
****WOLF PACK DISTRIBUTION IN RELATION TO HEAVY HARVEST IN SOUTHWEST ALBERTA**

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Gray wolf (*Canis lupus*) populations are difficult to monitor because wolves can be elusive and occur in low densities. Harvest can further complicate wolf monitoring by affecting wolf behavior, altering pack structure, and potentially reducing probability of detection. Currently, Montana and Idaho use patch occupancy models to monitor wolves at state-wide scales. These models were originally developed prior to the initiation of wolf harvest and there is growing concern that current occupancy estimates are becoming less reliable as harvest continues. Our objectives were to determine whether we could estimate wolf distribution for a heavily harvested wolf population and assess how harvest may be affecting that distribution. We surveyed potential rendezvous sites and collected DNA samples from wolf scats for genetic analysis and surveyed hunters for wolf sightings in southwestern Alberta from 2012 to 2014. We used a Bayesian approach to fit dynamic occupancy models to the encounter histories while accounting for false-positive detections using JAGS and Program R. We found both habitat and anthropogenic factors influenced wolf occupancy parameters in southwestern Alberta and detection probability varied by survey method. Our preliminary results suggest wolf pack distribution is fairly consistent but that source-sink dynamics may be occurring in certain regions of the study area. Despite heavy harvest pressure, southwestern Alberta appears to maintain a stable wolf population, although this is possibly due to immigration from nearby regions.