



MASTERS PROJECT IN FOREST ECOLOGY

Title: Reconstruction of historical fire and logging regimes in white and red pine forests

Context and issues: Historically, white and red pine forests were common throughout the southern boreal, temperate, and Great Lakes and St. Lawrence forest regions. However, the cover and extent of their range has declined significantly due to changes in fire regime, unsustainable forest management practices, and increased mortality caused by the introduction of pathogens. To reverse this decline and preserve / restore these ecologically and economically important ecosystems, a research program aimed at developing an ecosystem-based management strategy for mixed and pure stands of white pine (*Pinus strobus* L.) and red pine (*Pinus resinosa* Ait.) at the northern limit of their distribution has been proposed.

Understanding the factors that control fire dynamics and associated ecological processes at the local and regional scale, and through time are crucial for the development of conservation and restoration strategies for red and white pine-dominated forest ecosystems, and may also facilitate understanding of how these tree species may react to projected changes in climate and fire regime. The objective is to reconstruct historical fire (both high and low-severity fire events) and logging regimes to quantify their effects on forest structure and functionality over time, and by extension, assess ecosystem resilience to changes in climate and disturbance regime.

Admissibility requirements: An undergraduate degree (or equivalent) in forestry, biology, or other related discipline is required. Knowledge of principles of dendrochronology and historical fire reconstruction is considered an asset.

Start date : January 2021.

Location : The student will be based at the Forest Research Institute (l'Institut de recherche sur les forêts), UQAT, Rouyn-Noranda, Québec. Fieldwork will be conducted in Parc Opémican, located roughly 1.5 hrs south of Rouyn Noranda.

Funding : Scholarship of 17 500 \$/year for two years.

Supervision : Yves Bergeron (UQAT) & Igor Drobyshev (UQAT).

To apply : Please send the following information by email to the attention of Igor.Drobyshev2@uqat.ca :

- 1) a cover letter describing your research interests and your experience related to the position;
- 2) your curriculum vitae;
- 3) your most recent transcripts;
- 4) the contact details of 2 references.



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