

Niche partitioning and habitat use of Rock and White-tailed Ptarmigan in southwest Yukon

Mark Wong, MSc., University of Alberta

Climate change can affect habitat availability and species interactions at several spatial and temporal scales. I explored niche partitioning and spatial variation in sympatric populations of Rock and White-tailed Ptarmigan in southwest Yukon. First, I examined habitat selection of foraging areas and patches within foraging areas and niche partitioning was observed at both spatial scales. At the larger foraging area scale, Rock Ptarmigan used areas of intermediate moisture with a greater proportion of open and closed shrub habitats, while White-tailed Ptarmigan selected areas at higher elevations with intermediate slope angles and less open shrub habitat. At the smaller patch scale, both species selected patches with greater rock cover, but Rock Ptarmigan used patches closer to shrubs with less dwarf willows and White-tailed Ptarmigan used patches closer to snow/water with greater forbs. Second, I examined spatial variation in abundance of both ptarmigan species between the Ruby and Kluane Ranges using pellet counts and transect surveys. Relative abundance was lower in the Kluane Range based on pellet counts, but transect surveys were an inadequate measure of population density. The Kluane Range had fewer degree days (0°C), a greater mean standard deviation of NDVI, and was composed of finer textured colluvium, compared to the Ruby Range, which could influence relative abundance of ptarmigan.