

Opportunities for graduate (Msc and PhD) students

Modeling Hydrological Restoration Interventions in minerotrophic peatlands

Canada is home to one-third of the world's peatlands, which are essential ecosystems for carbon sequestration. Restoration of minerotrophic fens is critical in the fight against climate change. Although peat extraction affects only 0.03% of Canada's peatlands, the horticulture industry is leading the way in restoration efforts. Large-scale trials, including the Moss Layer Transfer Technique, have been conducted in Canada with varying degrees of success. This project aims to improve the understanding of the hydrology of these ecosystems in the context of rewetting in order to optimize restoration outcomes. The primary goal is to restore the hydrological connectivity of fens, thereby enhancing their role as carbon sinks.

Project Objectives

The student will contribute to the development of landscape scale hydrological models to simulate different restoration interventions in minerotrophic peatlands. The project will use lidar data and hydrological information from a site impacted by peat extraction in Manitoba to assess the impact of restoration scenarios on the ecosystem while mitigating the risks of flooding and erosion.

Desired Profile

- Master's degree or baccalaureate diploma in ecology, hydrology, environmental engineering, geomatics or a related field;
- Skills in hydrological modeling and use of geospatial data (Lidar, GIS);
- Interest in wetland restoration, peatland ecology, and natural resource management;
- Ability to work independently and in a multidisciplinary team.



UNIVERSITÉ
LAVAL

Conditions

The project will be funded for a period of four (two) years with a financial support of \$27,000 (\$17 500) per year for a PhD (Master). The work will be supervised by Marc-André Bourgault, Professor of Climate Change Risk Geography at Université Laval, in collaboration with Mateusz Grygoruk, Professor in the Department of Hydrology at Warsaw University of Life Sciences, Poland.

Application

Interested individuals are encouraged to submit their applications by October 30:

marc-andre.bourgault@ggr.ulaval.ca

Please use the following subject line:
PhD-Hydrology-Your Name.

The application must include:

- A cover letter
- A resume
- Academic transcripts
- Contact information for two references

