

COLORADO PARKS & WILDLIFE

Wolf Resource Guide

HANDS-ON RESOURCE GUIDE TO REDUCE DEPREDATIONS



COLORADO
Department of Agriculture

cpw.state.co.us



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♥ All tools and techniques listed in this resource guide are recognized options for minimizing conflict with wolves. We recognize that not every option will work for every operation. For specific recommendations, work with your local district wildlife manager.

Acknowledgments

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**MONTANA FISH,
WILDLIFE & PARKS**



**Wildlife
Conservation
Society**



PEOPLE AND CARNIVORES

Introduction



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This Hands-on Resource Guide to Reduce Depredations is meant to be a useful introduction for ranchers and livestock owners to implement effective strategies to prevent wolf depredations.

The Colorado Parks and Wildlife (CPW) Commission has passed regulations that align with U.S. Fish and Wildlife Service guidelines and provide landowners with a wide variety of options and resources to minimize conflict and potential wolf depredation. This includes commonly accepted hazing techniques such as fladry (fencing), range riders, guard animals and scare devices.

Specific regulations are subject to change through approvals from the CPW Commission; the most recent regulations can be found at cpw.state.co.us/Documents/RulesRegs/Regulations/Ch10.pdf

Livestock owners concerned about wolves on their property should contact their local CPW office to work closely with our district wildlife managers on implementing the strategies listed in this guide.

Running livestock in wolf range is challenging. Cost-effective risk management can increase profitability. While there is no silver bullet, there are some proven techniques for reducing risk of wolf-livestock conflict.

The goal of this booklet is to outline different tools that may suit your operation. Your local wildlife agency or other organizations can offer additional help in evaluating and identifying options and may offer cost sharing, materials or labor to assist your efforts.

CONTACT LIST

Colorado Parks & Wildlife Area Offices

CPW offices are open Monday–Friday, 8am–5pm. For after-hours emergencies, contact the Colorado State Patrol at (303) 239-4501 or your local Sheriff’s Department.

Brush	(970) 842-6300
Colorado Springs	(719) 227-5200
Denver	(303) 291-7227
Durango	(970) 247-0855
Ft. Collins	(970) 472-4300
Glenwood Springs	(970) 947-2920
Grand Junction	(970) 255-6100
Gunnison	(970) 641-7060
Hot Sulphur Springs	(970) 725-6200
Lamar	(719) 336-6600
Littleton	(303) 791-1954
Meeker	(970) 878-6090
Monte Vista	(719) 587-6900
Montrose	(970) 252-6000
Pueblo	(719) 561-5300
Salida	(719) 530-5520
Steamboat Springs	(970) 870-3333

USDA Wildlife Services

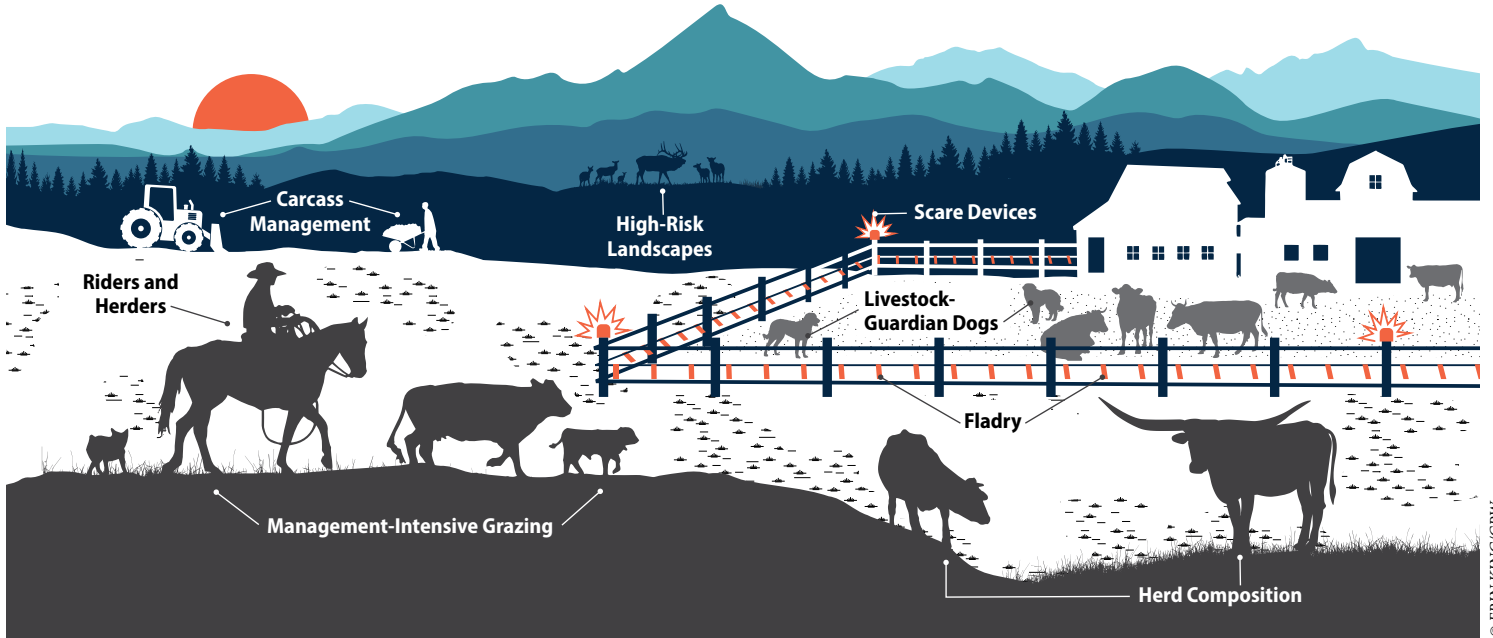
Golden, CO	(303) 328-9041
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Tool Guide



The presence of wolves in your area adds additional challenges to ranching. Some of these risk-management tools may be appropriate for use depending on your operation.

There are many resources available to further help you identify and implement the most appropriate strategies to reduce indirect impacts or loss. Consider contacting your local wildlife manager to learn more as they may have additional resources to assist you with cost-share programs, equipment and list of suppliers.



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MANAGEMENT TOOLS

Tool	Pasture Size	Livestock	When it works best
 Management-Intensive Grazing (MIG)	Any size pasture	Cattle, Horses, Sheep, Goats	Late Spring – Fall
 Livestock Guardian Dogs (LGDs)	Less than or equal to 1,000 acres	Cattle, Horses, Sheep, Goats	Anytime of Year
 Carcass Management	Any size operation	All Livestock	Spring and Fall
 Riders and Herders	Less than or equal to 640	All Livestock	Anytime of Year
 Fladry	Less than or equal to 240 acres	All Livestock	Anytime of Year
 Scare Devices	Less than or equal to 300 acres	All Livestock	Anytime of Year
 High-Risk Landscapes	Any size pasture	Cattle, Horses, Sheep, Goats	Times of High Wolf Use
 Herd Composition	Any size pasture	Cattle, Horses, Sheep, Goats, Mules	Anytime of Year

Management-Intensive Grazing (MIG)



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Management-Intensive Grazing (MIG), also known as mob grazing, uses higher stocking densities with frequent pasture changes.

WHERE IT WORKS BEST

- ▶ Any size pasture
- ▶ Cattle, sheep, goats and horses

WHEN IT WORKS

- ☀ Anytime of year: typically late spring through fall

CONSIDERATIONS

- Close proximity of livestock may increase risk of disease depending on the time of year MIG is used and the age of livestock.
- MIG takes advantage of stock's natural response to predators. Stock naturally bunch up in response to predators, making them less vulnerable and can reduce issues of weight loss.
- Steep terrain may make MIG challenging.



ADVANTAGES

- + Periodic herd management increases human presence, which may discourage wolves from frequenting pastures and aid in early detection of wolves.
- + Prompt doctoring of sick or injured stock minimizes high-risk animals.
- + Frequent pasture changes make the location of livestock less predictable for wolves.
- + MIG practices may benefit range health.



DISADVANTAGES

- ⊖ MIG requires more labor.
- ⊖ May require building and moving temporary electric fences.
- ⊖ Requires coordination with range conservationists.

Livestock Guardian Dogs (LGDs)



Livestock Guardian Dogs (LGDs) are specially bred and reared dogs that bond to and watch over livestock. They watch for potential threats and use escalating aggression to move wolves away.

WHERE IT WORKS BEST

- ▶ Up to 1,000-acre pastures
- ▶ Sheep, goats, horses and cattle

WHEN IT WORKS

- ☀ Anytime of year

CONSIDERATIONS

- It is important to match the right breed of LGD with your ranch needs:
- There are over 30 breeds of livestock guarding dogs.
- The right number and breed of LGDs for your ranch will depend on the size of operation and wolf activity.
- There are two different behaviors:
 - **Roamers:** LGD breeds that tend to be more oriented toward driving predators away. A good example of these breeds include: Anatolian, Komondor, Turkish Kangal and Akbash.
 - **Tenders:** LGD breeds that tend to stick closer to livestock and even attempt to gather up stock when confronted with threats. A good example of these breeds include: Tatra, Maremma and Pyrenees.
- Select the breed of livestock protection dog based on the predators the dog is likely to encounter
- Evaluate and assess how the dogs are working to make adjustments (number of dogs, behavior, breed) when needed. When dogs are in close proximity to wolf dens or homesites there is the potential for wolves to view LGD as territorial intruders. During these times, consider keeping LGD and livestock in alternative pastures or area of a grazing allotment or increase vigilance of herders, cowboys and range riders.
- Use an appropriate number of LGDs . Larger groups increase the dogs' safety and have greater potential to deter wolves.
- Dogs should be socialized to people for ease of vet care, moving dogs and encounters with public.
- Provide dogs with protective collars to reduce mortality in wolf conflicts.
- Introduce dogs before conflicts arise so they can learn their landscape and establish presence.
- When used in smaller pastures, you may need to train LGD to electric fences to discourage roaming onto roads or near nontolerant neighbors.
- Keep an emergency medical kit to treat injured livestock guardian dogs.

FOR MORE INFORMATION, CONTACT:

USDA U.S. Department of Agriculture
Wildlife Services Colorado Office • PH: (303) 328-9041



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ADVANTAGES

- + Dogs travel with the livestock.
- + Dogs provide around-the-clock vigilance.
- + Dogs' scent marking and barking behaviors signal an occupied territory to wolves.
- + Dogs alert people to trouble.



DISADVANTAGES

- ⊖ Dogs are not as effective with highly dispersed livestock.
- ⊖ Dogs can be viewed as a competitor especially in wolf territories and can be vulnerable to attack.
- ⊖ Dogs require additional expenses of food and vet care.
- ⊖ Risk of injury or death.
- ⊖ There is a potential for conflict to occur between guardian dogs and other public land users

Carcass Management



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Removing or disposing of attractants (carcasses) that may lure wolves into close proximity of livestock.

WHERE IT WORKS BEST

- ▶ Any size pasture
- ▶ All livestock

WHEN IT WORKS

- ☼ Anytime of year, typically spring and fall when death loss is greatest.

CONSIDERATIONS

- Consider burying or burning carcasses regularly.
- Reduce access to carcasses or carcass pits with woven wire, electric fence, fladry or a combination of these tools.
- Community level carcass-pickup programs with central disposal or composting sites have proven successful.
- Terrain, road access or deep snow may make removal difficult.



ADVANTAGES

- + Reduces potential conflicts by minimizing attractants.
- + Most ranches already spend time moving carcasses to a dead pile; the same amount of time can be devoted to staging carcasses for removal by a local contractor to either a carcass-composting facility or a landfill that accepts carcasses.



DISADVANTAGES

- ⊖ Burying carcasses can be difficult in freezing ground.
- ⊖ May require prior approval on leased land.

Range Riders and Herders



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Range riders and herders manage herd and range health, herd distribution and help in early detection of carnivore-livestock interactions.

WHERE IT WORKS BEST

- ▶ 640 acres or greater for cattle, sheep and goats

WHEN IT WORKS

- ☀ Anytime of year, most effectively done at dawn, dusk or at night.

CONSIDERATIONS

- Using riders and herders to reduce conflicts can be even more effective if used in conjunction with other tools, especially livestock guarding dogs and management-intensive grazing.
- Herders live with livestock and range riders spend periods of time with livestock.
- Depending on scale, a rider can cover a number of ranches and even a watershed.
- Range rider effectiveness depends on allotment size, terrain, distribution and visibility of livestock on the range.



ADVANTAGES

- + Allows for earlier detection and management of injured, sick or dead livestock.
- + Provides proactive management of livestock distribution in relation to range health as well as carnivore presence.
- + Human presence and nonlethal harassment deters wolves.
- + Improves information exchange on predator activity between the livestock producer and Colorado Parks and Wildlife.
- + Allows producer to know when preventative efforts need to be stepped up.



DISADVANTAGES

- ⊖ Limited mobility of a single rider.
- ⊖ Range riders and herders require more labor.

Fladry/Electrified Fladry



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Fladry (flagging interspersed on a single strand of twine) is a portable barrier strung around livestock pastures or holding areas.



The flagging triggers an innate fear and avoidance in wolves because it's a novel stimulus. By electrifying the fladry, a wolf's fear response is reinforced with an electric shock.

WHERE IT WORKS BEST

- ▶ Most calving pastures
- ▶ Typically with enclosures less than or equal 240 acres
- ▶ All livestock, most effective with cattle

WHEN IT WORKS

- ☀ Anytime of year

CONSIDERATIONS

- Resources available for loan through CPW and USDA Wildlife Services are limited.
- Electrification of fladry is not as effective in dry ground areas but including a ground-rod array can resolve this issue.
- Needs vigilance to keep it maintained and working properly. Wolves eventually habituate to fladry, so it should be moved or electrified to reduce or prevent habituation.
- Ideal for temporary use (45-90 days) on smaller pastures, i.e., calving pastures, horse pastures, sheep night pens and protecting dead piles.

FOR MORE INFORMATION



Contact your local Colorado Parks & Wildlife area office. Phone numbers listed on page 8.

ADVANTAGES

- + Fladry requires relatively small quantities of materials.
- + Deployed in a similar fashion to temporary non-flagged polywire electric fences.
- + Requires less planning than a permanent fence.
- + Can be stored when not needed.
- + Can be reused.
- + Especially advantageous when moving livestock frequently and supplies/labor are limited.

DISADVANTAGES

- ⊖ May require extra maintenance in heavy snow areas or areas of heavy vegetation growth (as this may result in grounding issues).
- ⊖ Areas with high wind may require more maintenance due to flags entangling with vegetation or wrapping around wire.
- ⊖ May require prior approval on leased land.

Scare Devices



Scare devices like sirens, strobe lights, pyrotechnics, and radios change wolf behavior by causing fear interactions.

WHERE IT WORKS BEST

- ▶ Small pastures/pens (less than 300 acres) or areas with frequent wolf use for short durations (2-3 months)
- ▶ All livestock

WHEN IT WORKS

- ☀ Anytime of year

CONSIDERATIONS

- Ideal for short duration in areas of frequent wolf use.
- Ideal when used in addition to other tools.
- Varying the scare devices can increase effectiveness.

FOR MORE INFORMATION



Contact your local Colorado Parks & Wildlife area office. Phone numbers listed on page 6.



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ADVANTAGES

- + Certain scare devices can alert people to the presence of an animal as well as scare animals away.
- + Simple and portable tool.
- + Can be used to discourage wolves from placing dens or homesites near livestock.



DISADVANTAGES

- ⊖ Wolves may habituate and quickly learn to ignore the device.
- ⊖ Scare devices may not be welcomed in areas of high human presence.
- ⊖ May be difficult to obtain due to federal regulations on (pyrotechnics), limited suppliers or manufacturers.



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High-risk Landscape Management



Risk of wolf/livestock encounters can be reduced by understanding and adjusting ranching practices during times and areas of high risk. Typically these are areas of high prey abundance (elk calving and wintering ground) and wolf activity (dens).

WHERE IT WORKS BEST

- ▶ Any size pasture
- ▶ Cattle, sheep, goats and horses

WHEN IT WORKS

- ☼ Anytime of year: typically in seasons of high ungulate densities or wolf use.

CONSIDERATIONS

- Evening/dusk feeding should start two weeks prior to encourage day calving when predators are less active.
- Plan calving to correspond with wild ungulate birth pulse (May-June), thus livestock are not the only vulnerable or high-risk prey on the landscape.
- To increase herd security, utilize high stocking rates for short duration (more animal days/acre) in pastures with good forage in high-use wolf travel paths.
- Delay turnout to pastures when wolves are denning or at homesites in or near pastures.
- Consider pastures with low ungulate activity and/or encourage hunting or hazing (check regulations) to disperse localized ungulates.
- Bring into corrals or barn at night.
- Night pen in an electric fence.
- Age class of livestock in areas of high carnivore presence



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ADVANTAGES

- + Lowers risk of depredation and vulnerability of livestock by avoiding high-risk landscapes.
- + Maintains use of forage and pastures in high-risk areas by altering the timing of use.



DISADVANTAGES

- ⊖ Potentially more labor intensive.
- ⊖ Requires changes to husbandry practices.
- ⊖ Needs approval and consultation with a range conservationist.
- ⊖ Some options may not be practical for on-range scenarios.

Herd Composition



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Mixing different age classes and breeds of livestock reduces vulnerability to predation.

WHERE IT WORKS BEST

- ▶ Any size pasture
- ▶ Sheep, cattle, goat, horses and mules

WHEN IT WORKS

- ✿ Anytime of year

CONSIDERATIONS

- Mix experienced older age classes with (younger) naïve livestock.
- Add a few aggressive or vigilant breeds to your herd.
- Retain and promote livestock with stronger maternal instincts.
- It is riskier to run yearlings or naïve livestock.
- Impacts to herd genetics.



ADVANTAGES

- + Stronger maternal instincts may reduce vulnerability of young.
- + Experienced animals are less likely to flee and more likely to stand their ground, making them difficult for wolves to attack.
- + Experienced animals may avoid areas of high predator presence and influence other stock to do the same.



DISADVANTAGES

- ⊖ Retaining older, experienced stock primarily for protective purposes may impact profitability.
- ⊖ Sorting different classes or breeds for shipping marketing may be an additional chore/cost.
- ⊖ Horned cattle have associated risks to handlers and dogs.



Colorado Parks & Wildlife
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(303) 297-1192 • cpw.state.co.us