

The Science of Grey Wolves



Grey wolves (*Canis lupus*) are slated to be reintroduced in Colorado by the end of 2023. Perceptions and attitudes towards wolves vary considerably by political and social identities. Some value wolves for their cultural and ecological benefits, while others worry about the potential threats to humans and livestock. This graphic addresses the science behind grey wolves.

History and Habitat



Grey wolves are native to Colorado, but have been eliminated from their historic range in the 1940s due to their perceived threats to humans and livestock.



In 2020, grey wolves were removed from the Endangered Species Act, but due to reintroduction efforts, it's estimated that about 6,000 wild wolves still live in the lower 48 states.



Experts believe that Colorado has considerable public land and a sufficient prey base to support wolf populations.

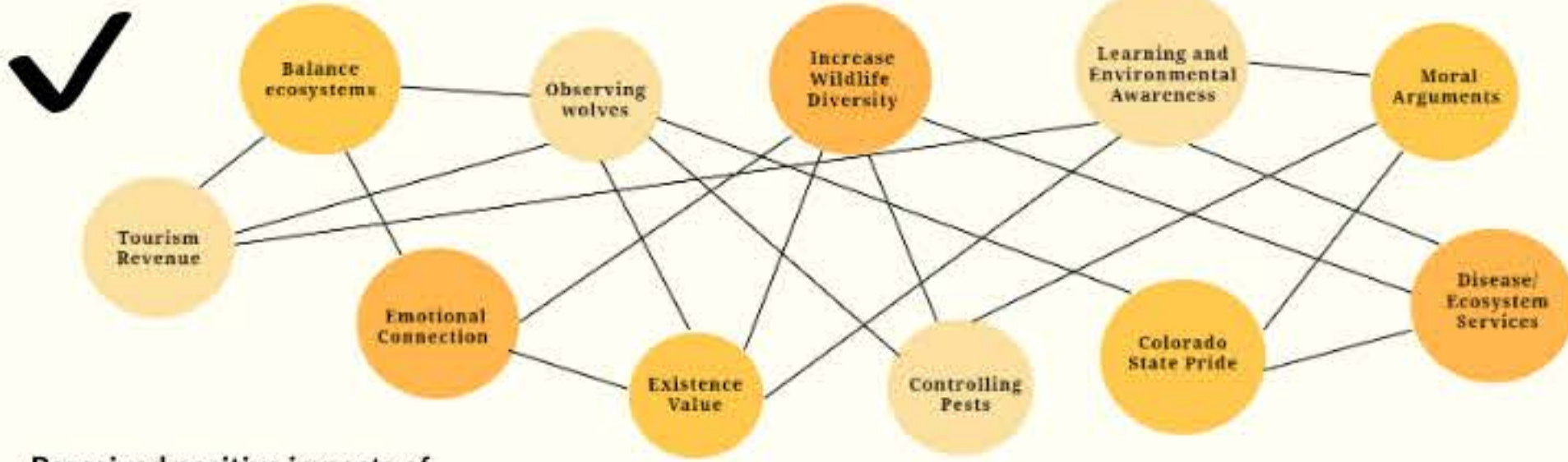
Proposition 114

In November 2020, the state of Colorado voted to approve Proposition 114. Under this proposition, the Colorado Parks and Wildlife Commission would be required to:

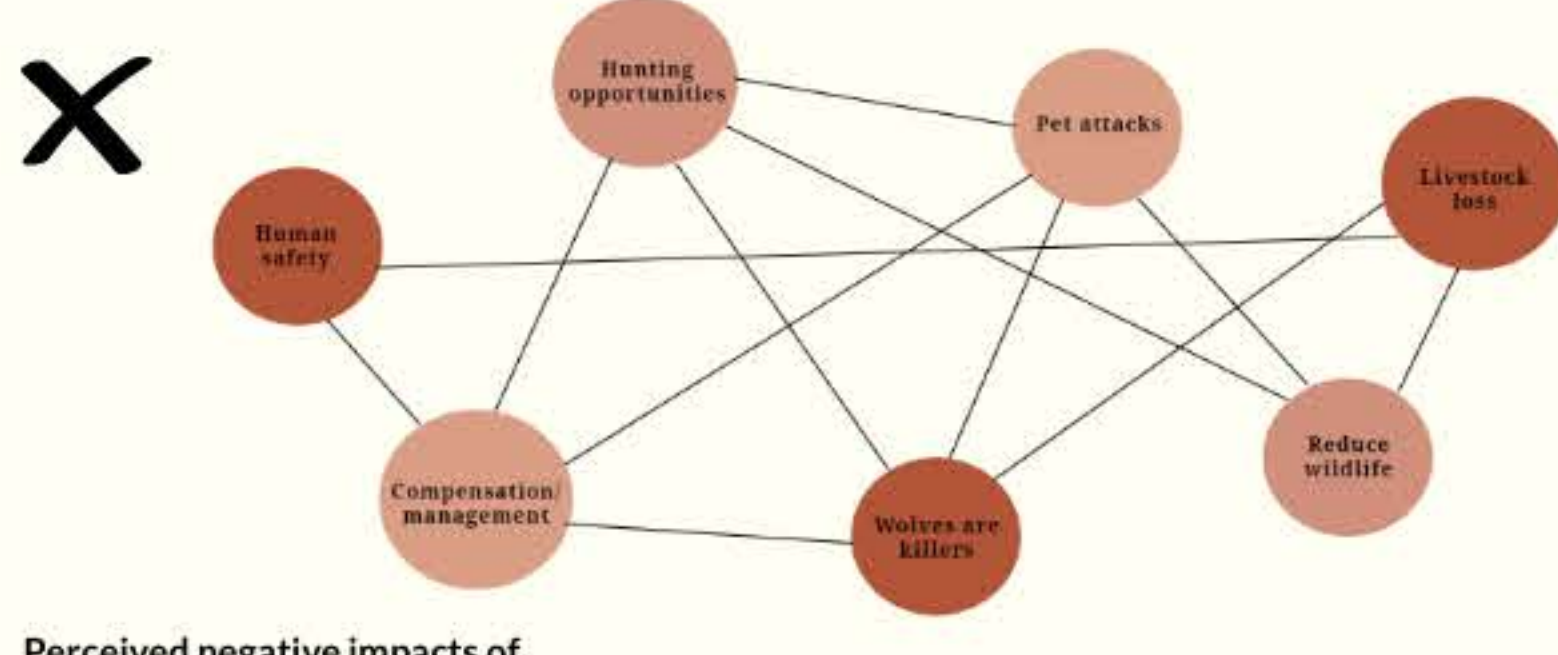
- Develop a plan to restore gray wolves in Colorado using the best scientific data available
- Take the steps necessary to begin reintroduction of wolves by December 31, 2023 on designated lands west of the Continental Divide
- Oversee gray wolf restoration and management
- Distribute state funds to assist livestock owners in preventing and resolving conflicts between wolves and livestock
- Distribute state funds to pay fair compensation to livestock owners for losses caused by wolves
- Not impose any restrictions on private landowners regarding land, water, or resource use

How Does the Public Perceive Wolves?

A 2014 survey of U.S. residents found 61% of respondents had positive attitudes towards wolves. However, these attitudes can vary significantly by experience with or proximity to wolves, stakeholder groups, and demographics (age, income, and urban/rural residence).



Perceived positive impacts of wolf reintroduction



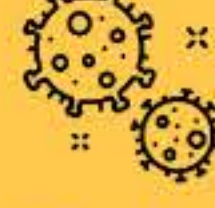
Perceived negative impacts of wolf reintroduction

Government agencies and private organizations offer a variety of programs to compensate producers for livestock lost to predators, including wolves. Defenders of Wildlife operated a trust to pay for livestock losses for nearly 25 years starting in 1987. Most states have created separate programs for wolves and receive federal grants to help with the cost. Wyoming paid about \$170,000 in 2018 for livestock killed or injured by wolves.

Ecological, Cultural, and Social Benefits of Wolves



Restore Balance to Ecosystems
Wolves can generate trophic cascades – ecological effects that ripple through an ecosystem. In places like Yellowstone National Park, wolves have likely contributed to willow and aspen recovery and overall habitat diversity by reducing overbrowsing by elk.



Disease and Pest Management
Chronic wasting disease (CWD) is a contagious and fatal neurological disease found in deer, elk, and moose in Colorado. Selective predation by wolves on sick and diseased animals may help limit CWD in big game.



Enhanced Tourism
Wolves provide opportunities for people to view, film, photograph, listen to, or otherwise experience wolves in their natural habitats. Tourists flock to Yellowstone National Park for a chance to see wolves.



Economic Gains from Hunting
Hunters spend money for travel, housing, food, and equipment, generating income for hotels, restaurants, and hunting guides. Wolf hunting is now allowed in much of the Northern Rocky Mountains - the sale of licenses for hunting and trapping wolves in Montana tops \$400,000 per year.



Cultural and Emotional Connection
Individuals and communities value wolves purely because they are "beautiful" or majestic, or carry significance for tribal cultures.



Moral Arguments
Other moral arguments for wolf reintroduction - it can help correct past wrongs; wolves should have the right to live where they used to; humans should learn to coexist with nature; and, preserving a species is the right thing to do.

Livestock and Hunting

In 2014, wolves were responsible for the deaths of

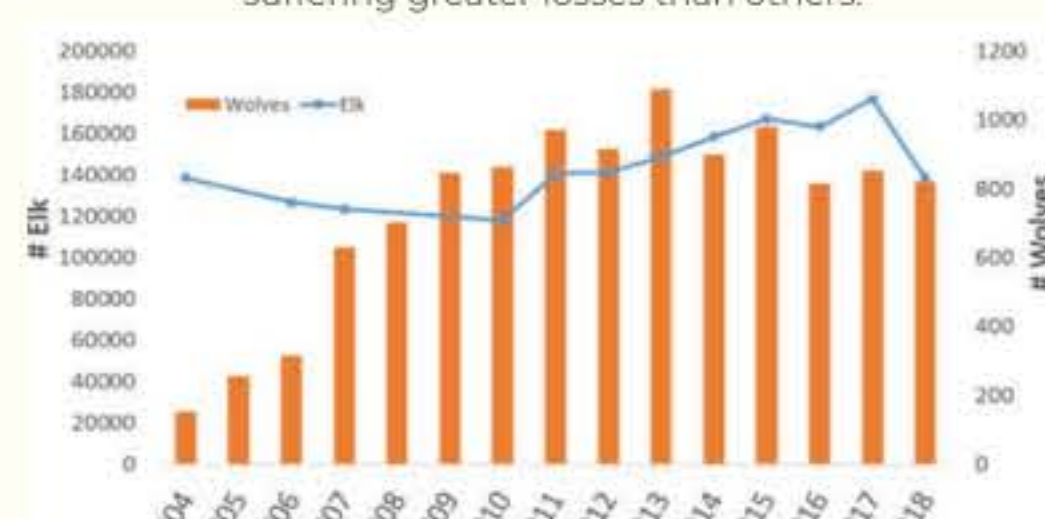
136 cattle & 114 sheep

in Montana, Wyoming, and Idaho combined.

Only **2** humans have been killed by wolves in the United States since **1900**.

Wolf depredation on cattle and sheep accounts for **less than 1%** of the annual gross income from industry-wide livestock operations in the Northern Rocky Mountains,

At a statewide level, wolves are unlikely to have a major impact on overall big game populations or hunting opportunities in Colorado. However, producers can suffer indirect losses such as stress, sickness, and reduced weight gain and pregnancy rates when wolves scare, chase, or attack livestock. These costs are unevenly distributed and localized, with some producers suffering greater losses than others.



Montana elk and wolf population sizes. Data compiled from Montana Fish, Wildlife & Parks

Strategies for Reducing Pet/Wolf Conflict



Avoidance of wolves is the best way to minimize conflict. If you hunt with dogs in wolf country, learn to recognize wolf sign such as scat, tracks, and howls.



For hikers in wolf country, dogs should be leashed or under strict voice control.



Bells or beepers on dogs might also help protect dogs and protect the wildlife that dogs might chase, disturb, or kill.

Management Strategies to Reduce Human/Carnivore Conflict



Regulated hunting of wolves can limit wolf populations and lethal removal in reaction to conflict, for example killing livestock, can be effective if targeted to the correct individuals. Some studies have suggested that lethal removal of wolves only temporarily reduces depredation and actually may eventually increase conflict.



Physical or psychological barriers or scare tactics can be established to try to ward off wolves. These include fencing, fladry (flagging), lights, and sound devices. Wolves also tend to avoid humans, so livestock guardian dogs and people accompanying livestock (e.g., herders, range riders, or scouts) can reduce encounters.

Public outreach is needed to share scientific findings regarding the potential impacts of wolves and convey a nuanced, accurate portrayal of the diversity of possible positive and negative impacts of wolf reintroduction in Colorado.



An intensive stakeholder engagement process that involves a diversity of potentially affected groups in collaborative decision-making is needed to address these concerns and reduce social and human-wildlife conflict.



SOURCES



THE CENTER FOR HUMAN-CARNIVORE COEXISTENCE

Niemiec, R., R.E.W. Berl, M. Gonzalez, T. Teel, C. Camara, M. Collins, J. Salerno. 2020. Public Perspectives and Media Reporting of Wolf Reintroduction in Colorado. *PeerJ*, 1–21. <https://doi.org/10.7717/peerj.9074>

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