

Effects of the invasive plant spotted knapweed (*Centaurea maculosa*) on grassland arthropod communities: Use of genomic barcoding tools for ecosystem reclamation management

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British Columbia's (BC) grasslands are home to 30% of the province's species at risk and are one of Canada's most endangered ecosystems. In BC's interior, human activities such as mining, recreation, and farming are altering grassland ecosystems, leaving them susceptible to the colonization of non-native invasive species. Alterations to native plant communities and nutrient cycling, which can occur with the invasion of non-native plants, may alter the amount and quality of habitat available for animals at multiple trophic levels, including arthropods. Arthropods are diverse and contribute to energy flow and nutrient cycling and are therefore an important group to study as a way of determining the effects of changes to ecosystem functioning. Spotted knapweed (*Centaurea maculosa*), a perennial forb native to Eurasia, is considered one of the most ecologically harmful invasive species in western North America. The objectives of my study are (1) to determine if spotted knapweed is altering arthropod communities in grassland habitats; and (2) to DNA metabarcode specimens to test recent methodology which could be used to expedite site restoration efforts. To address these objectives I will set up pitfall (ground insect) traps and Malaise (flying insect) traps at sites that are either un-colonized or colonized by spotted knapweed, and DNA metabarcode all specimens collected. Research that adds to our grassland species catalogue can be applicable to both invasive species conservation efforts and in helping to improve remediation efforts in disturbed grassland sites.