



Wolves in the Rocky Mountains prey mainly on large, hoofed mammals (known as ungulates) such as deer, elk, moose, bison and bighorn sheep. Elk will most likely be the predominant prey species in Colorado, due to their high abundance in the state. Although, as opportunistic carnivores, wolves also eat smaller prey such as rabbits, hares, beaver, opossums, prairie dogs and other rodents. As apex predators, wolves are also a **keystone species** that have been an essential part of our western habitats and heritage for thousands of years. Keystone species are organisms that naturally play a greater role in maintaining their ecosystems (Figure 1).

Figure 1. Benefits Wolves Bring as a Keystone Species

The return of wolves can cause a trickle-down effect that biologists call a **trophic cascade**. This is when the removal or addition of a keystone species impacts far beyond their direct prey. Restoring predator populations often result in great benefits to the ecosystem's overall health and biodiversity.

Wolves can enhance prey populations and reduce ungulate winter mortality by culling weak and sick animals, leaving only the strongest to survive and reproduce.

Wolves can lead to decreased coyote populations, which benefits smaller prey and other mid-size carnivores, like foxes. This effect can help re-establish a balanced community of carnivores.

Leftovers from wolf kills serve as food for many scavenger species, like vultures and eagles.

The improved vegetation provides food and shelter for beavers, who then create dams that help keep rivers healthy and lessen the effects of drought.

Wolves keep grazers, like elk and deer, on the move. This prevents overgrazing and results in greater plant and insect biodiversity.

How Wolves Hunt

Wolves are intelligent, social and strategic. Unlike "ambush" predators that rely on the element of surprise, like cougars, wolves depend on teamwork and endurance to secure their next meal. When wolves hunt as a pack, it is a coordinated effort where each member has a special role while juveniles watch and learn. Rather than aiming for the biggest animal, as humans do, wolves are energy-efficient and prefer prey that will offer a high reward with a low risk of harm to themselves or pack mates. They do this by activating their senses to find signs of weakness which increases their odds of success. Understanding these behaviors can help reduce wolf-livestock conflicts.

Relationship Between Wolves and Elk

Elk and wolves evolved together, developing a complex relationship that keeps their shared habitat balanced and healthy. Elk herds fluctuate over time in response to changes in habitat, nutrition, disease, hunting pressure, predation, weather and a number of other factors. When wolves were eradicated from the western United States, elk increased dramatically (to unsustainable levels in some cases). As predators are reunited with their home range and the predator-prey relationship is restored, elk herds naturally change to meet what their habitat can reasonably support.



While wolves can impact specific herds, other factors, such as over-browsing, human development, vehicular traffic, motorized recreation, fire suppression, and disease are often the more likely culprits. Recent studies on Yellowstone elk have found that weather and hunter harvest affect elk declines more than wolf predation.

Colorado is home to the biggest elk population in the country at around 300,000 and plans to reintroduce 50 wolves over the course of 5 years. In contrast, Idaho, Montana and Wyoming combined are home to 2,700 wolves and more than 378,000 elk. Not only is this enough elk for both wolves and humans to hunt, but there are also more elk in each of those states today than there were before wolves were reintroduced in 1995. Nonetheless, some hunters report that it is more difficult to find elk since wolves have returned to the region, leading some to assume that elk numbers have significantly dropped.

After further investigation, researchers found that the wolf's hunting behavior of testing their prey for weakness can cause elk to linger less in open areas, move to higher altitudes, seek out more hidden areas, or move onto private property where landowners may not offer public access. Increased ATV use affects elk behavior in similar ways. These shifts mean that hunters and wildlife managers may need to adapt their strategies to accommodate the more savvy elk. More continuous elk movement also allows for important native plants, like willow and aspen, to recover from years of over-browsing and once again provide habitat for resident birds, fish, beaver and other creatures.

Minimizing Conflicts with Livestock

Wolves may prefer to hunt wild prey, but livestock can sometimes make for an easier hunt. It doesn't take much for a wolf to isolate a young calf or lone sheep, especially when left unguarded. However, based on the National Agriculture Statistics Service and state management reports, wolf depredations still account for less than 0.01% of livestock losses in the northern Rockies. Far more livestock are killed by disease, bad weather, birthing problems and other predators – even stray dogs – than by wolves. Despite this, minimizing interactions between wolves and livestock is a critical endeavor for wolf recovery. Defenders has been working hard with producers across the West to reduce and resolve conflicts since 1987. We continue to grow this work in Colorado by fostering community relationships and supporting long-term strategies that lower the producer's risk of predation.



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