DRAWING THE LINE BETWEEN PREDATORS AND LIVESTOCK

BY LARA VOLSKI

In the blue, frigid night, a low howl sounds out over a cattle ranch situated in a vast rangeland of Montana. A guard dog lifts its ears in anticipation, and even the pine needles seem to prick with unease. At this point in the night, a livestock rancher has two alternatives: she can reach for her gun and try to put an end to the nearby wolf, or she can remain in her bed, content with the fact that she has taken preventative action to protect her herd. If she chooses the former option, she addresses the immediate threat but may risk disturbing the social dynamics of the local wolf pack and placing her herd in even greater danger. If she chooses the latter option, she aligns herself with the next generation of ranchers and herders, who utilize non-lethal methods to deter predators from preying on their livestock. Livestock management is an ancient practice that continues to serve as a foundational aspect to modern human society. Ranchers have handled conflicts with predators using the same method for centuries: by simply exterminating the problem animal. While lethal methods have proved to be fairly effective, there is a current movement in the ranching community that emphasizes co-existence with top-of-the-food-chain animals. It starts with acknowledging that we play a similar role in the ecosystem as wolves, bears, or leopards, and will thus always be in competition with them for resources. Instead of wasting time pursuing problem animals after a calf or lamb has already been taken, ranchers are learning how to limit negative interactions before they occur. Predators are already learning how to adapt to us—African wild dogs, for example, have shifted to preying on small animals in lieu of larger ones (like livestock) when they share their territories with humans.[2] The next generation of ranchers believe that we humans can reciprocate this effort to adapt. Studies have shown that livestock depredation (loss of livestock to carnivores) decreases with abundance of natural prey and distance from protected areas.[5] Humans can therefore differentiate the role of predator and rancher by maintaining wildlife parks and reserves and creating buffer zones between these protected areas and ranching operations. Yet the occasional depredation event will persist as long as human encroachment continues, and it is a grave loss for any rancher to lose a calf. So why does the new ranching paradigm avoid the extermination of a problem animal when overlap occurs? Large carnivores are particularly sensitive to lethal methods because they invest more time and energy into parental care than many other animals and thus breed at a relatively slower rate.[2] We cannot afford to lose large predators because many of them are keystone species, which means their presence dictates how an ecosystem will function. Proponents of the new ranching paradigm even state that non-lethal methods may actually be more effective than lethal methods. The secret lies in working with the social communities of both livestock and predators. It can take a little imagination to place domestic cattle alongside their wilder, fiercer sisters that once ruled the vast plains of North America's heartland. Nevertheless, the instinctual wiring of the plains bison remains within the beef and dairy cows of today. These innate behaviors can be used to a rancher's advantage if she uses low-

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stress herding methods to forge the herd into a self-protecting unit. Current ranching practices use fear and pursuit to move a herd from one place to another. A stressed cow will consequently want to return to the last place she felt safe, and abandon the herd in order to return to the previous pasture. Alone, she and her calf are vulnerable to depredation. But if a rancher focuses on low-stress herding techniques, a cow learns to see the herd as a place of safety. This will limit separation, strengthen social bonds, and reinforce herd mentality—ultimately encouraging the herd to defend themselves and each other from depredation in the same way that their wild bison relatives would.[7] And the importance of social bonds extends past the herd, too—guard dogs that bond with the herd as pups and are present for calf feedings are more effective at protecting the animals as adults.[3] The next generation of ranchers also believe that non-lethal methods will help to promote robust social dynamics of large predators. Despite what one may guess, killing carnivores may actually lead to an uptick in livestock depredation. Think back to the rancher who has been disturbed from her sleep by a howling wolf. If she decides to shoot, poison, or trap this animal, she risks killing an alpha (the male or female breeding wolf). Without an alpha, packs have been shown to fracture into independent breeding pairs, who then all have pups of their own and need to independently hunt to sustain each of their separate packs.[9] Furthermore, if our sleep-deprived rancher ends up shooting a female breeding wolf, her mate may choose to adopt a polygamous mating strategy.[1] This would increase both the size and the appetite of the pack. It has been demonstrated, however, that these effects are brief and last no more than a year; some ranchers who rely on lethal methods are willing to risk a mere year in order to provide immediate protection to their herd.[6] The next generation of ranchers believe that wolves are not the only predatory societies that are fractured by lethal methods. This antiquated ranching practice disturbs the bonds of another key predator: humans. A rancher is a guardian for both her herd and the pastures that nourish her cows, sheep, and goats. Fertile rangelands are among the most threatened ecosystems in the world because they are abundant in natural resources and economically profitable. With the threat of landscape conversion to residential and agricultural enterprises looming like a dark shadow over prairies and meadows, ranches have come to exist as some of the last asylums for threatened rangeland species. Ranchers are in this way a natural ally to preservationists, despite the fact that carnivore mitigation methods often drive the two parties apart. After all, rotational and timed grazing of cattle, sheep, or goats can be used to target invasive plant species and encourage the growth of native ones.[4,8] Preservation can be of equal benefit to ranchers and preservationists by the practice of ensuring that wild prey populations are bountiful, which discourages the hungry bear or cougar from braving a field of cattle. By incorporating non-lethal and preventative methods into the next generation's ranching para-

Figure 1. **Although we may not look similar, humans and coyotes play analogous roles in the ecosystem. We can decrease overlap by preserving wild game populations and by establishing buffer zones between protected areas like national parks and ranching operations.[5]**

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Figure 2. The herd instincts running through these plains bison are also present within domestic cattle. By using low-stress herding tactics, a rancher can rekindle herd mentality within their cows, and liken them to their wild relatives.[7]

digm, we can draw a line between predators and livestock, and erase the line that exists between ranchers and preservationists.

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