



Masters Research Opportunity in Cold Regions Hydrology

Anticipated Start Date: May 2022

Supervisory Team: Dr. Stephanie Wright and Dr. William Quinton

Degree Program: Master of Science in Geography and Environmental Studies at Wilfrid Laurier University

Rapid warming of northwestern Canada is leading to widespread permafrost thaw which is transforming landscapes and altering surface and subsurface hydrology. Over the last half century, streamflow has been rising at variable rates in many catchments across the Northwest Territories. Local communities have expressed concern of how changing water levels have impacted their traditional way of life. There are strong indications that variations in the rates and patterns of discontinuous permafrost thaw, and resulting changes to groundwater flow pathways, are driving the wide variations in river flow response to climate warming. However, direct, field-based evidence of this is lacking and the underlying processes remain poorly understood which limits effective adaption and mitigation strategies.

The [Scotty Creek](#) research team is seeking an MSc candidate for a funded two-year project examining surface water-groundwater changes driven by climate warming and permafrost thaw in the Northwest Territories. The project includes remote sensing and hydrometric analysis combined with field investigations and community engagement activities. In addition to remote sensing work, the candidate will gain valuable and exciting experience in cold regions hydrology and hydrogeology field techniques including drone surveying, geophysics, isotope/geochemical tracers, and hydrometric monitoring. The successful applicant will also join an inclusive and supportive team of graduate students, technical staff, professors, and research scientists through Laurier's [Cold Regions Research Centre](#).



Applicants should have a background in at least one of the following areas: hydrology, physical geography, earth sciences, environmental sciences, water resources engineering, environmental engineering, civil engineering, or a related field. The ideal candidate will have experience using remote sensing methods and GIS, with an eagerness to engage with community members and conduct remote field work in the southern Northwest Territories.

Candidates who self-identify as Indigenous/Aboriginal, black, and racialized/visible minority persons, women, persons with disabilities, and 2SLGBTQ+ persons are *strongly* encouraged to apply.

How to apply: Interested candidates should contact Stephanie Wright (stwright@wlu.ca) and/or William Quinton (wquinton@wlu.ca) with a CV and brief cover letter describing their interest in this position and related experience. Applications will be reviewed as they are received until a successful candidate is found. For further information regarding the position, contact Stephanie Wright.