
BRUCELLOSIS IN MONTANA ELK: FACTORS THAT INFLUENCE DISEASE PREVALENCE AND THE SOCIAL AND POLITICAL INFLUENCES AND ISSUES ASSOCIATED WITH MANAGING A DISEASE OF CONCERN FOR LIVESTOCK IN A FREE-RANGING ELK POPULATION

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Brucellosis is a bacterial disease that affects elk (*Cervus elaphus*), bison (*Bison bison*) and domestic cattle. Transmitted primarily through contact with birth tissues, the disease is a significant livestock disease resulting in significant costs to producers and is a USDA eradication program disease. Brucellosis was first documented in wildlife in the Greater Yellowstone Area (GYA) in the early 1900s and was brought into the region by livestock producers. The disease has since been eradicated in livestock, but persists in elk and bison populations of the GYA. Recently the seroprevalence of brucellosis in free-ranging elk populations of Montana has increased and its range has likely expanded resulting in increased pressure on Montana Fish, Wildlife and Parks (MFWP) to manage the disease in elk. We evaluated factors that potentially influence elk aggregation behaviors and the consequences of these factors on seroprevalence. We used a Bayesian spatial model to estimate seroprevalence across the designated surveillance area. This research approach allowed seroprevalence to be estimated for the first time in areas with limited surveillance data. The socio-political influences associated with managing wildlife potentially infected with a disease that threatens the cattle industry of Montana, the available tools for managing the disease in elk, and MFWP's current strategy for managing brucellosis in one of Montana's greatest public trusts is discussed.