

**** Mammal Community Response to Cattle Grazing (Poster)**

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The impacts of cattle (*Bos taurus*) grazing on the environment are complex. Chronic overgrazing may inhibit primary productivity and alter vegetation structure and composition, while moderate grazing may increase the quality of vegetation by stimulating new growth and net primary productivity. Numerous studies have estimated the effects of grazing on wildlife demography and behavior, but few have evaluated the effects of grazing on multitrophic communities. Our objective is to identify how squirrel-sized and larger mammals interact with cattle at varying grazing intensities and how cattle affect the structure of the mammal community. Specifically, we aim to determine whether species richness, occurrence, and behavior of mammal species is influenced by the number of cattle, and whether these potential influences cause changes in interspecific interactions among sympatric mammal species. To answer these questions, we set trail cameras 40-50 cm high, unbaited, at random sites within cattle ranches in western Montana representative of the variation in grazing management practices. Throughout spring, summer, and fall, we set trail cameras for at least 21 days at 75 sites per ranch. We will estimate co-occurrence of all potentially interacting mammal species, using a multispecies occupancy model that accounts for imperfect detection, and evaluate how the presence of cattle affects these interactions. We will also monitor species changes in temporal activity patterns in the presence of cattle. Results will identify how mammal communities respond to cattle grazing, which may offer insight into sustainable coexistence among wild and domestic species.