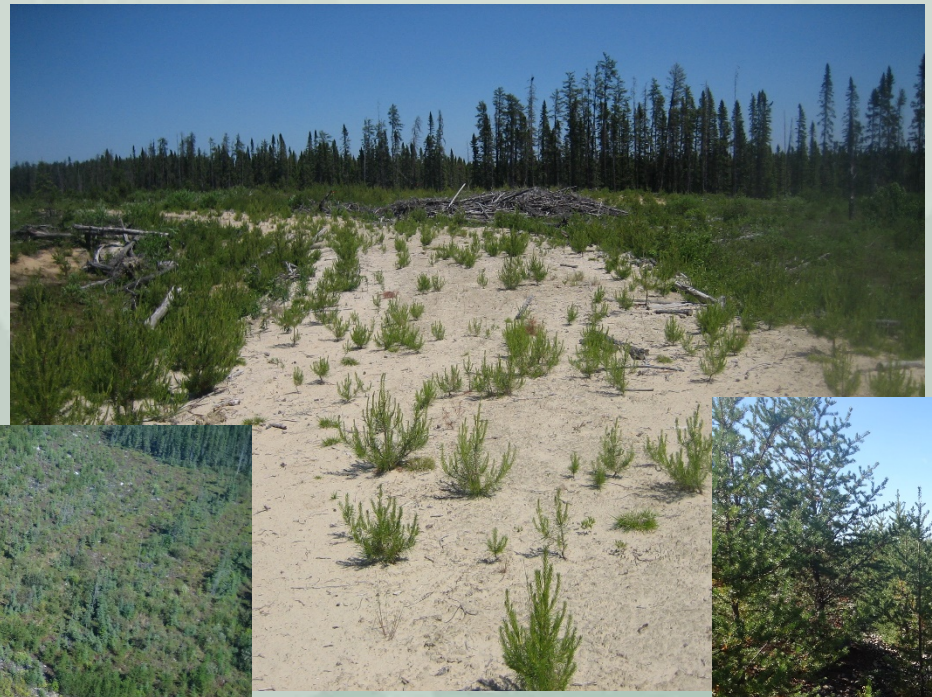
Decommissioning and Reclamation of Forest Access Roads in Northwestern Ontario



Silviculture Symposium
March 21, 2017

Outline

- Road decommissioning and reclamation
- Northwestern Ontario Case Studies
- Best Management Practices
- Roadshed approach for determining treatment intensity

Road Decommissioning & Reclamation

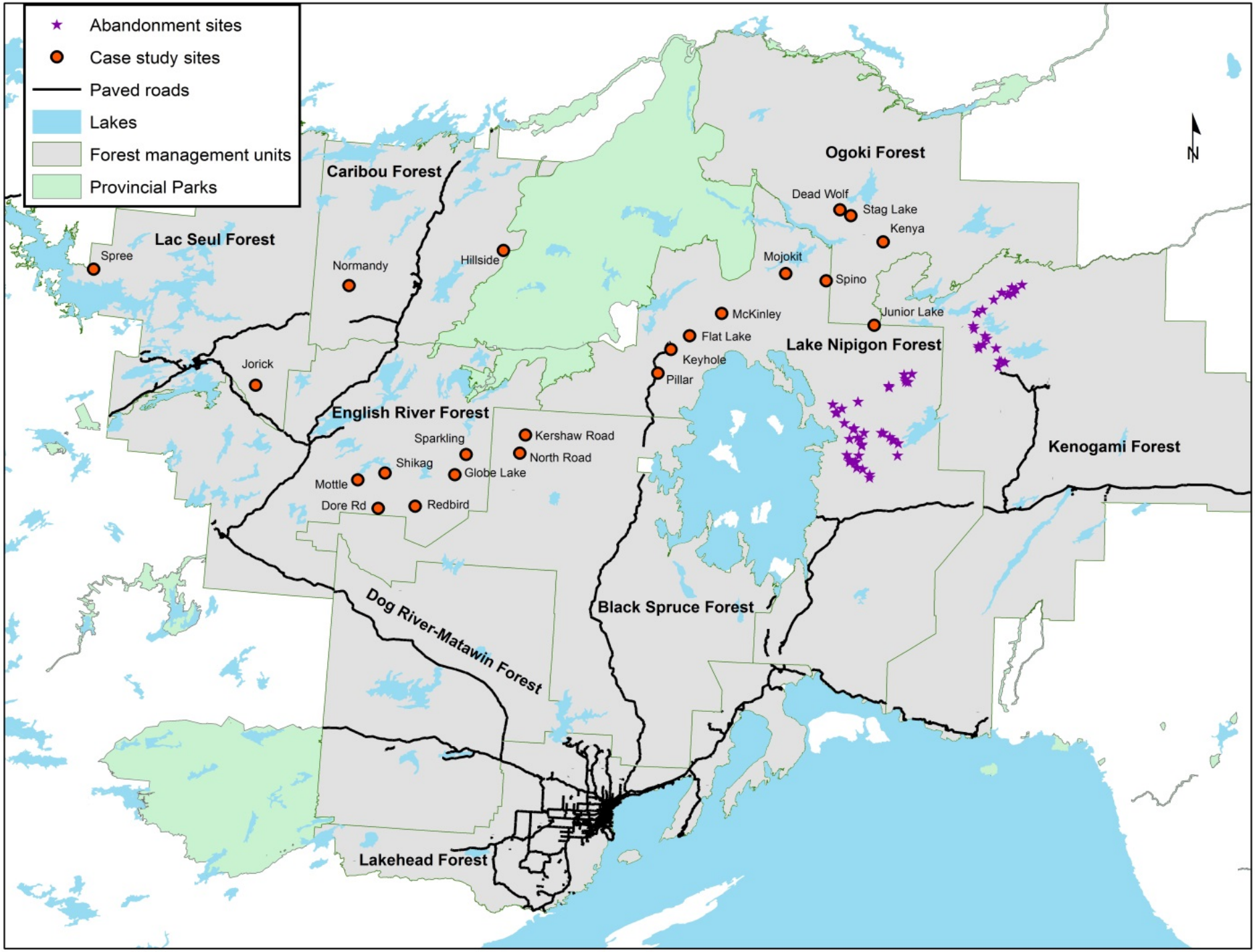
- DECOMMISSIONING – the physical work required to make the road impassable to vehicles, enhance public safety, and reduce potential environmental damage (FMPM 2009)
- RECLAMATION – returning disturbed land to its former or other productive use or equivalent land capability (Powter 2002)

Why Decommissioning & Reclamation?

- Protect remote tourism values
- Protect fish/wildlife populations
- Enhance woodland caribou habitat by reducing cumulative impacts at a range level
- Minimize loss of productive land

Case Studies – Summer 2011

- Surveys undertaken by CNFER's Boreal Silviculture program
- 22 sites in NWO
- Regeneration on roads/adjacent cuts assessed using WSFG methodology
- Shrub cover, ground vegetation, soil type, road and adjacent cut forest type
- Travel Impediment
- Wildlife use
- Traffic use


Abandonment sites
Case study sites
Paved roads
Lakes
Forest management units
Provincial Parks
N
Ogoki Forest
Caribou Forest
Lac Seul Forest
Lake Nipigon Forest
English River Forest
Kenogami Forest
Black Spruce Forest
Dog River-Matawin Forest
Lakehead Forest
Spree
Normandy
Hillside
Jorick
Dead Wolf
Stag Lake
Kenya
Mojokit
Spino
McKinley
Junior Lake
Flat Lake
Keyhole
Pillar
Sparkling
Kershaw Road
North Road
Shikag
Globe Lake
Mottle
Dore Rd
Redbird

BEST MANAGEMENT PRACTICES

Species Selection

- Choose pine species (i.e., jack pine, red pine) over spruce species when reclaiming graveled roads
- Spruce may be a suitable species to use on roads with minimal aggregate and high amount of exposed parent soil material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Access Management

- Prevent vehicle access to recently re-forested roads to improve regeneration survival and growth

Historic Road Use

- Consider applying multiple access controls to remove roads used often to access recreational opportunities (e.g., angling and hunting)

Progressive Treatment

- Treat as many in-block roads as operationally feasible at time of adjacent block treatment
- If using SIP, recommend aligning trenches perpendicular to road

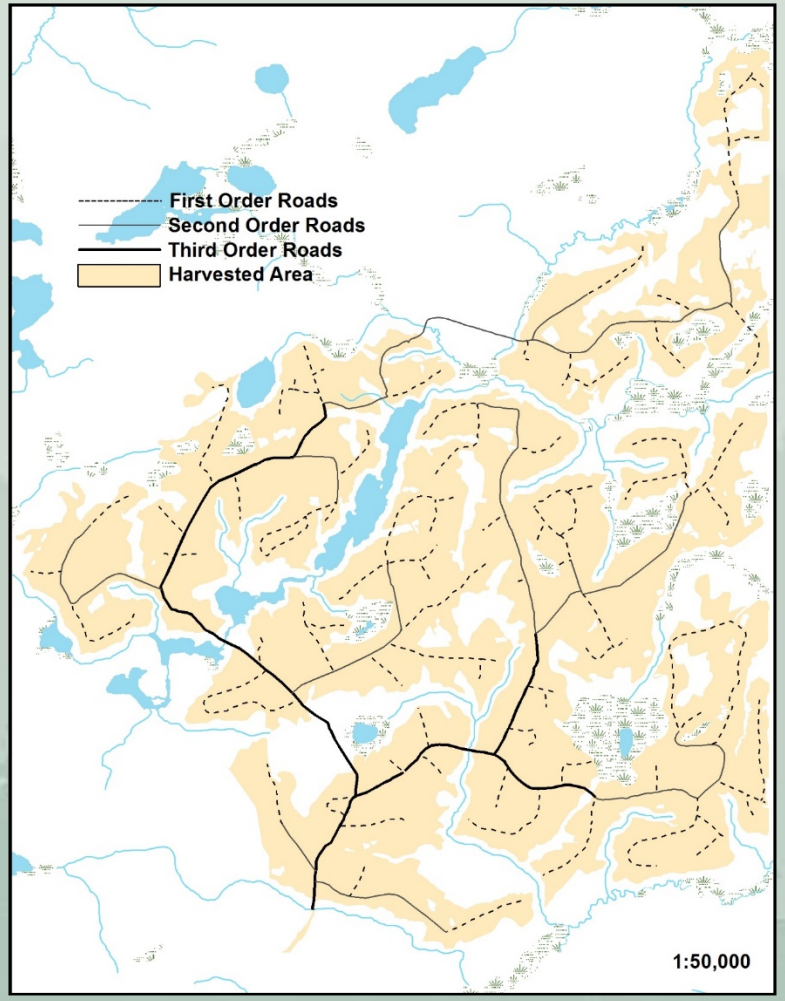
Site Amelioration

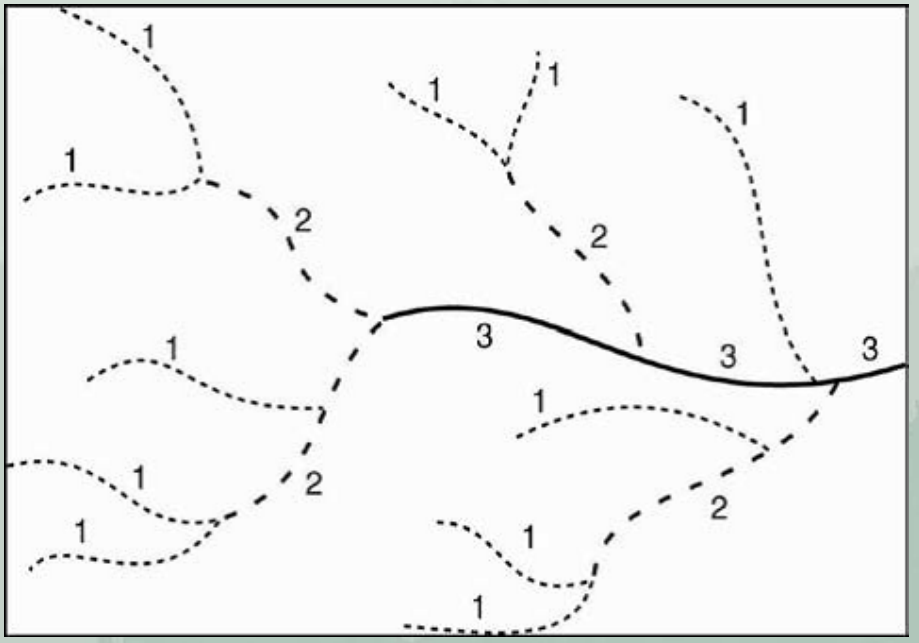
- Pull back roadside slash/organic matter onto road surface to improve microsite conditions and impede vehicular use of road to increase
- Coarse and fine debris organic matter has a mulching effect to maintain adequate moisture for seed germination and seedling establishment

Winter Roads

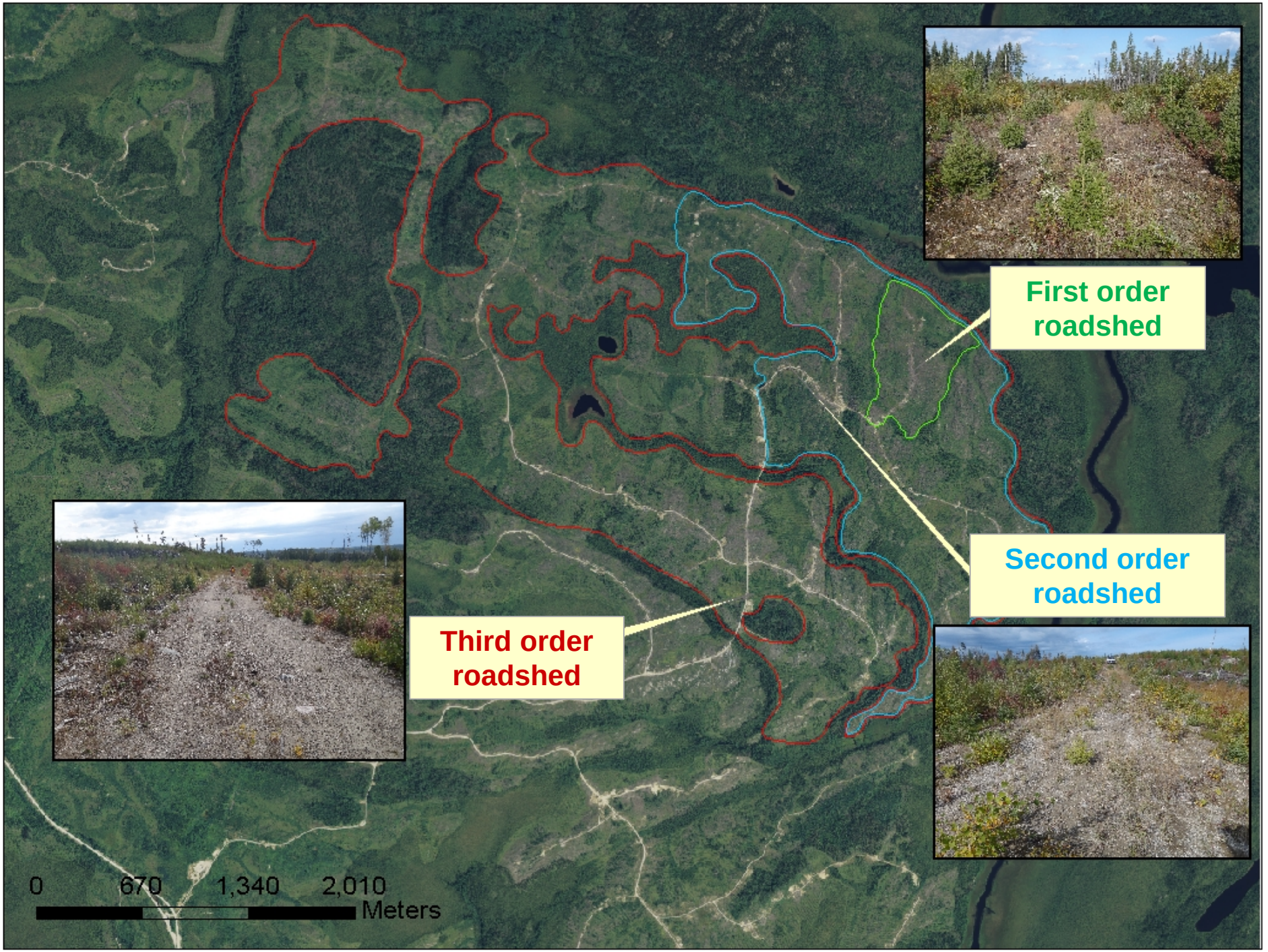
- Where operationally feasible, use winter roads to access wood

ROADSHEDS: AN APPROACH TO DETERMINE TREATMENT INTENSITY





Strahler (1952) stream order classification of a watershed


First order roadshed
Second order roadshed
Third order roadshed
0
670
1,340
2,010
Meters

First Order Roads

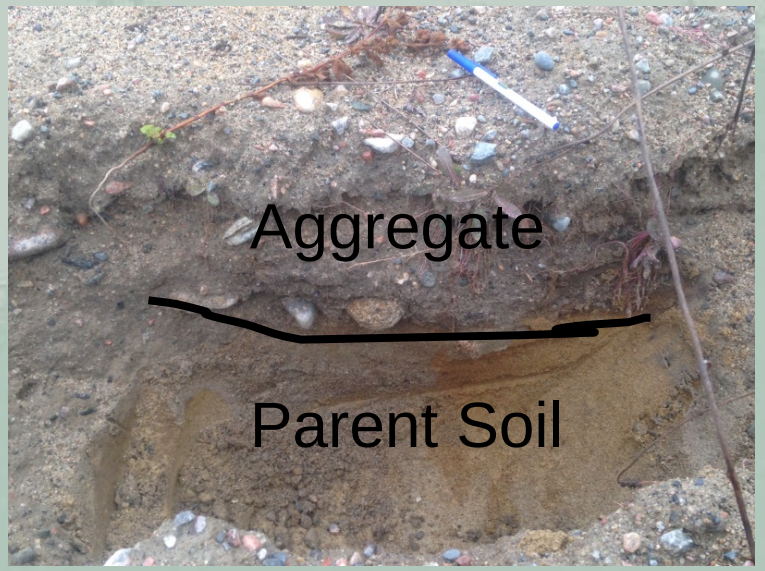
- FMP operational roads (includes winter roads)
- No to low gravel, mostly exposed parent material with organic debris
- No roadbed (constructed by removing duff layer)

Second Order Roads

- FMP branch or operational roads
- Shallow layer of gravel with some patches of exposed parent material
- Low to moderate compaction
- Little roadbed construction

Third Order Roads

- FMP branch or primary roads
- Highly gravelled (>30 cm in depth)
- Heavily compacted
- Built up roadbed



Suggested treatment options	First order roads	Second order roads	Third order roads
Site preparation (SIP)/ decompaction	• Passive or powered mechanical SIP at time of treatment of adjacent block • Non-mechanical SIP (screefing) • None	• Passive or powered mechanical SIP at time of treatment • Mechanical decompaction with brush rake mounted on a crawler tractor	• Mechanical decompaction with excavator with standard bucket • Mechanical decompaction with ripper tooth mounted on a crawler tractor
Renewal	• Natural regeneration • Planting of pine or spruce species • Aerial seeding of jack pine • Shelter cones	• Planting of jack or red pine • Aerial seeding of jack pine	• Planting of jack or red pine • Aerial seeding of jack pine
Site amelioration	• Not required	• Dragging slash/organic material onto road bed • Mixing larger slash, boulders, and rocks into excavated berms	• Dragging slash/ organic material onto road bed • Mixing larger slash, boulders, and rocks into excavated berms

Regeneration along forest access roads in response to various treatments applied in northwestern Ontario

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QUESTIONS