



# 2BILLION TREES

## 2 BILLION TREES SCIENCE

### Research in Support of Tree Planting

NOTE 10

## Monitoring forest recovery in Canada's forested ecosystems

#### LEAD RESEARCHER:

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#### CFS CENTRE:

Pacific Forestry Centre

#### PROJECT LOCATION:

National

#### Project Drivers

The 2 Billion Trees (2BT) program supports monitoring work and efforts to provide baselines and expectations for forest post-disturbance recovery to inform planting and management decisions. Data on rates of natural regeneration and recovery after disturbances will help identify opportunities for improved carbon sequestration through reforestation. This research project will explore the relationships between detailed, mapped measures of forest recovery derived from remotely sensed data and point-based assessments of post-fire recovery using field plots. It will also conduct a landscape-level analysis of recovery to determine the influence of forest management on post-disturbance recovery.

#### Project Approach

Novel national forest recovery information products that characterize post-disturbance recovery for Canada's forested ecosystems, including spatial hotspots of slower than expected recovery (1985 to 2017), were generated in 2021 to 2022. The first objective of this project will compare field-measured assessments of post-fire recovery with long-term measures of spectral recovery derived from remotely sensed data. The second objective of this project involves a landscape-level assessment in a region of southeastern British Columbia, which represents an actively managed forest area with a history of both fire and harvesting disturbances. This study will quantify differences in recovery rates by disturbance type and treatment and examine potential drivers associated with different rates of recovery (i.e., topographic factors, pre-disturbance composition, disturbance severity, distance to potential seed sources, etc.). It will also identify areas with slower than expected recovery and assess their accessibility and potential for future reforestation activities.

#### Anticipated Outputs and Impacts

The project team will publish a peer-reviewed scientific publication based on results from the study. This research project will provide new scientific understanding regarding how spectral measures can be integrated with recovery trends derived from field plot data and how they can be used to support landscape-level planning and monitoring efforts. The knowledge that results from this research will support the 2BT program by helping to inform site selection. It will also support monitoring efforts to improve restoration success.