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## **ANNUAL TIMING OF ELK ABORTIONS AND POTENTIAL BRUCELLOSIS RISK**

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The transmission of *Brucella abortus*, the bacteria causing brucellosis, occurs through abortion events. In this study, we investigated the timing of those abortion events using

vaginal implant transmitters (VITs) in pregnant elk (*Cervus elaphus*) from the Jackson and Pinedale regions of Wyoming. From 2006 to 2013, we captured 463 pregnant female elk and 136 of those were seropositive (29%, 95% CI = [25, 34]). We had a total of 29 abortion events with 20 percent (95%CI = [13, 29]) of seropositive elk aborting compared to 2.2 percent (95% CI =[0.8, 4.5]) of seronegative elk aborting. VIT data are left-truncated, right and interval censored. We analyzed these data in a Bayesian framework borrowing from the survival analysis literature to estimate the baseline hazard and how it changes during the year. When we conducted a joint analysis of both abortions and births our preliminary results indicated that elk abortions are concentrated in March and April. Only three abortions occurred after 20 May and one may have occurred as late as 10 July. These results are relevant to mitigating the risk of transmission between elk and cattle. Future work can build upon these results to assess the amount of brucellosis transmission risk during the winter on private land compared to public grazing allotments, which are used later in the year.