

## **Rangelands in the Fall**

*Dr. Casey Matney*

*Rangeland Management Specialist*

Fall brings a great number of changes to Colorado rangelands. Fall brings cooler temperatures, decreases in rainfall, and waning daylight. These changes signify the end of the plant growing season, which results in plants going dormant. Below are a few changes to rangelands you can expect to occur during the fall/winter.

Most grasses, forbs, shrubs, and trees prepare for fall and winter by storing carbohydrates in their roots. Plant photosynthesis decreases or halts completely, while plant respiration continues through the fall and winter. Many plants will shed their leaves. Evergreen plants will retain their leaves, and grasses will dieback to their crown and grow new leaves in the spring. The forage quality of most shrubs and trees remain quite high through the fall and winter, while the forage quality of forbs and grasses decline. Forbs decline in forage quality the fastest, while the forage quality declines more slowly for dormant grasses. Crude protein levels of dormant grasses may be reduced to as low as 1% to 2% by the time spring arrives. Livestock subsisting only on dormant rangeland grasses during the fall and winter often benefit from protein and mineral supplementation. Aside from providing protein and minerals, supplementation often increases forage intake and digestibility of dormant grasses. Animals grazing dormant grasses (eating forage lacking in green leafy material) for more than three to four months may begin to suffer from vitamin A deficiency.

Most grazing livestock and wildlife consume about 2% of their body weight per day in forage (dry matter). A 1,000 pound cow will need to consume about 20 pounds of forage (dry weight) per day, while a mature pronghorn antelope weighing 120 pounds will consume about 2.5 pounds of forage dry matter per day. Grazing animals eating low quality forage or eating less than 2% of their body weight a day will begin to lose weight. Wildlife such as deer and elk often lose weight during fall and winter, and they can go 30 to 60 days with little to no food as long as they start out the fall/winter healthy and with adequate fat reserves.

Litter from dormant plants, when it falls to the ground and covers the soil surface, helps reduce evaporation and store soil moisture for the spring. The freezing and thawing process helps weather and incorporate plant litter into the soil. It also helps improve the seedbed for seeds that fell off plants during the summer and fall. Additionally, freeze, thaw, soil movement, and weathering during the fall and winter help to weaken the seed coat (scarification) of seeds, which breaks plant seed dormancy and improves rates of seed germination in the spring.

If you have questions about changes taking place in the fall/winter on rangelands and how these changes can affect grazing animals or your livestock operation, please contact your local livestock/rangeland extension agent. Please visit the [Colorado State University Extension Directory](#) to find an agent near you. Or, if you are looking for more online information regarding rangelands, visit the [Within Range website](#).