



Wolf-Livestock Conflict Risk Management

Understanding Wolf-Livestock Conflict Risk

There is a multitude of dynamics involved in understanding wolf-livestock conflict risk. Conflict mitigation requires--at the minimum--the understanding of wolf hunting behavior and understanding prey vulnerability.

This document provides a simplified overview of some factors to consider when evaluating and managing conflict risk.

Basic Wolf Hunting Behavior

"as wolves circulate around their territories and encounter and test prey under constantly changing conditions, they gain information about the relative vulnerability of various types of prey to hunting (including finding, catching, and killing). Through trial and error they end up with whatever prey they can capture."

- Mech, L. David and Peterson, Rolf O., "Wolf-Prey Relations" (2003).
USGS Northern Prairie Wildlife Research Center. 321.

Wolves have a strong sense of self-preservation. As such, they are continually weighing vulnerability against risk – this leads to testing prey’s vulnerability. Unlike bears and lions, wolves are not ambush predators. Wolves are not physically equipped to take down prey like bears and lions. Wolves generally attack from behind, minimizing their risk of injury or death from a hoof or antler. Thus, wolves will pressure prey to entice them to flee. Getting their prey to run also allows the wolves to evaluate which animal is the most vulnerable, allowing them to single out and put their collective energy toward taking the weak target.

If the prey, however, turns and faces the wolves, standing its’ ground, the risk to the wolf increases. If the wolves are unsuccessful in getting a flight response, in most cases, the wolves will back down and seek more vulnerable options.

Wolves pursuing fleeing Elk



Bison in a herd standing ground





When prey becomes trapped or hindered by a landscape feature like deep snow, downfall, fencing, or steep draw, wolves don't need to take the weakest or slowest animal. They can take a healthy, full-grown elk bull hindered by challenging terrain. As long as the vulnerability outweighs the risk, wolves will take advantage of the circumstances.

Prey Vulnerability and Surplus Killing

As with all predators, wolves kill to obtain the food needed to survive. For wolves, hunting takes a tremendous amount of energy, and most hunting attempts are unsuccessful. Thus, wolves take advantage of prey vulnerability to procure sufficient food with minimal effort and risk.

Like many predators, wolves can occasionally take more than can be immediately consumed. Though "surplus" killing is uncommon, it does happen, and generally, this is seen in late winter months when ungulates are more physically compromised. As with any predation event, there always exists a set of circumstances that led to the successful kill. It is no different in the case of surplus killing; sufficient vulnerability existed in a group of animals that allowed for multiple kills. Prey in a weakened state due to winter severity, deep snow, challenging terrain, herd illness, or prey behavior are some factors that can play into a surplus killing event.

If the carcasses are left on the landscape, wolves will generally return to a kill site for several days to continue consuming the remains. Surplus kills also provide valuable food resources to other animals via scavenging during the time of year when other carnivores need these resources the most.

Livestock Vulnerability

To reiterate, prey vulnerability is a highly influential factor in determining wolf hunting success. Many factors lead to livestock vulnerability. Some examples include:

- Response of livestock to predator pressure
 - This is the #1 factor in livestock vulnerability
 - Examples of responses that may decrease or increase vulnerability
 - stand or flee
 - group or scatter
 - mother up or leave their calf behind
- Terrain/topography
 - Wolves can and will take advantage of landscape features that lead to increased vulnerability in prey, thus, higher hunting success.
 - Downfall
 - Bogs or deep snow
 - Draws and creek beds



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- Woody areas
 - Fencing
 - Fringe territory (cattle gathered in an open pasture against dense woods)
 - Mothering instincts of cows
 - Single/alone animals
 - Scattered cattle vs. grouped herds
 - Encounter rate
 - can be increased by deadstock left on the landscape
 - can be increased by pasture location in proximity to wolf activity and or prey location/migration routes
 - Condition/health of livestock
 - Ungulates mingled with livestock
 - Predictable location and movement of prey

Wolves learn and remember the information gained about prey behavior, terrain, locations, and any other physical factors that will help them in their quest for food.

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The above information can help in evaluating wolf-livestock conflict risk; there can be any combination of factors and factors not listed in this document.

Keeping the above points in mind can help ranchers make proactive decisions regarding livestock management to reduce the vulnerability of livestock to predation by wolves. When a conflict does occur, there is always a reason or combination of factors specific to that incident. Identifying and understanding these will help in preventing the potential for future events.

Herd Management

Specific stockmanship/cattle handling practices that increase cattle's tolerance to predator pressure while reinforcing the herd instinct have proven to be the most effective in boosting cattle defense and reducing vulnerability. Proactively spending time working with cattle before wolf presence or conflict vs. reactive after conflict occurs will further reduce the risk of wolf-livestock conflict.

For example, learning, implementing, and practicing Bud William's Low-Stress Livestock Handling has demonstrated significant success in lowering vulnerability in cattle to wolf predation by "teaching" the cattle to respond to pressure appropriately rather than improperly react to it. A direct correlation exists between how humans handle their cattle and how cattle respond to wolf presence. Working Circle offers clinics, free resources, and on-site support for ranchers interested in understanding more about these strategies.

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Supplemental tools such as hotwire fencing can support these herd management efforts. Focusing on managing the cattle vs. managing for wolves will lead to better overall results for reducing conflict risk and investing resources in terms of time, finances, and energy.

“If you are going to raise prey in predator country, you want to be sure your cattle are the least vulnerable prey on the landscape.”

-Whit Hibbard

Physical Deterrents

Wolves’ evaluation of risk vs. vulnerability and their fear of anything new or unfamiliar makes conflict deterrent tools, e.g., fladry and fox lights, a valuable option. However, the tools are only effective short-term as wolves will learn that these tools will not cause harm or death, and once the risk is no longer perceived to be higher than the potential for food, these tools become ineffective. Deterrent tools are best used for pastures and calving lots.

For open-range conflict risk management, understanding how the wolves use the landscape, how ungulates use the landscape, and how livestock uses the landscape and understanding the landscape can help inform a conflict risk reduction plan. Preparing cattle for open range via specific stockmanship practices that boost cattle defense and encourage herd behavior before turnout plays a vital role in lowering cattle vulnerability.

Vulnerability vs. Chronic Depredation

Repeated depredations by wolves on livestock are often referred to as “chronic” depredation. However, more often than not, it is a case of vulnerability that may be addressed rather than actual chronic behavior. If you have one ranch experiencing repeated loss due to wolves while the neighbor has had no issues, this leads to the question of why wolves are killing cattle on one ranch and not the neighbor’s.

This illustrates a classic vulnerability scenario with a specific ranch operation or cattle. There is a window of time, which can vary greatly, in which the vulnerability must be addressed, and most likely can be addressed, to avoid the potential of wolves becoming *chronic* depredators. For example, Ranch “A” has been proactive in addressing potential vulnerability concerns and has not experienced any loss of cattle to wolves, even with a high wolf-livestock encounter rate. A neighboring ranch, Ranch “B,” has not taken steps to address operational or cattle vulnerability and has experienced repeated loss due to wolves. Over time, if Ranch B does not take measures to address the areas of vulnerability, this lack of action may negatively impact not only Ranch B but also other ranches in the community or wolf pack range. If wolves continue to have hunting success



on Ranch A, they can become more habituated to cattle and more assertive in their hunting of livestock.

This can grow into a community-wide challenge, leading to a chronic depredation scenario that is very difficult to reverse. Thus, it is critical that the community, as a whole, be willing to take steps to evaluate and recognize wolf-livestock conflict risk and be proactive in addressing the vulnerabilities identified.

Considerations for Bigger-Picture Conflict Mitigation

Implementing comprehensive, lasting, and sustainable strategies based on adaptive herd, range, and resource management is the key to continued success. Each ranch operation needs to identify approaches that will help meet, not take away from, the overall goals of the ranch and lead to greater returns on investment (financially, emotionally, and energetically) over time while lowering predator-conflict risk.

“One understanding is worth a thousand techniques”

-Bill Dorrance

The presence of wolves can lead to emotionally charged investments that don't build up the ranch or solve the overall challenges. If a ranch experiences loss, a short-term crisis mode is understandable, but remaining in a crisis mindset won't solve challenges over the long run. Apart from emergency response measures, focusing on the discovery process first will save valuable time and resources when implementing strategies. Take it one step at a time.

It is beneficial to focus on more than *conflict* or deterrents. Rather than managing simply for wolves, manage for what will help meet the greater ranch goals. Look at conflict risk reduction strategies that fit into and serve the overall needs and desired outcomes for the ranch. Deterring wolves over thousands of acres is daunting; investing time and energy towards strategies that build the ranch to withstand wolves and lower vulnerability makes more sense.

“The key is to prevent loss while adding value”

- Hilary Anderson

There is no perfect or one-size fits all solution. Each operation, landscape, and wolf pack is unique. No one can claim that this is easy, especially during the early stages—but it can be done, resulting in success for the ranch on a comprehensive level. Looking toward a community-led and managed approach, resource sharing, and open communication can help the livestock community as a whole.

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The combination of understanding, ability to adapt to changing circumstances on the ground, and taking advantage of available support will help avoid unnecessary losses to both cattle and wolves and ensure ranchers can keep ranching in the modern world.

For further information on wolf-livestock conflict risk management, risk reduction strategies, risk assessments, and support available, please reach out anytime. We are here 24/7/360

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