

THE INDUSTRIALLY IMPACTED BOREAL FOREST OF ONTARIO

LOGGING SCARS



trip report and project preview



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LOGGING SCARS

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I've just returned from an intense little summer trip of exploring a part of Ontario that most people will never have the opportunity to see. If you knew me, you might not even roll your eyes to know that the places that I visited are highly unlikely to trigger a tourist rush....



Instead, in great company, I put in several thousand kilometres driving, mountain-biking and hiking along dusty logging roads in northwestern Ontario, and camping in the heart of Canada's boreal forest.

But, tempting as the millions of lakes and the rivers and the beautiful parks of this area truly are, I was there to visit old clearcuts instead.

Clearcuts are large areas of forest where industrial logging has occurred. Areas where 2x4s, newspapers, and toilet paper in North America have come from for generations.



In my career in wilderness advocacy, one spends a great deal of time poring over satellite images, and mesmerized from the windows of small planes flying over this vast boreal landscape that spans Canada. It is a carbon-rich blanket of sturdy coniferous-dominated forest adorned with countless brilliant lakes and spectacular wetlands. It is truly a globally significant treasure.



After a decade of doing this work, a peculiar pattern continues to stare back at me whenever I look over areas of this forest that we have logged. It is a startling pattern of...

logging scars.





I have a 9 year old daughter. Her nickname is “boo-boo” - and she’s earned it. I have held her in my arms tightly through two separate sets of stitches from kid stunts: a matching set, one above each eye.

Stitches have that distinctive pattern of thread and gap, thread and gap, all along a neat line. Healing can take a long time, and often that stitch pattern persists.

So too are the scars that I see in the boreal.

Widespread, and dense lines of persistent logging roads, stitched by regular rectangles of roadside operating areas, or “landings”.





These landings are areas where trees were piled after being dragged in bunches from where they were felled. There, more heavy machinery worked up and down the piles compacting the soil while stripping the trees of their trunks to be hauled off to the mills.



Decades later, these areas still contain a highly visible legacy. Full-tree logging, the form of logging that has dominated the industry in Ontario (+/-90%)¹ over the past 50 years produces a very large amount of unwanted waste material, and concentrates it along the logging roads: 30-40% of the trees cut, by one estimate.²

Here it remains in various forms - neat piles of unwanted stems, several feet high, bleaching in the sun, and slowly rotting from the bottom. Or piles of branches and "tops" (the highest part of the stem, too small to be of value), variously scattered, piled, partially burned, or chipped into a creeping blanket spreading from the roadside.



Sometimes, the waste is just barely visible under a light green iridescent blanket of low shrubs or berry bushes.

Still more effects also contribute to the scars along these logging roads. Wide ditches, where material was either “grubbed” to help build the road or for drainage; roadside pits for sourcing road gravel; and various “pull-offs” for heavy equipment movement, maintenance, or staging.

What all of these impacts have in common is that they are highly evident on the landscape decades later, and stand stark against the renewing forest around them for their relative lack of developing trees.



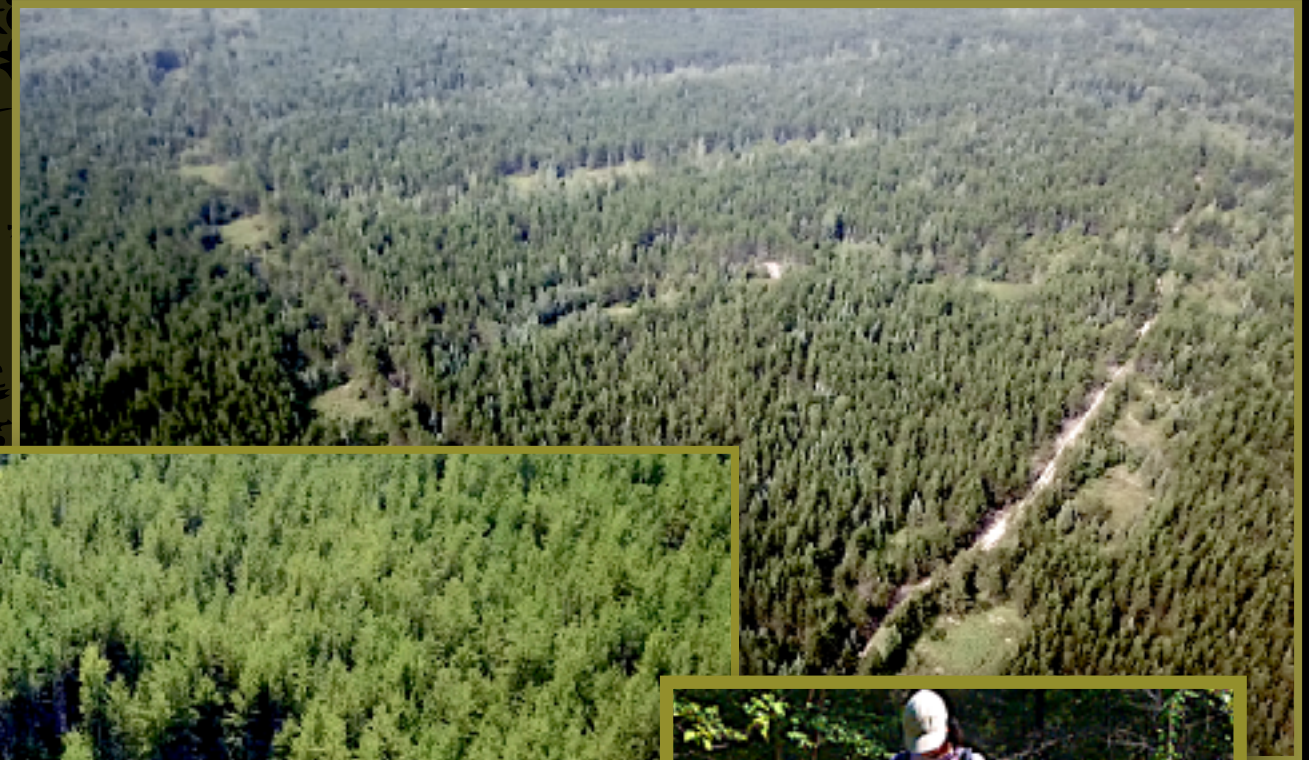


So what? Perhaps it seems obvious that we cannot extract resources without leaving some mark on the ecosystem. And, we are assured by our logging industry and their regulators that trees logged from this commercial forest are entirely renewed.

So, is what I am seeing just an interesting... signature in the forest?

I don't think so. From what I have seen, I believe that these scars exhibit a more expansive, longer lasting, and deeply wasteful legacy.





Sampling involved selecting sites from satellite imagery, then accessing them on the ground, via truck, mountain bikes, or hiking as conditions required. At the selected sites, ground surveying was undertaken with geo-referencing, species documentation, and ground and arial photography to characterize satellite reflections.

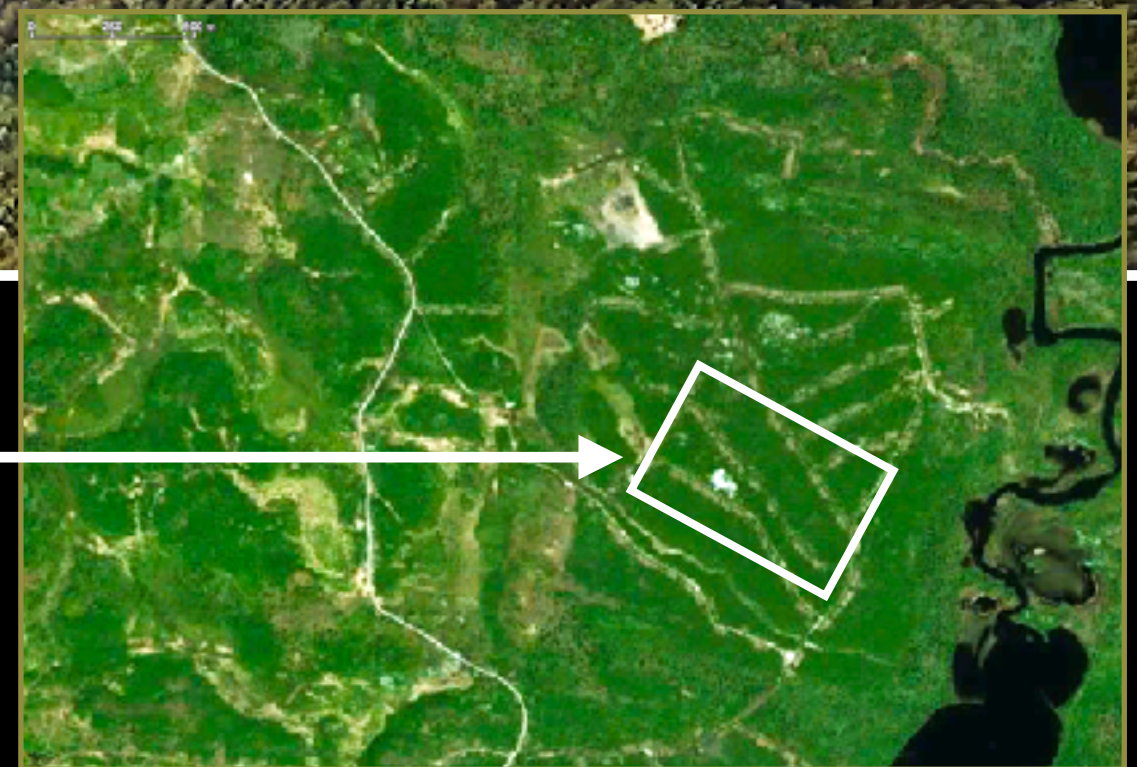


30 yrs

cut in 1990



These roads and landings
correspond with the footprint signals
evident on recent satellite imagery



Findings

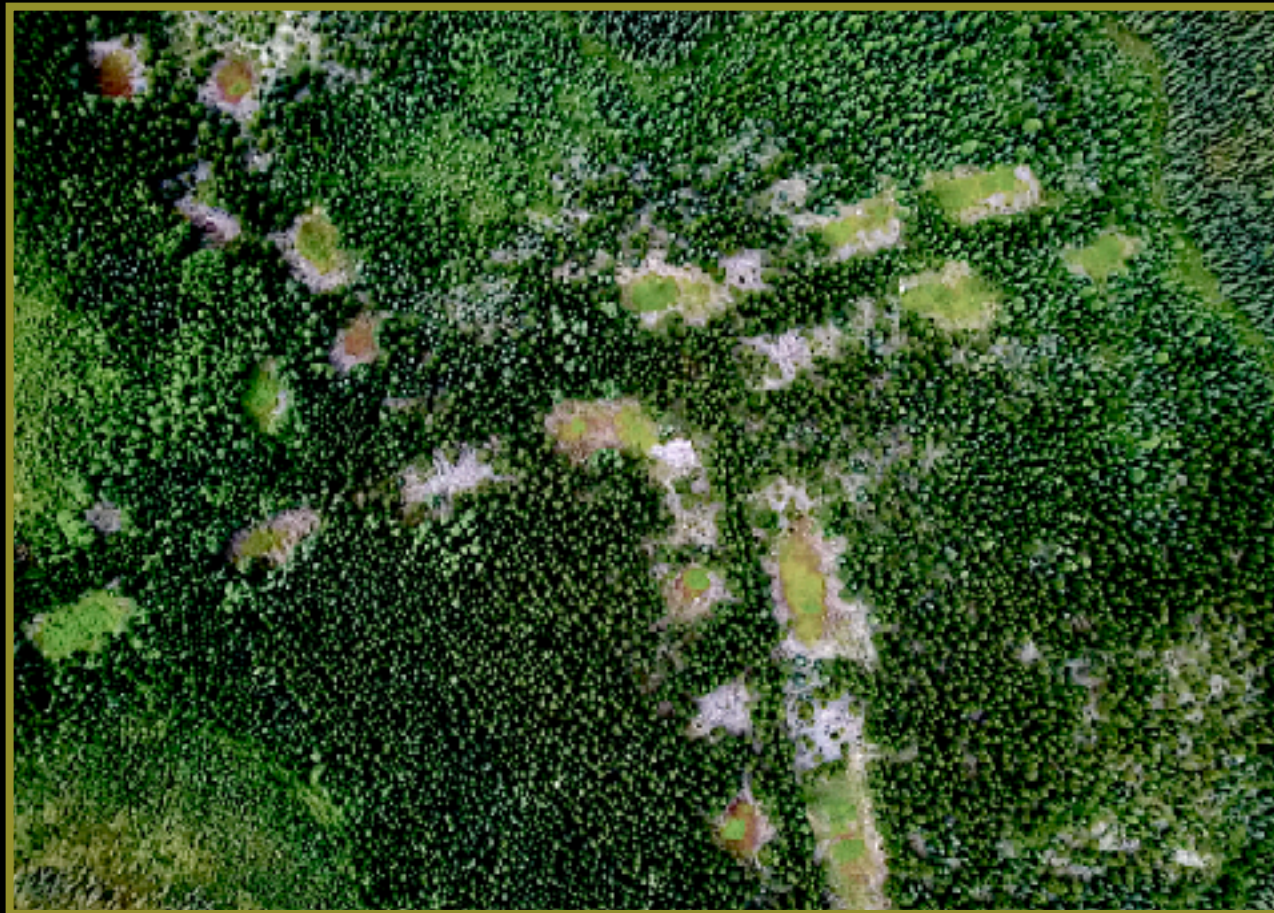
So far, this research has focused on two primary ideas that warrant more reflection:

These logging scars take up a lot of space. Space that was previously productive boreal forest.



After 20-30 years, these areas provide little evidence of renewal back to forest.





These scars take up a lot of SPACE:

While estimates are hard to come by, one survey of forest managers in the study area estimated roads and landings together occupy 2-4% of the area logged.³ Some of my early findings suggest that the actual area of this heavy equipment footprint may well be at least 10%-15% (or more) - far greater than foresters in the area might be considering.



~10-15%
of the logged area



20-30yrs

After 20-30 years, these areas provide little evidence of renewal back to forest.



The sparse literature that considers landing effects generally acknowledges that these areas may take “decades” to develop trees. Standing in countless 20-30 year old landings in this area, I have found that you are most likely to find only small shrubs and berries. Or deep piles of unwanted stem-wood, branches, and chips too dense to yet allow tree growth. These impacts are not merely a slight delay in otherwise perfect renewal. These areas represent decadal delays relative to the renewing forest around them. The meagre presence of only lonely individuals or occasional seedlings strongly suggests that this gap is likely to only grow wider, as the surrounding renewal grows towards maturity.

NOTE CONTRASTS WITH SURROUNDING RENEWAL



LOGGING SCARS

These impacts are widespread and extensive - and their implications are systemic. It seems unwise to count on these areas catching up to the surrounding forest growth, if they are still exhibiting little sign of renewal after 30 years. And, because these areas occupy such a significant percentage of the area logged, conventional optimistic assumptions of the sustainability and carbon balance of this logging system likely warrant more careful attention.

This is just the beginning.

I intend to examine and discuss the results of this work in much more detail in the months ahead, and will look forward to a more extensive engagement of experts and policy makers on how these results inform public policy on Ontario's - and Canada's - boreal forest.

This work will include the implications of continued forest conversion to forest management, particularly with respect to carbon and climate, and caribou.

Stay tuned!

Trevor

References cited:

1. eg. 92% Full Tree logging system. CPPA (1992) *Survey of Member Companies*
2. eg. Ralevic et al (2010) *Assessing forest biomass for bioenergy/ Operational challenges and cost considerations*
3. Columbo et al. (2005) *The effects of forest management on carbon storage in Ontario's forests*