Natural Resources Canada | Ressources naturelles Canada

Stakeholder engagement favours adoption success and social acceptance in Canadian forestry

Examples of transformative remote sensing and genomics technologies

IUFRO Conference, Christchurch, NZ

Lise Caron

September 2018

Canada

Overview

- Canada's forest system
- The role for the Canadian Forest Service
- Adoption of transformative technologies

  → 2 examples

  Remote sensing

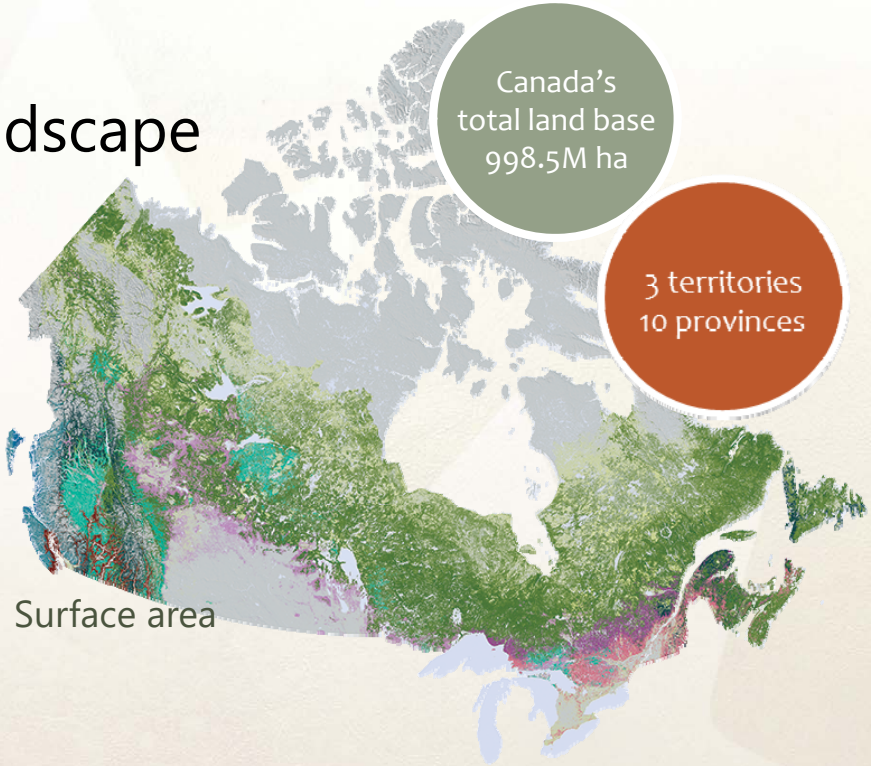
  Genomics

Canada's Forests

A diverse forested landscape

9% of the world's forests

24% of the world's Boreal forests



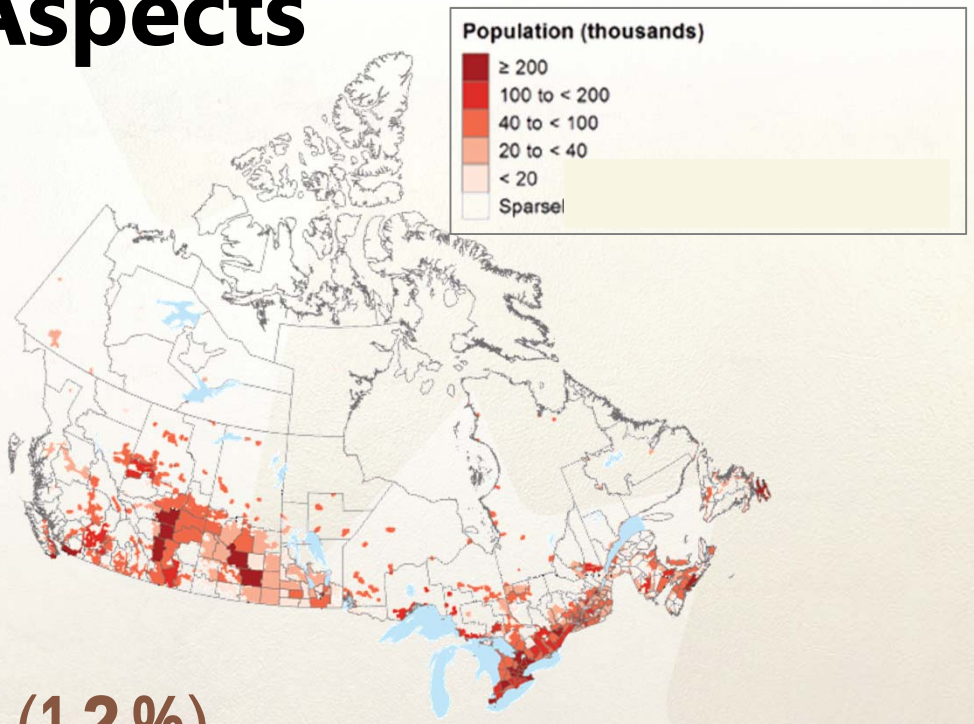
396M **ha** of total forested area : **1/3** Surface area

92 % public

Socio-Economic Aspects

33% of Canadians live in or adjacent to forested areas

70% of Indigenous peoples live in or adjacent to forested areas



306,075 forest industry jobs (2016)

(CAN) total forestry industry contribution to GDP in 2016 **$23.1 B (1.2 %)**

The Canadian Forest Service

Vision

An innovative, globally competitive forest sector—rooted in sustainable forests—creating prosperity for Canadians

Transformative Technologies

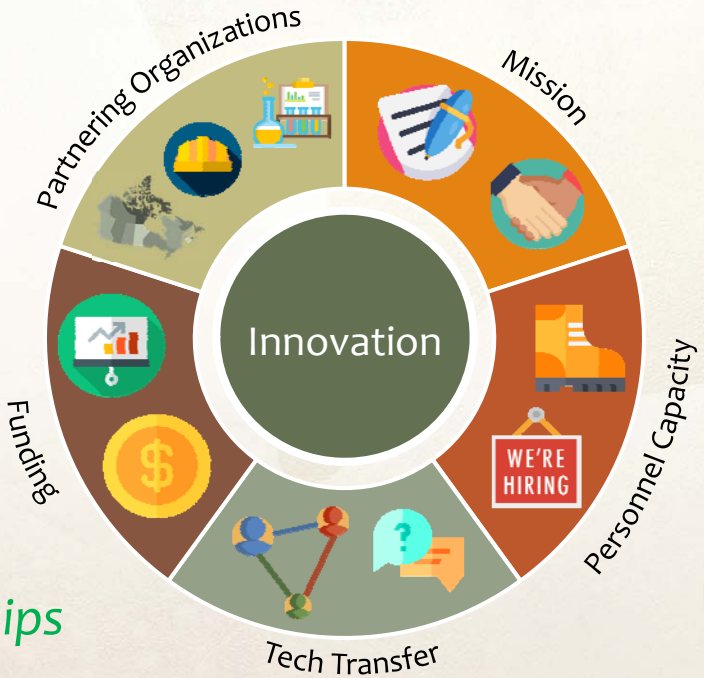
Two Current Examples

Remote sensing

accurate spatial inventory systems to quantify forest resources

Genomics

selection of trees for wood quality and resilience to climate change



Innovation Adoption via Partnerships

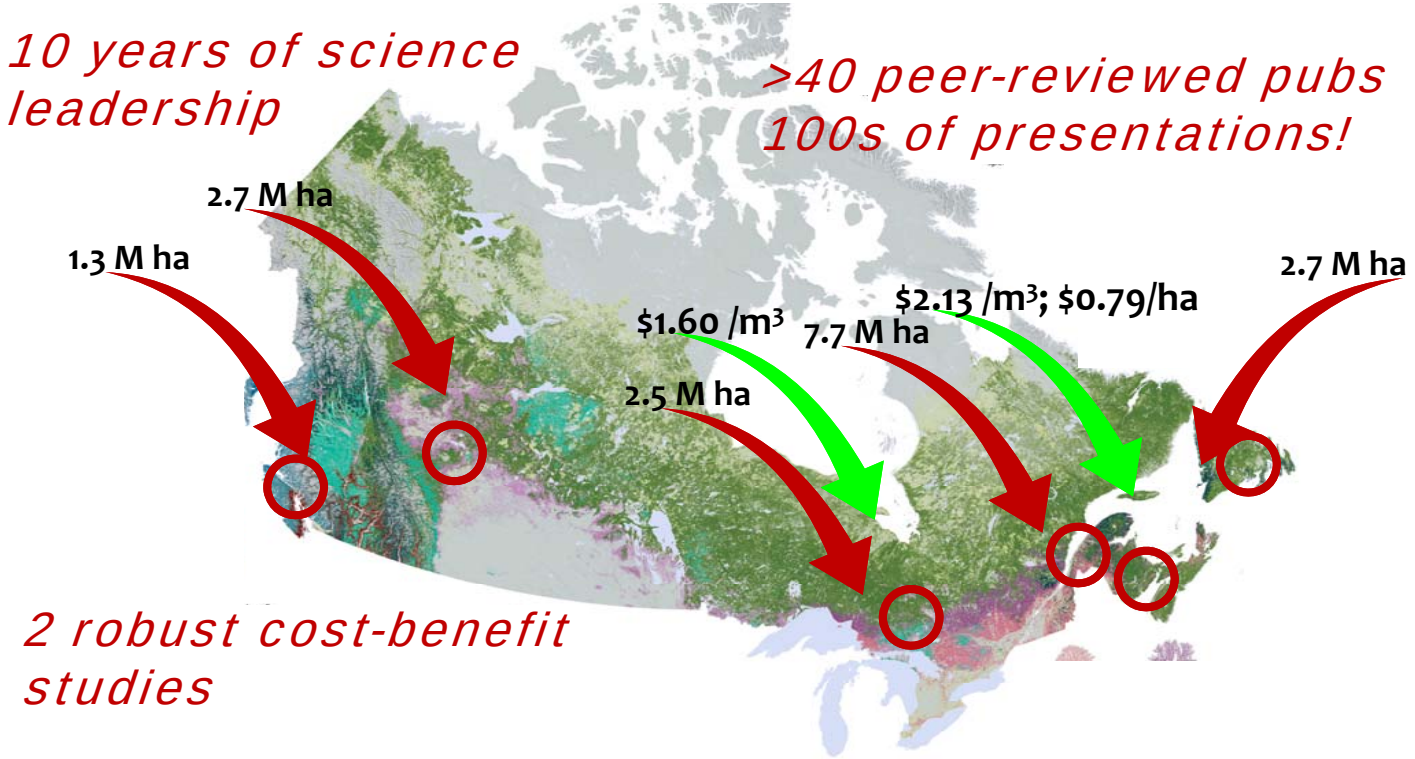
Example no. 1 Remote Sensing

a multi-partner effort to develop a technique known as enhanced forest inventory (EFI)

Mission

Resolve a nagging forest management problem: how to provide an accurate and precise forest inventory on a forest manager's desktop.

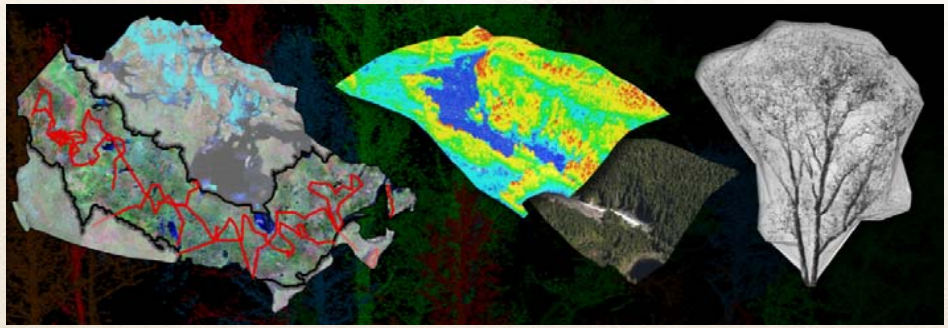
How we get there?
Success reflected in uptake…

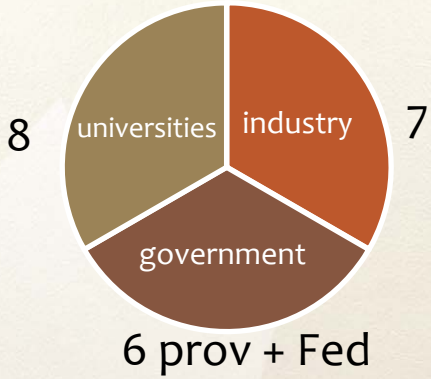


AWARE Assessment of **W**ood **A**ttributes from **R**emote s**E**nsing

Enhanced forest inventories based on LiDAR and imagery

$3.5 M contributions and funding over **five years**



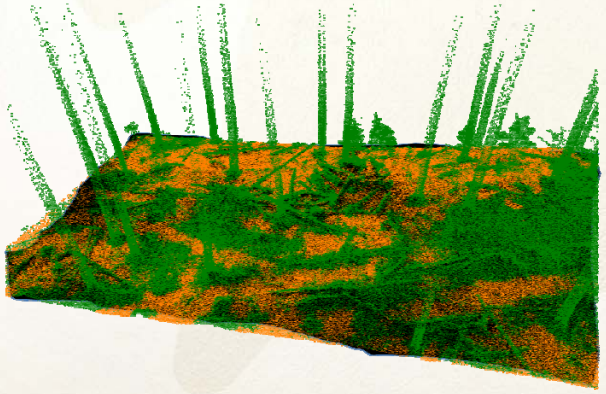


CWFC proof of concept at operational scale

So what?

- User-focused approach
- Cost-benefit assessment
- Highly qualified personnel for adoption capacity
- Success through partnerships
- Spin-offs (inventory services)

→ Increased public confidence in forest management



Example no. 2 Genomics

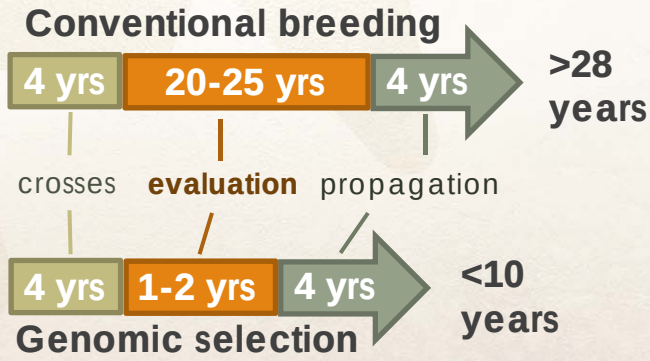
a multi-partner effort to hasten the time for selecting the best trees

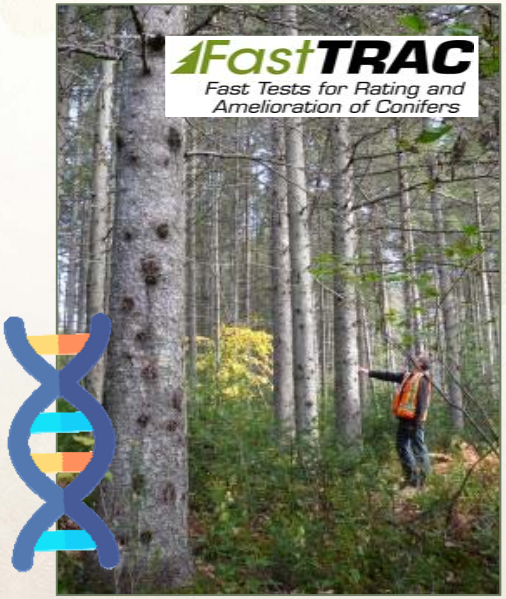
Mission

Increase the tree selection process performance using novel technology tools.

FastTRAC **Fast** Tests for **R**ating and **A**melioration of **C**onifers

- Shorter selection time
- Rapidly develop planting stock
- Wood quality & resistance traits





FastTRAC

- $3.3 M over 3 years
- Industry, provinces, university partnership
- Proof of concept at operational scale
- CWFC - 15+ years of research into DNA markers and genomic selection

So what?

- Researchers and tree breeders working together
- Cost-benefit analysis supports investment decisions
- Genomic selection to enhance selection of natural traits
- Shared results with other improvement programs

→ Public confidence in reforestation programs

Recipe for Success

- Multi-stakeholder approach
- Proof of concept based on sound-foundational research
- Cost-benefit considerations
- High Qualified People Development for adoption capacity

→Translating Science to Business to public confidence

Acknowledgement -AWARE

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Québec
Direction des inventaires forestiers

Newfoundland Labrador
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