



WOLVES ON THE LANDSCAPE

A Hands-on Resource Guide to Reduce Depredations

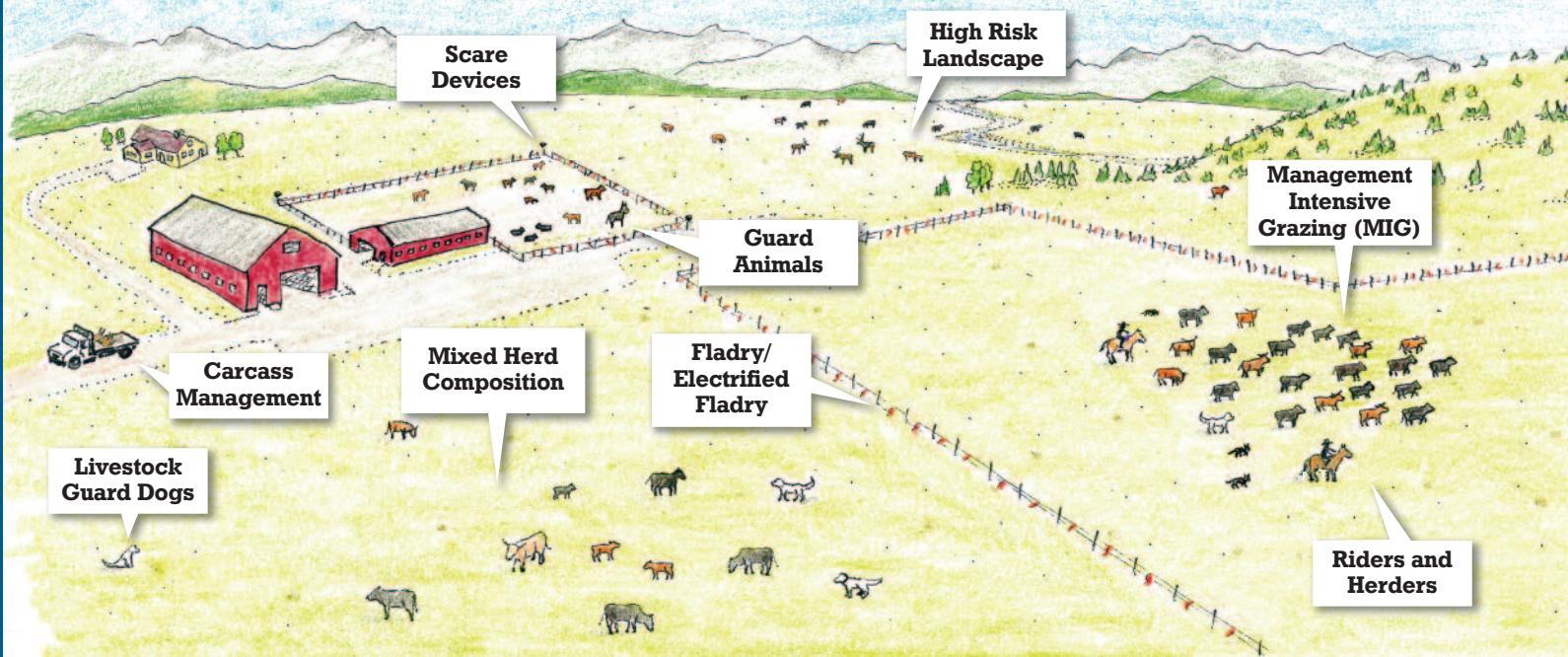
Acknowledgements

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Visual 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 brochure 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.

- **Management Intensive Grazing (MIG)**
- **Livestock Guard Dogs**
- **Livestock Guarding Donkeys**
- **Carcass Management**
- **Riders and Herders**
- **Fladry/Electrified Fladry**
- **Scare Devices**
- **Managing Livestock on High Risk Landscapes**
- **Herd Composition**

Management Intensive Grazing



Disadvantages:

- ▶ MiG requires more labor.
- ▶ May require building and moving temporary electric fence.

Considerations:

- ▶ Close proximity of cattle 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.

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:

- ▶ Yearlong: typically late spring through fall

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 benefit range health.



Livestock Guarding Dogs



Livestock Guarding Dogs (LGD) 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:

Yearlong

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.

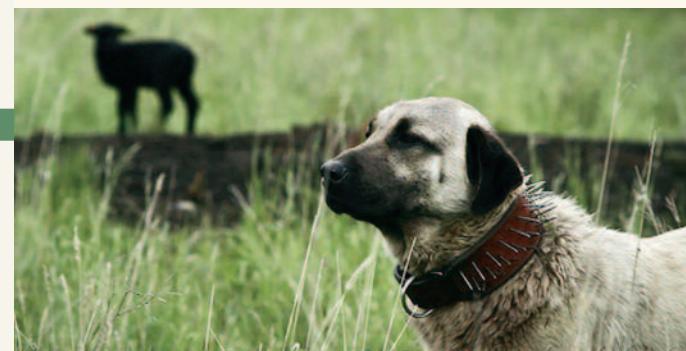
Disadvantages:

- ▶ 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.

Considerations:

It is important to match the right breed of Livestock Guard Dogs (LGD) with your ranch needs:

- ▶ There are over 30 breeds of livestock guard 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 your LGD for intellect instead of aggression.
- ▶ Evaluate and assess how the dogs are working to make adjustments (# 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 alternate pastures or increase vigilance of riders.
- ▶ Use at least 3 dogs. 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 non-tolerant neighbors.



Livestock Guarding Donkeys



Donkeys watch over livestock, look for potential threats and use escalating aggression to move predators away.

Where It Works Best:

Up to 1,000 acre pastures

Sheep, goats, horses, and cattle

When It Works:

Yearlong

Advantages:

- ▶ Travel with the livestock.
- ▶ Provide around the clock vigilance.
- ▶ No extra feeding needed, forage with livestock.
- ▶ Low cost, minor maintenance.
- ▶ Provide an alert presence.
- ▶ Not prone to wandering.
- ▶ Long life expectancy.



Disadvantages:

- ▶ Too many donkeys in one pasture may lead to congregating only with each other rather than displaying protective behaviors.
- ▶ Are not as effective in larger dispersed herds.

Considerations:

- ▶ Consider Jennies rather than Jacks.
- ▶ Use larger donkey breeds ex. mammoth donkeys.
- ▶ Introduce young donkeys for at least 1-2 weeks to allow bonding with livestock.
- ▶ Donkeys can be aggressive toward dogs, so initially limit and supervise their interaction with ranch dogs. Dogs will learn to work around donkeys.



USDA

Contact FWP wolf specialists at fwp.mt.gov

Carcass Management



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



Carcass composting facility in Montana.

Where It Works Best:

Any size pasture

All livestock including poultry

When It Works:

Yearlong, typically spring and fall when death loss is greatest.

Advantages:

- ▶ Reduces potential conflicts by minimizing attractants.
- ▶ Most ranches already spend time moving carcasses to a deadpile; 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.
- ▶ Burying carcasses where grizzly bears are present is not as effective as removing carcasses from the property.

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.

Range Riders and Herders



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

Cattle, sheep and goats

When It Works:

Yearlong

Advantages:

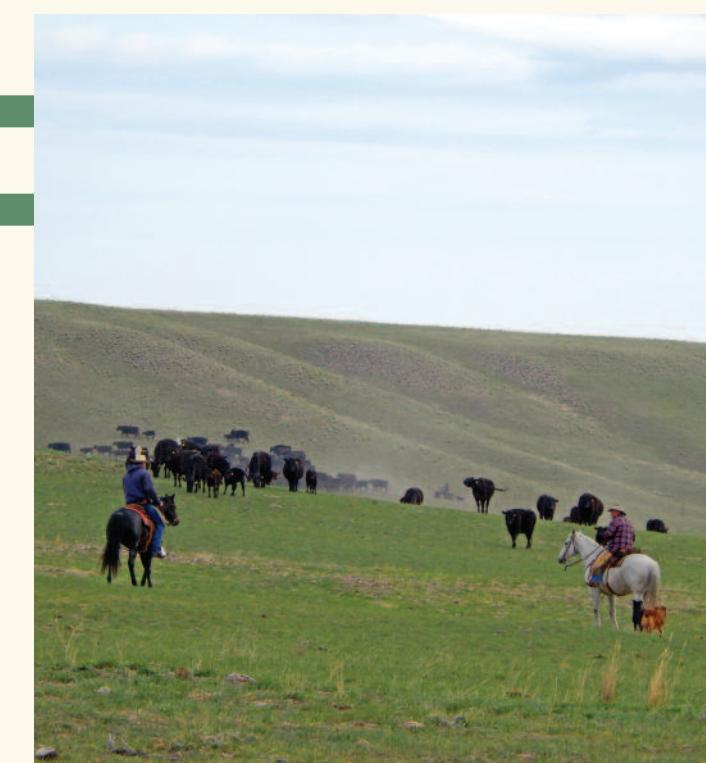
- ▶ Allows for earlier detection and management of injured, sick, or dead livestock.
- ▶ Provides proactive management of livestock distribution in relation to range health as well as carnivore presence.
- ▶ Human presence and non-lethal harassment deters wolves.
- ▶ Improves information exchange on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

Disadvantages:

- ▶ Limited mobility of a single rider.

Considerations:

- ▶ Using riders and herders to reduce conflicts can be even more effective if used in conjunction with other tools, especially livestock guard 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, and distribution and visibility of livestock on the range.



Fladry/Electrified Fladry



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 is a novel stimulus. By electrifying the fladry, a wolf's fear response is reinforced with an electric shock.

Where It Works Best:

Any size pasture, typically with enclosures < 640 acres (1 mile per side)

All livestock, including poultry

When It Works:

Yearlong

Advantages:

- ▶ Fladry requires relatively small quantities of materials.
- ▶ Easily transported, laid out, and erected.
- ▶ 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.

Considerations:

- ▶ Fladry equipment has limited availability, conservation groups and wildlife agencies may have supplies available for loan.
- ▶ Electrification of fladry is not as effective in dry ground areas but including an earth-return-wire (AKA groundwire) 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 smaller pastures (calving pastures, horse pastures, sheep night pens, and protecting dead-pits).



Scare Devices



Scare devices like motion or radio activated (MAG/RAG) boxes, sirens, strobe lights, pyrotechnics, scarecrows, and radios change wolf behavior by causing fear.

Where It Works Best:

Small pastures/pens (<60 acres) or areas with frequent wolf use for short durations (2-3 months)

When It Works:

Yearlong

All livestock, including poultry

Advantages:

- ▶ Certain scare devices (sirens, lights, MAG/RAG boxes) can alert people to the presence of an animal as well as scare animals away.
- ▶ Relatively low cost.
- ▶ 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 (pyrotechnics), limited suppliers or manufacturers.

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.
- ▶ RAG boxes require radio collars and only work if a radio-collared wolf is present.
- ▶ MAG boxes may be more appropriate as they are not affected by steep rocky terrain like RAG boxes are. MAG boxes can be triggered by any motion.



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).

Disadvantages:

- ▶ Potentially more labor intensive.
- ▶ Requires changes to husbandry practices.

Considerations:

- ▶ Evening/dusk feeding should start 2 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.

Where It Works Best:

Any size pasture

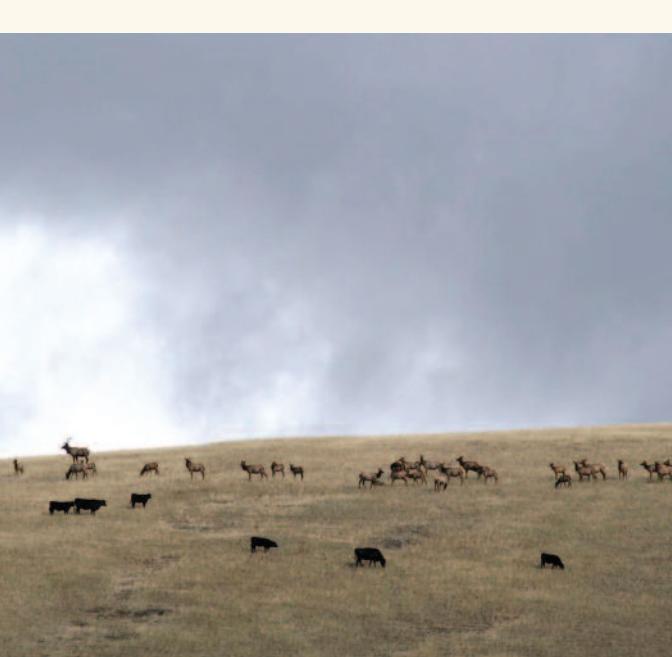
Cattle, sheep, goats, and horses

When It Works:

Yearlong: typically in seasons of high ungulate densities or wolf use.

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.



Herd Composition



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

Disadvantages:

- ▶ Retaining older, experienced stock primarily for protective purposes may impact profitability.
- ▶ Sorting different classes or breeds for shipping/marketing may be an additive chore/cost.
- ▶ Horned cattle have associated risks to handlers and dogs.
- ▶ Handling younger animals may be more difficult with protective mothers.
- ▶ Classes and breeds may self-segregate, operating as independent herds within in the same pasture.

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.

Where It Works Best:

Any size pasture

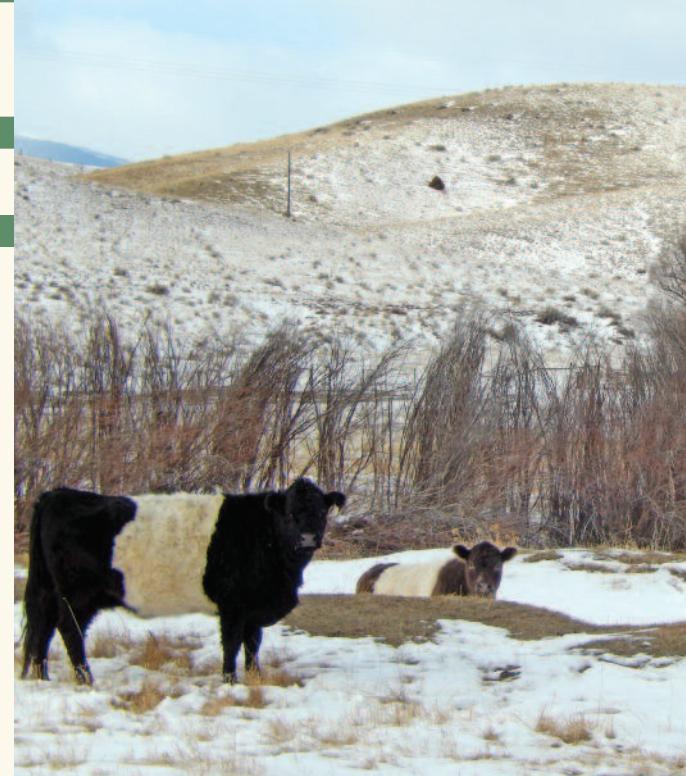
Sheep, cattle, goat, horses, and mules

When It Works:

Yearlong

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.



Tool Guide

Tool	Pasture Size	Livestock	When It Works Best	Tool	Pasture Size	Livestock	When It Works Best	
	MIG	0 ≤ Acres	Cattle, Horses, Sheep, Goats	Late Spring-Fall		≥ 640 Acres	All Livestock, Including poultry	Yearlong
	Livestock Guard Dogs & Donkeys	0 - 1,000 Acres	Cattle, Sheep, Goats, Horses	Yearlong		≥ 60 Acres	All Livestock, Including poultry	Yearlong
	Carcass Management	0 ≤ Acres	All Livestock, Including poultry	Spring and Fall		0 ≤ Acres	Cattle, Sheep, Goats, Horses	Times of High Wolf Use
	Riders & Herders	640 ≤ Acres	All Livestock	Yearlong		0 ≤ Acres	Cattle, Sheep, Goats, Horses, Mules	Yearlong

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.

Resources:

As a state agency Montana Fish, Wildlife and Parks is responsible for protecting, enhancing, and regulating the wise use of the state's fish, wildlife, parks, and recreational resource for present and future generations.



People and Carnivores connects people, ideas, and resources to advance rangeland stewardship and carnivore conservation in the American West. People and Carnivores works with ranchers, hunters, outfitters, rural residents, land managers, and scientists to keep grizzlies and wolves in the wild and out of trouble.

Wildlife Conservation Society's (WCS) Community Partnerships Program helps WCS meet its mission to conserve wildlife and habitat through understanding critical issues, using a collaborative approach to implement science-based solutions, and supporting local community participation in conservation.

