

Identifying unique spectral signatures of key grassland species for the purpose of assessing rangeland health

Krista Barton

Supervisors: Dr. Wendy Gardner & Dr. David Hill

Committee Members: Dr. Reg Newman, Dr. Nancy Elliot, & Dr. Lauchlan Fraser

Abstract:

Over 30% of British Columbia's rare and endangered species live in grasslands, an area that due to growing development occupies less than 1% of the Province's land base. Grasslands also play an essential role for cattle grazing due to their high productivity and long growing season. Grasslands are highly sensitive ecosystems that are susceptible to invasive species and other disturbances. Classifying vegetation into plant community types is integral to understanding rangeland plant production and availability for livestock. Range managers can use this information to make broad management decisions. Currently this process requires time consuming field data collection that can only sample a small proportion of the total area. Current remote sensing methods cannot meet the resolution needs of classifying grassland vegetation. My research aims to test the feasibility of using low altitude multispectral imagery to identify and classify grassland vegetation for the purposes of making data collection more efficient and also more accurate. Study sites will be located in the grasslands of the interior of British Columbia. Results of this study are expected to provide an inventory of each species, detailed information on plant community composition and species richness, and detection of invasive species.