



M.Sc. Opportunity in Northern Mine Site Restoration

This is a unique opportunity to join an interdisciplinary project spanning the fields of restoration ecology, soil science, and plant ecology. Revegetation of northern boreal and arctic mine sites is challenged by remote locations, limited top soil resources and access to locally sourced native plant materials. On disturbed sites in temperate and warm arid climates, woody shrubs are known to facilitate establishment and growth of native species by trapping windblown seed, increasing growing season soil moisture, and improving soil nutrient conditions through nitrogen fixation and litter inputs. This technique has not been examined in northern ecosystems and the relative importance of physical versus biological factors in promoting plant establishment and growth is unknown. We will be evaluating the use of abiotic and living vertical structures to facilitate the arrival, establishment and growth of native boreal species. This research aims to better understand the conditions and mechanisms that support recovery of boreal forest plant-soil systems, while providing practical techniques for successful mine site revegetation. Fieldwork will be conducted at a working mine site in Yukon Territory, Canada. This project is partially funded via a MITACS grant with opportunities to work closely with mine company staff.

Anticipated start date of either September 2022 or January 2023.

For more information:

Visit: <https://www.yukonu.ca/research/projects/revegetation-minto-mine>

Dr. Katherine Stewart, Department of Soil Science, University of Saskatchewan:
<https://agbio.usask.ca/faculty-and-staff/people-pages/katherine-stewart.php>

Dr. Guillaume Nielsen, NSERC Industrial Research Chair in Northern Mine Remediation:
<https://www.yukonu.ca/research/research-centre/northern-mine-remediation>

Requirements:

B.Sc. or B.S.A. degree with a concentration in one or more of the following fields: plant ecology, soil science, or restoration ecology.

Application Procedure

Apply via e-mail to Katherine Stewart (Katherine.stewart@usask.ca) with a package including:

- Cover letter describing your background and research experience and interests
- Current CV
- Unofficial transcript(s). A scan or .pdf copy is sufficient.
- An example of your writing (e.g. a paper, extract from a thesis, or class project).