of the landscape at any one time and moving the herd across the landscape over time, rather than scattering the animals across the entire landscape, has the potential to improve land health, increase biodiversity and grazing capacity.

4. Coexisting with wildlife in Montana's Tom Miner Basin:

<https://y2y.net/blog/coexisting-with-wildlife-in-montanas-tom-miner-basin/>

5. Even without using coexistence strategies, livestock losses to wolves in the Northern Rockies, since wolves were reintroduced twenty-eight years ago, have been minuscule, and ranchers have been compensated for all confirmed losses. Ranching in the Northern Rocky Mountain states provides an example of what we could expect in Colorado. In the Northern Rockies, with a total of about 1,904 gray wolves and 1,600,000 cattle, wolves caused 148 cattle losses in 2016 (0.01 percent of livestock mortality).



Cattle population and losses sourced from USDA National Agricultural Statistics Services:

<https://quickstats.nass.usda.gov/>

Losses to wolves from each state's game department reports.

6. Consensus is emerging among ecologists that extirpated, depleted, and destabilized populations of large predators are negatively affecting the biodiversity and resilience of ecosystems. For 90 years, the American Society of Mammalogists (ASM) has made science-based challenges to widespread lethal control of native mammals, particularly by the United States federal government targeting carnivores in the western states.

**Carnivore conservation: shifting the paradigm from control to coexistence.**

<https://academic.oup.com/jmammal/article/98/1/1/2977253?login=false>

7. Research from the Carnivore Coexistence Lab at the University of Wisconsin Madison shows that killing gray wolves leads to three times more livestock attacks.

**Killing wolves to prevent predation on livestock may protect one farm but harm neighbors.**

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0189729>

**B. COEXISTENCE TECHNIQUES:** Proactive, non-lethal coexistence techniques effectively prevent livestock conflict loss. Such tools often focus on modifying wolf, livestock, and/or human behavior to minimize encounters.

- Wolves tend to avoid humans, so people accompanying livestock (e.g., herders, range riders, or scouts) can reduce encounters and also help manage herds proactively.
- Physical or psychological barriers or scare tactics can be established to try to ward off wolves and other predators. These include fencing, fladry (flagging), lights, and sound devices, which rely on novelty and are effective at least temporarily.
- Livestock guardian dogs also can deter wolves, although wolves also can kill guard dogs and thus finding the right breed and number of guard dogs is important.
- Modifying livestock management practices can help, particularly during calving or lambing when animals are most vulnerable.
- Grazing strategies can be altered to avoid wolves, for instance by moving livestock away from known wolf dens.
- Removal of carcasses of livestock that have died is an essential prevention strategy. Carcasses attract wolves and other predators.

1. **Non-lethal Coexistence strategies** save livestock and wolves. Numerous examples of ranchers successfully coexisting with wolves are found in the Northern Rocky Mountain states.

- Wood River Wolf Project: <https://www.woodriverwolfproject.org/>
- Blackfoot Challenge: <https://blackfootchallenge.org/wildlife/>
- Alderspring Ranch <https://modernfarmer.com/2023/06/wolves-western-ranchers-range/>
- Tom Miner Basin Association: <https://y2y.net/blog/coexisting-with-wildlife-in-montanas-tom-miner-basin/>
- Conservation Northwest: <https://conservationnw.org/our-work/wildlife/range-rider-pilot-project/>
- Oregon Department of Fish and Wildlife. Non-lethal measures to minimize wolf-livestock conflict. [https://www.dfw.state.or.us/wolves/non-lethal\\_methods.asp](https://www.dfw.state.or.us/wolves/non-lethal_methods.asp)

## 2. Coexistence Videos:

“Having a human, especially one on horseback, in and around a rancher’s cattle for the entire grazing season can lower wolf-cattle incidents. It helps calm cattle and disrupts wolves’ hunting patterns. This practice is called range riding.

- Watch range riders from Conservation Northwest in action in this video from High Country News: <https://youtu.be/BwEuEpaqNQO>
- Herding as a coexistence tool. <https://www.youtube.com/watch?v=4r5JgozPvGg>
- Range Riders work to keep both livestock and wolves out of harm’s way. <https://www.youtube.com/watch?v=pChIT1f4eCo>
- Ranger Rider: Film Trailer. <https://www.youtube.com/watch?app=desktop&v=znB5uDtKntU>
- Range Riding Part 1: What is Range Riding? <https://www.youtube.com/watch?v=TKoo6UGrXtQ>
- Carcass removal prevents livestock conflict. Disposing of a Cow Carcass. <https://www.youtube.com/watch?v=mLB92caezf0>



- Range rider at the Tom Miner Basin, Montana. Photo credit: Tom Miner Basin Association. Range Riders monitor cattle closely for sickness and injury, and remove these animals from the herd so they don't become targets for predation. They also monitor predator populations as well, including high concentrations of grizzly bears that may interact humans and livestock, and active wolf dens in the area.

**3. Wood River Wolf Project.** Non-lethal methods to *prevent* conflicts are more effective and economical than killing wolves. The Wood River Wolf Project promotes the coexistence of livestock and wolves by proactively using nonlethal measures to prevent depredation. Increasing human presence is the most effective way to keep wolves away. The scent and sounds of humans make the wolves wary. Each band of sheep has 1-2 herders that stay with the sheep 24/7. The herders are the first line of defense and use nonlethal tools.

**Adaptive use of nonlethal strategies for minimizing wolf–sheep conflict in Idaho.**

<https://www.researchgate.net/publication/313875763> Adaptive use of nonlethal strategies for minimizing Wolf-sheep conflict in Idaho



Increasing human presence is the most effective way to keep wolves away from livestock. Photo: By Carol Walker at the Wood River Wolf Project.

**4. Montanans successfully use non-lethal methods** to live with wolves and grizzly bears in the Blackfoot area of Montana. Results are encouraging. Confirmed livestock losses to wolves from 2006-2015 have been 2.2 confirmed depredations per year across nearly 50 ranches on about 3,240 km<sup>2</sup> that are annually grazed by 16,000-18,000 head of livestock.

**Learning to Live with Wolves: Community-based Conservation in the Blackfoot Valley of Montana.**

<https://digitalcommons.usu.edu/hwi/vol11/iss3/4/>

**5. Nonlethal methods of preventing depredation of livestock** by large carnivores are more effective, more defensible on ecological, legal, and wildlife-policy grounds, and more tolerated by society than lethal methods. Evidence as of 2011 led 23 prominent ecologists to conclude that the loss of apex predators was a major driver of destabilization and collapse of their native ecosystems, leading to pandemics, irruptions of invasive species, and lost ecosystem services

**Carnivore conservation: shifting the paradigm from control to coexistence.**

[https://www.researchgate.net/publication/312118535\\_Carnivore\\_conservation\\_Shifting\\_the\\_paradigm\\_from\\_control\\_to\\_coexistence](https://www.researchgate.net/publication/312118535_Carnivore_conservation_Shifting_the_paradigm_from_control_to_coexistence)

Guard Dogs such as Great Pyrenes and Akbash breeds are raised with the sheep to learn to be protective of them.  
Photo: By Phoebe Bean at the Wood River Wolf Project.



**D. KILLING WOLVES CAN WORSEN CONFLICT WITH LIVESTOCK.** Scientists have found that, contrary to what many people think, killing wolves does not always reduce attacks on livestock. Instead, lethally controlling wolves can actually make things worse and is not as effective as non-lethal coexistence strategies in preventing livestock loss. Further, killing wolves' results in the loss of their ecological benefits. Further, persecution by humans has contributed strongly to global endangerment of carnivores and the loss of their essential ecological role in maintaining healthy ecosystems.

1. Researchers at Washington State University found that killing wolves to keep them from preying on livestock is counter-productive. In other words, the killing of wolves to protect livestock can actually cause more sheep

and cattle deaths the following year. They found that the number of livestock depredated the following year after lethal wolf removal was positively, not negatively, associated with the number of wolves killed the previous year. The odds of livestock depredations increased 4% for sheep and 5–6% for cattle with increased wolf control - up until wolf mortality exceeded the mean intrinsic growth rate of wolves at 25% - a level that is not sustainable for wolf populations.

#### **Effects of Wolf Mortality on Livestock Depredations.**

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0113505>

2. Killing wolves can worsen conflicts with livestock by disrupting the stable social structures upon which wolves rely. If adult animals in the pack are killed, younger wolves will try to stay alive by finding easy prey.

**Heavily hunted wolves have higher stress and reproductive steroids than wolves with lower hunting pressure.** <https://wolfwatcher.org/wp-content/uploads/2016/10/Heavily-Hunted-Wolves-Bryan-et-al-2014-stress-in-wolves.pdf>

3. Lethal control and translocation have been shown to be less effective than non-lethal measures, such as deterrents like fladry guarding dogs, fencing, calving control and herding. In all cases, the use of non-lethal strategies reduced the relative risk of livestock damage by 50-100%.

**The effectiveness of livestock protection measures against wolves (*Canis lupus*) and implications for their co-existence with humans.**

<https://www.researchgate.net/publication/337713145> **The effectiveness of livestock protection measures against wolves *Canis lupus* and implications for their co-existence with humans**

4. There is very little evidence demonstrating the effectiveness of such lethal methods for controlling carnivores that prey on livestock. In fact, based on their review of the existing literature, researchers who conducted an analysis of scientific studies on lethal and non-lethal methods, found that non-lethal methods have been demonstrated to be more effective than lethal methods.

**Predator control should not be a shot in the dark.**

<https://esajournals.onlinelibrary.wiley.com/doi/abs/10.1002/fee.1312>

5. The death of a single wolf can impact the entire pack. The loss of a single breeding pack member can cause the dissolution of the pack. In most cases where a pack broke apart, the dissolution was preceded by a loss of an alpha (especially when the pack was small to begin with). In Denali National Park researchers found that out of 70 packs in Denali National Park, the death of an alpha was associated with 77% of packs that split up and that the pack was more likely to dissolve if it was the alpha female (mother) that died or if the pack was small.

**Impacts of breeder loss on social structure, reproduction and population growth in a social canid.**

<https://besjournals.onlinelibrary.wiley.com/doi/10.1111/1365-2656.12256/abstract;jsessionid=C09197875F869D2EB720C8E53DD4E2F5.f02t04>

6. Wolf' family structure is essential to their survival and ability to perform their ecological role as a keystone carnivore. A landmark study reveals that the loss of pack leaders is often highly disruptive and can cause pack instability, leading to several possible outcomes including the collapse of entire packs. This study reveals that like other highly social animals, including gorillas, elephants and dolphins, wolves live in family units where they interact and communicate extensively and cooperate in everything from play to survival. By revealing the importance of the wolf's family unit to a pack's survival this science demonstrates the need to consider pack-level dynamics and gray wolf biological processes when determining best management practices for wolves.

**Human-caused mortality triggers pack instability in gray wolves.**

<https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/fee.2597>

7. Lethally controlling populations of keystone species such as gray wolves and beaver, risks cascading negative consequences including impoverishment of biodiversity, loss of resilience to biotic invasions, destabilization of populations at lower trophic levels, and loss of many ecosystem services that benefit human society directly and indirectly. Further, lethal predator control is not effective at reducing depredation in the long term.

**License to Kill: Reforming Federal Wildlife Control to Restore Biodiversity and Ecosystem Function.**

[https://www.researchgate.net/publication/249007704\\_License\\_to\\_Kill\\_Reforming\\_Federal\\_Wildlife\\_Control\\_to\\_Restore\\_Biodiversity\\_and\\_Ecosystem\\_Function](https://www.researchgate.net/publication/249007704_License_to_Kill_Reforming_Federal_Wildlife_Control_to_Restore_Biodiversity_and_Ecosystem_Function)

8. To prevent illegal uses of natural resources, such as poaching endangered species, governments have advocated granting policy flexibility to local authorities by liberalizing culling or hunting of large carnivores. But, when the government allows the killing of a protected species, the perceived value of that species may decline; so liberalizing wolf culling may have sent a negative message about the value of wolves or acceptability of poaching and may thus promote wolf killing.

**Blood does not buy goodwill: Allowing culling increases poaching of a large carnivore.**

<https://royalsocietypublishing.org/doi/10.1098/rspb.2015.2939>

