Effects of Cattle Grazing on Small Mammal Communities at Red Rock lakes National Wildlife Refuge

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Cattle grazing is a common land practice on public lands in the West that can have complex impacts on both wildlife and vegetation. However, many studies of wildlife response to grazing only compare grazed versus ungrazed treatments, ignoring the dynamic nature of grazing and the many levels of grazing intensity and frequency commonly utilized. We undertook the current study to better understand the response of small mammals to the frequency of cattle grazing in wet meadow habitats on Red Rock Lakes NWR. Three adjacent grazing units were selected for study with grazing frequencies of 1, 3, and 8 years of rest in 2007 and 0, 2, and 4 yrs of rest in 2008. Two randomly placed trapping grids were placed within the *Juncus balticus–Carex praegracilis* vegetative alliance (wet meadow) in each unit. Trapping occurred from late June–August each year. Vegetation was quantified in each unit each year using point-intercept transects. We conducted raptor surveys during 2008 to examine raptor response to vole abundance. Voles (meadow and montane; *Microtus* spp.) made up the overwhelming majority (~99%) of individuals captured. Results from 2007 indicated that vole abundance increased with increasing rest from grazing. Vole abundance in 2008 was substantially lower and did not follow the same pattern as 2007–in 2008 the unit with an intermediate level of rest (2 yrs) had the highest abundance. Raptor numbers tracked vole abundance closely in 2008. Additional years of study will be necessary to determine the role grazing plays in vole population dynamics.