QUALITY HABITAT FOR Montana Deer and Elk

Landowners wanting deer or elk to thrive on their land can begin by evaluating their habitat essentials.

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Forage and cover (both shelter cover and hiding cover) are often the most important habitat essentials for Montana deer and elk. Landowners wanting elk or deer to thrive on their land can begin by evaluating how well their land provides these habitat essentials and then, if needed, landowners can consider alternative methods for improving forage or cover.

Forage

Forage available to elk and deer during summer is nutritious, but forage quality during winter and spring often does not satisfy animal nutritional requirements. Deer and elk commonly lose weight and vigor during winter because they ingest fewer calories than they expend searching for forage and coping with weather. Thus, winter survival by elk and deer relies, in large part, on body fat reserves accumulated while foraging during summer and fall. However, abundant fat reserves do not ensure adequate dietary protein. Prolonged protein deficiencies reduce muscle mass and lower disease resistance. Only small differences in the protein content of winter forage can dictate whether elk or deer survive winter or reproduce successfully the following spring.

In spring, new plant growth is nutritious. However, overall forage quality can be poor in spring if the new plant growth is hidden by too much standing dead forage from the previous year. Poor forage quality in spring prevents deer and elk from recovering weight and strength after winter losses. Pregnant elk and deer are especially vulnerable to poor forage quality in spring because they have elevated nutritional requirements for fetal growth and the physiological demands of calving or fawning. Poor forage quality in spring may also limit antler development in male deer and elk. Elk and deer thrive where they can consume vegetation that is soft and succulent. Coarse, fibrous forage is much less nutritious and less palatable. Deer and elk can survive winter by eating large amounts of shrubs, but won't thrive if diets contain more than 15-20% juniper or sagebrush. The natural oils contained in these plants disrupt the animals' digestive systems. West of the Continental Divide, shrubs are usually the primary winter food for elk, while grasses tend to dominate winter elk diets east of the Divide. Winter deer diets statewide are usually shrub-dominated. In spring, elk and deer relish early-greening grasses and succulent, nutrient-rich forbs (i.e., wildflowers), such as dandelion, geranium, aster, clover, and milkvetch. When forbs mature and dry as summer progresses, deer and elk browsing on shrubs increases, and elk consume more grasses as well.

Cover

Elk and deer need shelter from wind and extreme weather. They also need places to rest and hide from predators, including people. Varied topography can provide valuable shelter and hiding cover, but vegetative cover provided by trees, shrubs, and tall grass is critically important on flat terrain or where predators are more abundant. Larger patches of vegetative cover (e.g., 10 to 30 acres or more in size) provide better shelter and hiding cover, but patches of five acres or less can benefit deer and elk if the vegetative cover is dense. A diverse mixture of plant heights and plant species also improves cover quality. For example, areas with shrubs and tall grasses growing beneath trees provide better cover than places where dense tree canopy excludes sunlight and prevents shrubs and tall grasses from growing beneath the trees.





Habitat Improvements

The first step when planning habitat improvements is to understand the land's location. For example, it would be unwise to enhance winter forage for elk and deer if the land was located high in the mountains where winter snow is deep, because deer and elk in these locations likely migrate to lower elevations during winter. The more mixed the habitat, the more valuable it will be. Try to achieve a mixture of 40% cover areas and 60% foraging areas, and remember to assess the "neighborhood" rather than your land alone. If, for example, sufficient cover is provided on adjoining lands, your habitat improvement efforts will benefit elk and deer more if you enhance foraging habitat rather than providing additional cover. Ideal foraging habitat is within 0.1 to 0.25 mile of shelter or hiding cover, and ideal foraging habitat and cover are located within 0.5 to 1 mile from where deer or elk can access drinking water in streams, ponds, or water tanks.

One option for improving elk and deer foraging habitat is to seed palatable and nutritious plants. Alfalfa and sainfoin are forb species preferred by deer and elk. Preferred shrubs include aspen, willow, mountain maple, chokecherry, serviceberry, and red osier dogwood. Where annual precipitation is at least 15 or 16 inches, forb and shrub production can be enhanced by applying fertilizer. A mixture of 11% nitrogen, 52% phosphorus, and 0% potassium at 100 pounds per acre works well. The low rate of nitrogen and higher rate of phosphorus benefits desirable forbs and shrubs more than grasses. Prescribed burning can be used to remove decadent (i.e., standing dead) forage and stimulate young, nutritious plant growth. Burning under cooler conditions (e.g., 30-50% relative humidity, wind speed 5-10 miles per hour, and air temperature of 60-75 Fahrenheit) makes prescribed fires easier to control. Be sure to obtain burning permits where needed and follow all local laws, regulations, and precautions.

Livestock grazing and mowing are excellent ways to enhance elk and deer foraging habitat. Grazing or mowing grasses improves grass nutritive quality and stimulates forb and shrub growth. In spring, elk and deer prefer to forage in areas that were mowed or moderately grazed by livestock during the previous summer-early fall. Grazing or mowing at greater intensities also works well if followed by one or two years without grazing or mowing. Nutritive quality of shrubs during winter can be increased by mechanical cutting or by moderate-intensity livestock browsing in early summer, when sufficient soil moisture remains for shrubs to regrow.

Finally, mechanically thinning dense tree and shrub cover can stimulate forage production for deer and elk. Herbicides also can be used to thin trees and shrubs. When 40% of the ground surface is covered by tree or shrub canopy, forage production is cut in half. When 60% of the ground surface is covered by tree or shrub canopy, forage production is reduced 90%. Tree and shrub canopy cover of 10-15% or less generally does not limit forage production.

For more information or resources on enhancing habitat for deer and elk, contact your local MSU county or reservation Extension office.