

EFFECTS OF RANGELAND MANAGEMENT ON THE ECOLOGY OF SHARP-TAILED GROUSE IN MIXED-GRASS PRAIRIES

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Temperate grasslands, including mixed-grass prairies, suffer from the greatest levels of habitat loss and degradation of any ecosystem, which can have cascading negative effects. Grazing by livestock is the predominant land use across western North America and directly affects the structure, composition, and productivity of native grasslands. While certain grazing regimes can negatively affect wildlife habitat, properly managed grazing can be compatible with wildlife conservation and is preferable to other land uses that destroy or fragment native grasslands. With large home ranges and differing requirements for nesting and winter habitat, sharp-tailed grouse (*Tympanuchus phasianellus*) require large and complex areas of habitat, making them an ideal indicator species for grassland habitats. Poor range management has been implicated in the decline of sharp-tailed grouse throughout North America, but the effects of specific grazing regimes on grouse populations have not been studied. A better understanding of the ecological impacts of grazing is required to develop effective conservation strategies. We monitored 203 radio-collared sharp-tailed grouse in eastern Montana to assess the effects of grazing management on grouse ecology and evaluate the effectiveness of specific grazing regimes for improving wildlife habitat. In three years of study, we found that choice of grazing system had no effect on space use and important vital rates (nest survival and adult survival) for sharp-tailed grouse. We observed relatively weak effects of stocking rate and stocking density, but overall the performance of the sharp-tailed grouse population at our study area was not affected by grazing system.