
EFFECTS OF A REST-ROTATION GRAZING SYSTEM ON WINTERING ELK DISTRIBUTIONS ON THE WALL CREEK, MONTANA WINTER RANGE

Julee Shamhart,* Montana Fish, Wildlife, and Parks, 1400 South 19th Street,
Bozeman, Montana 59718

Fred King, Montana Fish, Wildlife, and Parks, 1400 South 19th Street, Bozeman, Montana 59718

Kelly Proffitt, Montana Fish, Wildlife, and Parks, 1400 South 19th Street, Bozeman, MT 59718;
kproffitt@mt.gov

Understanding livestock grazing effects on wildlife remains an important conservation issue. The purpose of this project was to evaluate the effects of a rest-rotation grazing system on elk resource selection within the Wall Creek winter range in southwest Montana. We collected bi-weekly observations of elk (*Cervus elaphus*) number and distributions across the winter range from 1988-2007. Using a matched-case control logistic regression model to estimate selection coefficients, we evaluated the effects of annual green-up conditions, winter conditions, landscape features, and grazing treatment on elk resource selection within the grazing system. We found that within the grazing system, elk preferentially selected for rested pastures over pastures that were grazed the previous summer. The strength of selection against the pasture grazed during the growing season was strongest, and pastures grazed during the early and late summer were selected for over the pasture grazed during the growing season. The number of elk utilizing the grazing system increased in the 19 years following implementation of the grazing system; however, total elk herd size also increased during this time. We found no evidence that the proportion of the elk herd utilizing the grazing system changed following implementation of the rest-rotation grazing system. Our results provide support for the principals of rest-rotation grazing systems. Wintering elk preference for rested pastures suggests rested pastures play an important role in rotation grazing systems by conserving forage for wintering elk. We recommend wildlife managers maintain rested pastures within rotation grazing systems existing on ungulate winter range.