



INFORMATION ON THE COMPLETED PROJECT CONTRIBUTION AGREEMENT

How Wood Characteristics of Black Spruce Can Affect Its Quality

Logging damage in northern-tolerant hardwood forests, exacerbated by repeated harvesting and climate change, threatens long-term stand yield, quality, and species composition, highlighting the urgent need for innovative solutions to ensure sustainable forest management.

PROJECT TITLE

Effects of Logging Damage on Tolerant
Hardwood Yield

ORGANIZATION

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CONTACT

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START DATE

December 1st, 2023

END DATE

March 31st, 2025

The main method for managing northern-tolerant hardwood forests in Canada is single-tree selection, which involves selective logging every 20 to 30 years to maintain a steady supply of timber. This approach aims to balance timber production while preventing the growth of shade-intolerant species by removing approximately one-third of the trees. However, this method can lead to logging damage because there is often a lot of leftover timber. There has been little research on how this damage affects the overall health, quality, and makeup of the forest. Additionally, climate change is changing the traditional winter harvest period.

This project, which builds on a long-term research network in Ontario that was established in 2001, aims to study:

- (i) How logging damage impacts the health, quality, and makeup of the forest
- (ii) How the timing of harvest affects forest dynamics and logging damage
- (iii) How the remotely piloted aerial systems (RPAS) can be used to predict tree quality, forest yield, and species composition in forests with uneven tree sizes

The results will help set tolerances for logging damage, improve yield predictions in tolerant hardwood forests, tackle issues related to shorter winter harvest periods, and create a framework for using the RPAS in assessing these forests.