Occupancy and Fine-Scale Habitat Use of Meso-Carnivore Prey Species in the Sub-boreal Forests of Central British Columbia

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ABSTRACT

Species and populations have different habitat requirements for survival and reproduction, which results in heterogeneous distributions across the landscape. Snowshoe hare (*Lepus americanus*), red squirrels (*Tamiasciurus hudsonicus*), Northern flying squirrels (*Glaucomys sabrinus*), ruffed grouse (*Bonasa umbellus*) and spruce grouse (*Falcipennis canadensis*) all are common meso-carnivore prey items in the sub-boreal forests of Central British Columbia, but surprisingly little is known about their habitat use in this region. A grid of 66 wildlife cameras were placed across the John Prince Research Forest in winter 2014/2015 and 2015/2016 and spring/summer of 2016, providing a wealth of information on the detection and location of the aforementioned prey species. LIDAR data was also collected for the entire study area yielding information on dozens of habitat variables. I will use the presence/absence and LIDAR data to model occupancy (i.e. the proportion of sampling units occupied by the species of interest) and determine the most important habitat types and variables for each of the five study species. This study will fill important information gaps on the habitat needs of this prey community, provide baseline data and analysis for future modeling and monitoring and yield habitat information on the prey base that is important for meso-carnivore management in the region.