Master's of Environmental Studies Opportunity at Dalhousie University
(May or Sept 2026-August 2028)

Topic: Investigating impacts of ecological forestry on sustainability of tree-to-customer pathways in Nova Scotia

Research Project

In 2022, Nova Scotia shifted away from clearcutting towards an ecological forestry model that uses uneven-aged management approaches (*Nova Scotia Silvicultural Guide for the Ecological Matrix 2021*). The province has been praised for moving to a model that may be more ecologically appropriate for the Wabanaki (Acadian) forest, however, consequences for the forest industry and non-forest environmental impacts are unknown.

For their Master's thesis, the student will: (1) quantify the industrial activity-related greenhouse gas (GHG) emissions of Freeman Lumber's sawmill operation supply chain from tree to customer and identify opportunities for GHG reduction; and (2) propose a second study for examining how changing forest management regimes and/pr silvicultural prescriptions impact forestry economics in Nova Scotia more broadly. Specific details and expectations the first objective is given at the end of this document, and the student will have considerable latitude to explore the second objective based on their own interests (e.g. from a quantitative or qualitative perspective, using economics or sociology or GIS).

Stipend and qualifications

A minimum of $25,000 to $30,000 of stipend support will be available per year**,** contingent on a **successful application to the Mitacs Accelerate program.** The student will be expected to lead the application and will be supported by your supervisor, Dr. Alana Westwood and the project's industrial partner, Freeman Lumber. You will be expected to apply for scholarships to augment this stipend up to the annual maximum determined by the Westwood Lab agreements. You may also increase your pay above your stipend by taking on research and teaching assistantships as available.

Qualified candidates *must have* an undergraduate degree with either an Honour's thesis or significant research experience (e.g. capstone projects, work terms) related to environmental sciences or studies, forestry, economics, sociology, natural resources, or an allied discipline. Students must meet the requirements of Dalhousie's MES

program and submit an application. Candidates must be able to complete field work independently (rugged terrain in all weather conditions). **A valid driver's license is required.**

Working Environment

As a requirement of the Mitacs Accelerate program the the student will work as an intern with Freeman Lumber on both thesis related data collection and, as needed, on other parts of Freeman Lumber's operations. This will provide significant exposure to modern forest industry practice. During internship periods (May-August), students must be able to provide their own transportation to be on-site for work in Greenfield, NS. Company housing provided if desired, but students will be responsible for their own transportation to nearby grocery stores, pharmacies etc. as no public transit is available.

The student will be part of the Ecological Forestry Research Initiative (EFRI), a dynamic partnership across institutions. They will have opportunities to participate in conferences, training, and networking with the larger EFRI team, and participate in research direction steering committees. The student will be a member of the School for Resource and Environmental Studies community and the Westwood Lab.

Diversity, equity, and inclusion

Dalhousie University commits to achieving inclusive excellence through continually championing equity, diversity, inclusion, and accessibility. The university encourages applications from Indigenous persons (especially Mi'kmaq), persons of Black/African descent (especially African Nova Scotians), and members of other racialized groups, persons with disabilities, women, persons identifying as members of 2SLGBTQ+ communities, and all candidates who would contribute to the diversity of our community. For more information, please visit www.dal.ca/hiringfordiversity.

How to apply

If you are interested in this position please send your CV, unofficial transcripts, and a one-page cover letter detailing your past research experience and why you are interested in the project to EFRI coordinator Revant Sharan (efri@dal.ca).

Applications will be accepted immediately and interviews will begin on a rolling basis until the position is filled.

Detailed Description of Thesis Researcher Objective 1:

Harry Freeman & Son Limited (Freeman Lumber) Forest Operations Greenhouse Gas Emissions Project

Founded in 1832 in Greenfield, NS, Freeman Lumber has evolved from a small water-powered sawmill to one of the largest, most modern and flexible sawmills in Eastern Canada. As part of our commitment to sustainable forestry, we are developing a project to identify and address greenhouse gas emissions across our operation. We wish to quantify our emissions, identify best opportunities for reduction, and develop a manageable tracking and monitoring system.

Scope

The emissions inventory will include **all steps of the lumber supply chain from tree – customer.**

- silviculture: site preparation and mechanical thinning equipment
- operations: harvesting, forwarding and road building equipment
- processing: milling, planing, and drying equipment
- transportation: trucking from woods – mill – customer

Steps

1. Gathering of information on fuel consumption and equivalent CO_2 emissions
2. Identify opportunities for reduction (changes to operational processes and practices)
3. Develop a reporting system, including the format and frequency of reporting
4. Implement a monitoring program to evaluate the effectiveness of reduction measures