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## Understanding Wolf-Livestock Conflict Risk

There are 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 of the factors to consider when evaluating and managing conflict risk.

### Basic Wolf Hunting Behavior

As wolves circulate around their territory and encounter and test prey under various conditions, they gain information about prey vulnerability to hunting (finding, catching, killing). Through trial and error, wolves end up with whichever prey they can capture.

Wolves have a strong sense for self-preservation. As such, they are continually weighing vulnerability against risk – this leads to testing prey’s vulnerability. Unlike bear and lion, wolves are not ambush predators. Wolves are not physically equipped to take down prey in the manner that bear and lion do. Wolves generally attack from behind, minimizing risk of injury or death by means of a hoof or antler. Thus, wolves will pressure prey to entice them to flee. Getting the prey to flee also allows the wolves to evaluate which animal is the most vulnerable eventually singling out and putting their collective energy towards taking the identified prey.

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. Exceptions to the need to get prey to flee are



Bison in herd standing ground



Wolves perusing fleeing Elk

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when prey become trapped or hindered by a landscape feature: deep snow, downfall, fencing or steep draw. It is not always the weakest or slowest animal that is captured—a healthy, full grown elk bull hindered by challenging terrain can be taken. 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 procure food needed to survive. For wolves, hunting takes a tremendous amount of energy and most hunting attempts are unsuccessful. Thus, wolves are driven take advantage of prey vulnerability to ensure sufficient food can be procured.

Like many predators, wolves can occasionally kill more than can be immediately eaten. 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 the 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 animals need these resources the most.

### **Livestock Vulnerability**

To reiterate, a highly influential factor in determining wolf hunting success is prey vulnerability. And, as wolves circulate around their territory and encounter and test prey under various conditions, they gain information about prey vulnerability to hunting. Through trial and error, wolves end up with which ever prey they can capture.

There are many factors that lead to livestock vulnerability, for example (some but not all):

- Response of livestock to predator pressure
  - This is the #1 factor in livestock vulnerability
  - Example prey responses: flee, stand, group or scatter, mother up or leave their calf behind

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- Terrain/topography
    - Wolves can and will take advantage of landscape features that lead to increased vulnerability in prey, thus higher hunting success
      - Downfall
      - Bogs and/or deep snow
      - Draws/ creek beds
      - Woody areas
      - Fencing
      - Fringe territory (cattle gathered in open meadow against heavy woods)
  - Mothering instincts of cows
  - Single/ alone animals
  - Scattered cattle vs. grouped herds
  - Encounter rate
  - 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 on this document.

Keeping the above points in mind, can help ranchers make proactive decisions in terms of livestock management to reduce vulnerability in 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 further events.

### Herd Management

Herd management in terms of specific stockmanship/cattle handling practices that increase cattle's tolerance to predator pressure while reinforcing the herd instinct has proven to be the most effective in boosting cattle defense and reducing vulnerability. Being proactive in

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spending time working with cattle vs reactive after conflict has occurred will further reduce risk of wolf-livestock conflict.

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 not only for reducing conflict risk, but in terms of investment of resources in time, financially, and energetically.

*“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’ risk vs. vulnerability and neophobic nature 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 are using the landscape, how ungulates use the landscape, and how livestock use the landscape, and understanding the landscape itself can help inform a conflict risk reduction plan. Preparing cattle for open range via stockmanship practices that boost cattle defense and encourage herd behavior prior to turnout, will play an important role in lowering cattle vulnerability.

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### Considerations for Bigger-Picture Conflict Mitigation

Implementing comprehensive, lasting, and sustainable strategies based on adaptive herd, range and resource management is key for continued success. It is important for each ranch operation to identify approaches that will help meet, not take away from, the overall goals of the ranch—for example, ranching strategies that lead to greater return on investment (financially, emotionally, and energetically) overtime while lowering predator-conflict risk.

*“One understanding is worth a thousand techniques”*

-Bill Dorance

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

It is also beneficial to not solely focus on the *conflict* or deterrents e.g., not manage simply for wolves, but manage for what will help meet the greater ranch goals and look to conflict risk reduction strategies that fit into and serve the overall needs and desired outcomes for the ranch. Deterring wolves over 1000's of acres is daunting; it makes more sense to invest time and energy towards strategies that build the ranch to withstand wolves and lower vulnerability.

*"The key is to prevent loss while adding value"*

- Hilary Anderson

There is no perfect solution, this is not a one-shoe fits all scenario, each operation, landscape, and wolf pack is unique and no one can claim that this is easy especially during the early stages—but it can be done, and success for the ranch on a comprehensive level, can be experienced. Looking toward a community led and managed approach, resource sharing, and open communication can help to forward the best interest of the livestock community as a whole.

The combination of understanding, ability to adapt to changing circumstances on the ground, and taking advantage of support available will help avoid unnecessary loss 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/or support available please reach out anytime, we are here 24/7/360

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