

ENVIRONMENTAL SCIENCES SEMINAR SERIES, **WINTER 2025**

Date(s): Feb 13

Speaker: Dr David Hill

Title: High spatial resolution, multi-spectral image analysis for mapping spotted knapweed in grassland ecosystems

Abstract: Lower cost spectral imagers combined with remotely piloted aircraft systems (RPASs) have the potential to drastically improve land and resource management. Data acquired by RPAS-based remote sensing has higher spatial resolution than data acquired by conventional aircraft or satellite-based systems, however, how can these data be best used for mapping invasive plants in a grassland ecosystem. Spotted knapweed is rapidly colonizing the grasslands of BC's interior and new methods for quickly identifying new areas of invasion are critical for management. This presentation explores methods to enrich data collected by relatively low-cost RPAS- remote sensing platforms to improve classification accuracy at the plot scale. Results indicate that textural features, based on second-order spatial statistics, and spatial resolution optimization, combined with feature optimization improve classification accuracy, whereas dataset balancing does not have a significant effect.