FACT SHEET #4
Myths About Cattle and Prairie Dogs

Extensive research, conducted over the course of the past twenty years, indicates that prairie dogs do not present a significant economic threat to livestock operations. For instance, O'Meilia et al. (1982) found no significant difference in the weight of steers grazing on and off prairie dog towns. O'Meilia et al.'s study was conducted under heavy cattle stocking rates, thereby maximizing opportunities for competition between cattle and prairie dogs.

A new study, published in 2021 by the ARS Center for Agricultural Resources Research (USDA) in Fort Collins, scientists David Augustine and Justin Derner conducted two studies to evaluate how livestock performance is affected by grazing competition with prairie dogs. They summed it up as follows:

> **"Based on the findings thus far, we've found that prairie dogs and cattle can coexist on the same pastures, with only minor declines in cattle weight gain when prairie dogs are abundant,"** said Augustine, a research ecologist with the Center's Rangeland Resources and Systems Research Unit. **"Under conditions of average rainfall during the growing season in shortgrass steppe, prairie dog grazing reduces the amount but enhances the quality of the forage. After measuring the biomass of forage left behind on prairie dog colonies, we found that both protein content and *in vitro* dry matter digestibility were enhanced. As a result, the cattle can still spend a considerable amount of their time grazing on prairie dog colonies."**

Also, Collins et al. (1984) reported that poisoning prairie dogs was not cost-effective, as the annual cost of maintaining control exceeded the annual value of the forage gained. Their conclusion held whether one assumed the perspective of the Forest Service or a grazing permittee. Uresk (1985) finds that controlling black-tailed prairie dogs did not result in increased forage for the four-year time period he studied. Similarly, Klatt and Hein (1978) reported that eradication of prairie dogs would not significantly benefit cattle grazing, as changes in vegetation following five years of prairie dog abandonment were minor in the shortgrass prairie. In fact, these researchers concluded that there were decreases in total vegetative cover after prairie dog abandonment of colonies.

There are several reasons why the historical belief that prairie dogs are detrimental to cattle ranching is inaccurate. First, prairie dog grazing results in a higher nitrogen concentration in plant shoots, compared with off-colony areas (Whicker and Detling 1988; Coppock et al. 1983a; 1983b; Krueger 1986). More generally, Whicker and Detling (1988: 783) reviewed the literature on the increased nutrition of forage on prairie dog colonies and concluded:

> **In patches created by prairie dogs, plant biomass has a greater live-to-dead ratio (albeit lower standing crop), a higher crude protein (nitrogen) concentration, and a greater digestibility than biomass from the uncolonized prairie** (Coppock et al. 1983a). These characteristics result in improved nutrition per unit of food consumed on the colony.

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CASE STUDY:

PRAIRIE DOGS AND CATTLE: Influence of black-tailed prairie dog colonies on vegetation and cattle movement in the Marathon Basin, Texas

https://bri.sulross.edu/project-spotlight-prairie-dogs-and-cattle/

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Objectives for this study included assessing spatial variation and trade-offs between forage quality and quantity in and out of prairie dog colonies, documenting seasonal variation in forage quality and quantity, and evaluating movement and grazing patterns of cattle in pastures with varying ratios of prairie dog and non-prairie dog colony. Samples of vegetation were collected every month from June 2017 - June 2018 from a grid across the Marathon Grassland Preserve. Cattle (n = 25; 10 with Global Positioning System collars) were rotated through three pastures with differing amounts of prairie dog colony to evaluate movement and grazing patterns. Vegetation collected from the field was prepared for nutrition analyses, and collar data was used to determine cattle use on prairie dog colonies.

Results for prairie dogs' influences on vegetation showed no difference in vegetation biomass or basal cover between prairie dog colony and non-prairie dog colony. Cattle movement increased when grazing on the prairie dog colony during the warm-dry and warm-wet seasons. Movement data indicate that cattle graze within the prairie dog colonies during the growing seasons because of the highly nutritious regrowth promoted by prairie dogs' foraging activity. **This study provides evidence that landowners who seek to graze cattle on prairie dog colonies may see a mutually beneficial relationship in the form of positive vegetative feedback.** The use of appropriate stocking rates and rotational grazing can be administered so that cattle have access to the prairie dog colonies when vegetation is at its highest nutritional value, while removing grazing pressure and competition between prairie dogs and cattle when nutritional value is lower.

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Are you passionate about preserving our natural heritage? Discover how you can help protect prairie dogs from disappearing from our plains. There are numerous resources available for landowners with prairie dogs on their property, and many dedicated groups are working tirelessly to save this keystone species. Reach out today to learn more and become a part of this important conservation effort!

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