

## **Extent and causes of a mortality episode in the black spruce forests of the North Shore region of Quebec, Canada**

Offer: Master's degree (MSc.)

Salary: Full annual scholarship

Host institution: University of Québec in Montréal, Montreal, QC, Canada

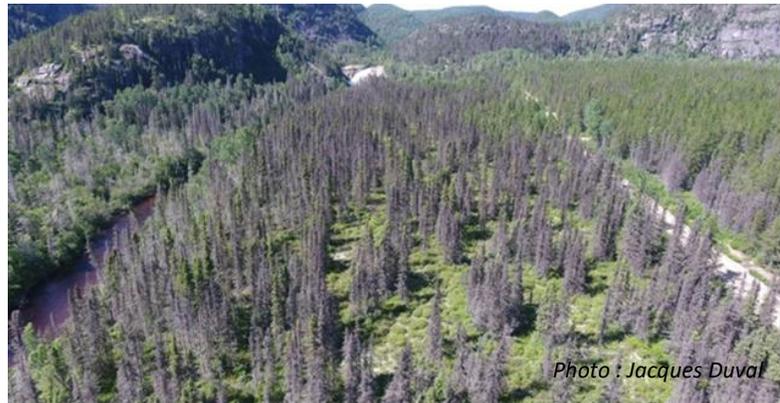
Secondary workplace affiliation: Laurentian Forestry Centre, Quebec City, QC, Canada,

Themes: Environment - Ecology - Forestry

Application deadline: August 30, 2022

### **Description of masters topic:**

Since 2006, a spruce budworm (SBW) outbreak has been affecting trees on the North Shore of Quebec where several million ha of forest have been defoliated. Although balsam fir is the most vulnerable host species, black spruce may also be defoliated and die but to a lesser extent. Climate stresses have been increasing over the past few decades and may also contribute to species decline and mortality. In order to monitor the combined effects of climate and the outbreak on the forest ecosystem, a project was initiated in 2006 on the North Shore in vulnerable stands. Until 2019, despite significant defoliation of black spruce observed in these plots, mortality of this species remained low. However, in subsequent years, mortality has accelerated in several spruce stands, affecting in some cases the majority of the tree basal area in the stands.



*Photo : Jacques Duval*

The cause(s) of this mortality, as well as its spatial extent, are unknown at this time. We are therefore seeking to train a scientist (MSc.) interested in boreal forest ecology to evaluate the effect of site factors, composition of target stands and surrounding stands on black spruce mortality rates. The student will have the opportunity to do a summer of fieldwork in the beautiful North Shore region.

### **Context:**

The student will be part of a multidisciplinary team composed of researchers from different universities, the Forest Research Branch of the MFFP and the Canadian Forest Service (Laurentian Forestry Centre), representatives from the Innu community of Pessamit and MFFP practitioners on the North Shore.

We encourage all applications and offer an open, inclusive and equitable work environment. We are a dynamic, multidisciplinary, multi-age research team that doesn't take itself too seriously but that nonetheless invests in rigorous science! We will offer a full scholarship to the successful candidate.

Kaysandra Waldron of the Canadian Forest Service and Daniel Kneeshaw at UQAM leads this project, in collaboration with Dominique Boucher of the Canadian Forest Service, Stéphane Tremblay of the Direction de la recherche forestière du MFFP and Louis De Grandpré of Territoire et ressources Pessamit.

Interested parties can send their CV, letter of interest and transcripts to Kaysandra Waldron (kaysandra.waldron@NRCan-RNCan.gc.ca) and Daniel Kneeshaw (kneeshaw.daniel@uqam.ca).