

EFFECTS OF CATTLE & WILDLIFE GRAZING ON THE THEODORE ROOSEVELT



By KRIS HURLBURT
B&C Fellow

Habitat is critically important to the maintenance of healthy wild ungulate populations. Because many of their historical habitats have been altered or destroyed, wild ungulates are no longer able to exert habitat preferences or occupy historically used areas. Land uses such as logging, recreation, roading, and farming have altered the amount of habitat available. Livestock grazing, another common land use in the western United States, has had a significant effect on wild ungulate habitat. Grazing by livestock is a major use of many federal and private lands in the West and is vital to the culture and economy of many people and communities. At least 70 percent of the land area of the 11 western United States is subject to seasonal livestock grazing. Livestock have significant influences on wild ungulates and their habitat. Livestock affect wild ungulate habitat by altering the amount of available forage for wildlife, changing plant community structural components such as plant height and cover and by changing the types and numbers of plant species present on a site. Typically, grazing has changed plant composition by decreasing

the plant species preferred by wild ungulates and increasing the amount of less preferred plant species. However, grazing can improve habitat if managers control stocking rate, duration, distribution and season of grazing. With proper management, livestock grazing can be used to increase the productivity of some plants, make some plants more nutritious, and create more diverse habitats for wild ungulates.

Many studies have been conducted to determine how to manage livestock to benefit wild ungulates; however, the success or failure of a grazing regime depends on many interacting factors such as plant communities present, types and numbers of livestock, grazing management, size of wild ungulate populations and other site-specific conditions. To develop grazing regimes for a particular place that produce livestock and maintain high quality wild ungulate habitat, the effects of grazing by both animal groups need to be understood for specific plant communities. To learn these site-specific points for TRMR, I conducted a study as a Boone and Crockett Fellow at the University of Montana's School of Forestry.

THEODORE ROOSEVELT MEMORIAL RANCH

The Theodore Roosevelt Memorial (TRM) Ranch is located along the Rocky Mountain Front, an area that has been called the "Crown of the Continent" and the "Fertile Belt" by various early explorers. Early British and Canadian explorers sent to explore the vast area that drained into the Hudson's Bay noted the visibly more productive grasslands that extend in a crescent-shaped arc through Canada west of the shortgrass prairie and down into central Montana running next to the Rocky Mountains. Today, the southern tip of this grassland community is known as the Rocky Mountain Front, characterized by the transition from the Fescue Prairie to limer pine forests to Douglas-fir forests with increases in elevation. The Fescue Prairie is characterized by fertile soils, high precipitation and dominance by the grass rough fescue. Rough fescue provides nutritious year-round forage for both cattle and elk. It is a valuable species due to its high productivity, its stability in forage yield and its high quality of forage compared to other grasses, both in summer and winter. It has been called "buffalo bunch

D U N G U L A T E Z I N G EVLET MEMORIAL RANCH



grass” since it was the main winter forage for the buffalo of the Northern Great Plains. Buffalo typically summered on the open mixed prairie to the east of the Front. With the onset of winter, the animals moved to the Fescue Prairie along the Front. The Front provided high quality forage and cover for the animals in the winter. Today, rough fescue and other diverse plant communities provide excellent forage for livestock and the 3,000 elk and 5,000 mule deer that call the Rocky Mountain Front home.

Vegetation studies were initiated on the ranch in 1987. Fences were constructed in plant communities important to both cattle and wild ungulates to create areas subjected to both cattle and wild ungulate grazing, just wild ungulate grazing and no grazing. During the summer of 1995, I collected information on the plants in these communities.

Results suggest that grazing by both cattle and wild ungulates can create plant communities with different species compositions than ungrazed areas. In areas grazed by cattle and wild ungulates, there are generally fewer desirable species, more undesirable species and yet there is a greater diver-

sity of plants compared to ungrazed areas. Some important non-native forage species for both animal groups, such as dandelion and timothy, were more abundant in these areas. However, other important native forage species, such as rough fescue, Idaho fescue and bluebunch wheatgrass, were less abundant. While the introduced species provide high quality forage for both animal groups, these species should not be managed at the expense of the more productive native species.

Surprisingly, wild ungulates are having only minor effects on the plant communities of the TRM Ranch. This may be because most of the wild ungulate use is in the winter, when plants are less susceptible to injury from grazing or browsing.

Although grazing by cattle and wild ungulates was found to cause declines in the abundance of rough fescue, lack of grazing may also be detrimental to these communities. If rough fescue communities are not grazed, the plants become surrounded by dead plant material, making it difficult for wild animals to reach the new green growth. It has been well documented that animals will avoid ungrazed rough fescue plants if grazed plants are available. Livestock

grazing encourages more vigorous, productive plants and makes new foliage readily available for wild ungulates.

CONCLUSIONS

Because the plant communities of the Rocky Mountain Front evolved with grazing, some degree of grazing appears to be desirable to maintain vigorous, productive plant communities. Careful management of livestock can improve range condition while leaving sufficient forage for wintering ungulates. Additionally, specialized grazing systems such as rest-rotation and deferred-rotation have been found to benefit deer and elk while providing for livestock production. Rest is especially important for key forage species on the ranch, such as rough fescue, Idaho fescue and bluebunch wheatgrass. These grazing systems can provide: 1) sufficient rest periods for plants to maintain vigorous plant communities, 2) desirable, nutritious spring forage for cattle and wild ungulates, and, 3) pastures free of cattle for deer and elk. Additionally, key forage species such as rough fescue, Idaho fescue, Kentucky bluegrass, and common timothy will be maintained, thus maintaining productive, vigorous grasslands.