

Shady Accounting and Vanishing Forests

The NS Government claims it is close to having fully implemented the Lahey Report's recommendations. In reality, many have been ignored. This article examines the new 'ecological' approach to harvesting on most Crown land.

BY NINA NEWINGTON

In 2023 Nova Scotians got a taste of what is to come: drought, fire, flood, polar vortex. UN scientists are clear: climate breakdown and nature loss have to be tackled together. Protecting forests is vital. In 2021, Nova Scotia committed to protecting 20% of our lands and waters by 2030, but progress is minimal. Old forests are still being logged. Crown land has been identified for a new round of clearcutting and spraying, but not for conservation. The government's long-promised "Collaborative Protected Areas Strategy: An Action Plan for Achieving 20%," is long on aspirations, short on actions.

There have been changes. After years of pressure from environmentalists, and mounting public outrage at the tracts of stumps and slash where forests once grew, clearcutting is no longer touted as the only economically viable harvest strategy. Government and forestry companies have seemingly embraced "ecological forestry" as recommended by the 2018 *Independent Review of Forest Practices in Nova Scotia*, otherwise known as the Lahey Report.

The government claims it is close to having fully implemented Lahey's recommendations. In reality, many have been ignored. This article examines some changes that have been made, specifically the new 'ecological' approach to harvesting on most Crown land. I'll use specific examples from Goldsmith Lake in Annapolis County to illustrate key issues, but first bear with me as I hack a path through the thicket of jargon, acronyms, and concepts surrounding forestry practices on Crown land.

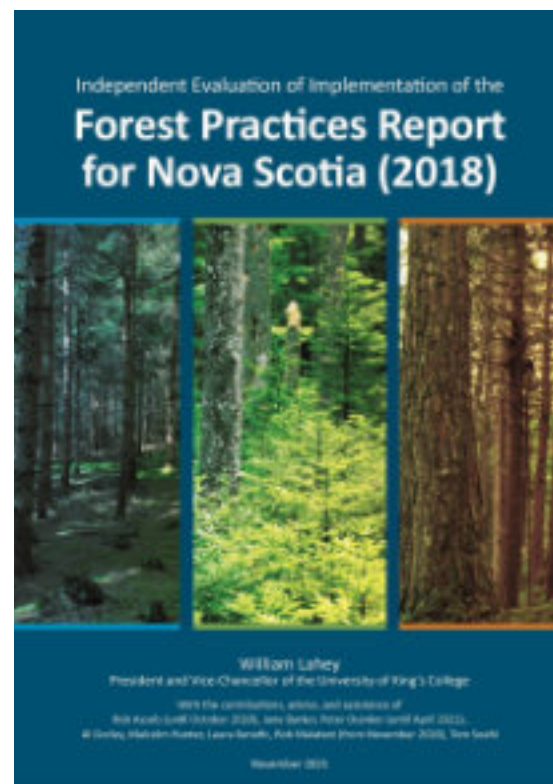
The Triad Model

The Lahey Report calls for public forest lands to be divided into three zones, a "triad":

- 1) protected areas, called the conservation zone
- 2) the ecological matrix, i.e., "ecological forestry"
- 3) high production forestry (HPF)

The public land in question includes existing protected areas (overseen by the Department of Environment and Climate Change) and Crown land (managed by the Department of Natural Resources and Renewables (DNRR)). The total land base for the triad is a bit over 1,824,000 hectares, or about a third of the province. Protected land currently makes up 35% of total public triad lands; the ecological matrix is 55%; high production forestry is 10%. In their 2021 report,¹ DNRR states:

The Conservation zone, with no resource extraction, serves as a benchmark for ecological integrity, biodiversity, and natural processes. The Ecological Matrix zone (the largest zone) has the goal of sustaining and/or enhancing natural forest ecosystem conditions and function through a focus on biodiversity



Cover of Lahey's 2021 evaluation of the Nova Scotia government's implementation of his report, which illustrates the triad. <https://novascotia.ca/natr/forestry/>

management, but where some timber harvesting can occur. The [High Production Forestry] HPF zone is intensively managed for timber production to provide high yields from a relatively small portion of the land base. (p.2)

The triad model for public lands has been accepted in principle and the *Silvicultural Guide for the Ecological Matrix* zone (S-GEM in forestry speak) has been defined and is in use. In their 2023 progress report,² DNR states that “90% of Crown and protected areas land will always be committed to the two zones that prioritize biodiversity” (p.3). The conservation zone as established does protect biodiversity, but is biodiversity really prioritized in the ecological matrix zone?

The *Silvicultural Guide for the Ecological Matrix* is the critical factor, since all harvests in the one million hectares currently assigned to the ecological matrix are based on it. The Guide generates a specific “harvest prescription” for any parcel of land proposed for logging within the ecological matrix, based on information supplied from a “Pre-Treatment Assessment” of the land in question. The medical language, I suppose, is intended to indicate surgical precision and a focus on “healthy outcomes.”

Forest Accounting 1: An Ecological Rule of Thumb

Do the harvest prescriptions of the *Silvicultural Guide* actually prioritize biodiversity? To answer this,



Moose Country Clearcut, Digby County, 2020. PHOTO: NINA NEWINGTON.



Asitu’li’sk, formerly Windhorse Farm, near New Germany, N.S., provides a superb example of ecological forestry at its best. PHOTO: ULNOOWEG EDUCATION CENTRE.

one needs to know what kinds of forests are best for biodiversity.

The very best forests for biodiversity are old growth forests that have experienced little human activity (excepting Indigenous peoples’ traditional practices). Old growth forests contain a rich variety of species. They are complete forests that include every age of tree, from seedlings to fallen ancients, rotting slowly back into the forest floor. With only natural disturbance to contend with, they have had time to develop a complex structure with numerous nooks and crannies, otherwise known as microhabitats. Less than one percent of our forests currently qualify as old growth. The best way to enhance biodiversity in our forests is to leave enough old forests alone to rebuild the stock of old growth.

The worst forests for biodiversity are tree plantations, created by planting one species all at one time after a forest has been clearcut. The result is an even-aged monoculture. These are the sort of forests planned for the 10% High Production Forestry leg of the triad.

What should occur in the mixed-use zone, the ecological matrix, where some timber is to be harvested? Is it possible to do light touch forestry over many decades in a forest, and still have that forest support significant biodiversity? Yes. There are quite a few examples on private land in Nova Scotia. Asitu’li’sk (formerly Windhorse Farm) in Lunenburg County comes to mind.³

As a rule of thumb, ecologically acceptable harvests take no more than a third of the forest cover at a time. For forest ecologists, one-third is the absolute maximum removal, already a compromise between the needs of biodiversity and the demands of industrial forestry. If less than two-thirds of the forest is left standing, too much sunlight streams into the forest floor. Soil metabolism speeds up, releasing the carbon that has been stored in the soil. The species that depend on humid, shady, interior forest conditions wither in the wind and sun. Pioneer species, which tolerate a lot of sunlight, crowd out the young of the long-lived, shade-tolerant species. By taking no more than a third of the forest, many of these ill-effects can be avoided.

The forestry industry and DNRR recognize the importance of this limit. For example, WestFor, the consortium of mills that hold the license to manage Crown land forests in southwest Nova Scotia, made this statement regarding their plans for logging around Goldsmith Lake:

In the 10,000 acres of Crown Land that WestFor manages in the area, about 8 percent (846 acres) has been approved for Partial Harvests over the next several years after much analysis by the experts at the Nova Scotia Department of Natural Resources and Renewables (DNRR). Even in those blocks designated for harvest, two-thirds of the trees will be left standing. The planned harvest is based on Ecological



New road at Goldsmith Lake, 2022.
PHOTO: NINA NEWINGTON.

Forestry guidelines recommended in the Lahey Report, leaving most of the trees in the area unharvested with no clearcuts. (WestFor op-ed in The Chronicle Herald, also submitted to DNRR, November 29, 2022)

WestFor’s statement signals that they support the Lahey Report’s ecological forestry guidelines, and that these guidelines will result in what are accepted as ecological harvests. On blocks “designated for harvest, two-thirds of the trees will be left standing” with “no clearcuts.” I will use the recent DNRR approved harvest plans around Goldsmith Lake as a way to examine the veracity of WestFor’s statement, and the kind of forestry practices currently being implemented in the ecological matrix.

Forest Accounting 2: Roads Don’t Count

In October 2022, a month or so before WestFor’s op-ed, a group of citizen scientists hiked into the forest immediately west of Goldsmith Lake to document biodiversity in the area. We discovered a brand-new logging road (pictured above and at left). A passage 30 m wide had been clearcut. Down the middle of it ran a 5.5 m wide road. Logs were still piled to either side, some of them large yellow birch and white pine. Boulders and ditches made it extremely



Drone image of the new road at Goldsmith Lake, 2022. PHOTO: NINA NEWINGTON.



Extraction trails near Goldsmith Lake, 2023.
PHOTO: NINA NEWINGTON.

difficult to cross from the forest on one side to the other. It turns out that the road had been built three months earlier. It is two kilometres long. Six hectares were clearcut, creating a 30 m wide break in the forest. The new road runs almost entirely through areas proposed for harvesting.

When I called Ryan McIntyre, DNRR’s Resource Manager for the Western Region, to protest, he allowed that the roadway was wider than DNRR likes to see (they prefer 20 m). He also stated that the forest lost to that six-hectare clearcut would not be included in the harvest removal tallies. One hundred percent tree removal for a road somehow equals zero percent removal from the forest. His explanation was that other contractors might use the road too, so it wouldn’t be fair to count the cutting for the road as part of the allowed harvest for whoever had the contract to log the areas adjacent to the road. DNRR sees things from the point of view of forestry contractors, rather than the forests and all the life they support. This much is clear, but it still looks like a blatant wood grab. Why else make the roadway so ludicrously wide? From a biodiversity

point of view, it simultaneously creates a wind tunnel, an obstacle to wildlife, easy access for poachers, and wide seedbeds of disturbed soil for invasive plant species to colonize. This is ecological vandalism.

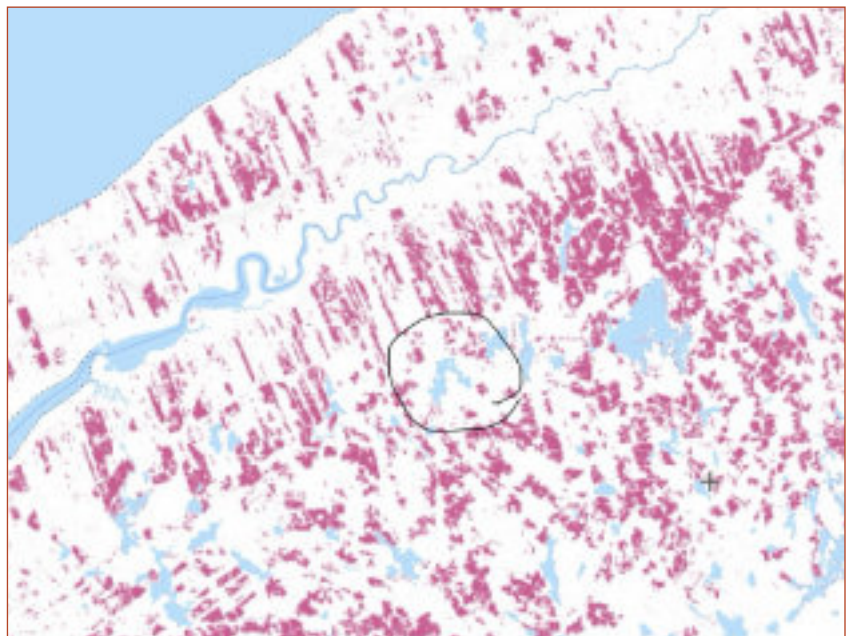
Forest Accounting 3: Extraction Trails Don’t Count Either

When Ryan and I first talked about the harvest plans at Goldsmith Lake, he told me that none of the plans approved for the area would result in the removal of more than 35% of the trees. I repeated his figure to other people. In July, 2023, someone sent me a field card created by DNRR. It was a summary of the different Silvicultural Guide prescriptions. For the first time it was clear that some harvest prescriptions included the extraction trails in the figures for how much of a forest would be retained—and others did not.

Extraction trails are not roads. They are the trails cut into the forest so the equipment can get in and cut more trees from the ‘leave strips’ in between the trails.

Last winter, logging took place west of Goldsmith Lake in cutblocks near Stailing Lake and Tupper Brook. The prescription for the areas was “Commercial Thinning.” The field card from DNRR for this prescription states: “Remove 1/3 of the basal area (within plus or minus 5%) uniformly from the area between extraction trails (excluding trails).”⁴

Basal area is a way to estimate how much wood is in a forest. Imagine a clearcut forest. Measure the area of



Map showing clearcuts in the last 20 years in Annapolis Co., with the area around Goldsmith Lake circled. SOURCE: WWW.GLOBALFORESTWATCH.ORG



Commercial thinning prescription near Goldsmith Lake, 2023. SOURCE: GOOGLE EARTH.

the cut surface of each tree stump, then add up all those figures, and that is roughly the basal area of that forest. Of course, there are ways to estimate the basal area of a forest without cutting it down first. The Commercial Thinning prescription calls for taking one third and retaining two thirds of the basal area between trails.

How much of the basal area of the forest was removed when cutting the extraction trails? The Silvicultural Guide's prescription standards for all the harvests proposed at Goldsmith Lake state that the trails should not require the removal of more than 25% of the forest. How does that work out in practice? According to DNR's Harvest Inspection Information in April 2023,⁵ the actual amount of the forest removed for trails in the Stailings Lake cut was just under 23%.

Removing a quarter of the forest to reach the rest is about average, according to Ryan McIntyre. The one-third that is being removed between the trails is one third of the remaining 75% of the forest after the road was built and the trails went in. A third of 75% is 25%. The total amount of the forest removed in a Commercial Thinning then is 25% for the extraction trails + 25% from the strips between the trails, which equals 50%, otherwise known as a half, not a third.

Not all the harvest prescriptions in the Guide are so complicated. There is one where the prescription is simply to "Remove 1/3 of the basal area (including trails)."⁶ None of the harvest prescriptions at Goldsmith Lake fall into that category. Of the 462 hectares

of harvest plans proposed for the area in 2022, 256 hectares are approved for Commercial Thinning. The other 'prescriptions' are: Uniform Shelterwood with Reserves (102 ha), Single Tree Selection, (50 ha), and Medium Retention Continuous Cover Irregular Shelterwood (MIRC) (44 ha). All of these result in the removal of at least 50% of the forest. The MIRC prescription doesn't bother with the trails game, saying simply "Remove one-half of the basal area (including trails)."

It is depressing to conclude that DNR and WestFor lie to the public about what is being done to our public lands. It seems they tell us what we want to hear: "Two-thirds of the trees will be left standing," with "no clearcuts."

There is a great deal more to explore in the Guide. The prescriptions approved for Goldsmith Lake are not 'one and done.' All assume future harvests. The interval between harvests is crucial. The plan for the MIRC harvest prescription, for example, is to take half the forest now, then come back in 30 years and take 80%. After that second harvest, 10% of the trees in the forest will be over 30 years old, 10% will be 30 years old and the rest will be gone, aside from a scattering of reserve trees. Does that sound like prioritizing biodiversity?

One of Lahey's recommendations, which has clearly not been implemented, is his call for a culture change in DNR. There has been some change. I doubt I could have talked with previous DNR regional managers the way I have been able to talk with Ryan. He returns my

phone calls, for a start. We continue to talk. However, in the end, it seems to me that he cannot fathom making biodiversity the priority. The voice of the forestry industry is still so much louder than the voices of scientists across the world sounding the alarm about nature loss, let alone the voices of environmentalists here in Nova Scotia.

Where Do We Stand?

Lahey's triad model is a trade-off. In return for doing only ecological forestry in the ecological matrix, the forestry industry will be permitted to have their way with 10% of our public lands. Knowing that most Nova Scotians are sick and tired of clearcutting, and detest spraying, DNRR is going to great pains to assure us that the bargain is being kept.

The bargain is not being kept. Biodiversity is not the priority on 90% of the triad. Until it is, High Production Forestry must remain on the back burner. In the ecological matrix, biodiversity should be prioritized on the ground.

- When trees are removed from forests, they count, regardless of whether they are removed to make roads, or extraction trails, or from the strips between the trails.
- As WestFor and DNRR have themselves indicated, leaving two-thirds of a forest standing after a harvest is the minimum for the sort of forestry that can be permitted in the ecological matrix.
- Another limit is to wait for a forest to recover between harvests. The rule of thumb, based on the regrowth rate for Nova Scotia, is to wait a year for every percent taken. Take 25% then you can go back in 25 years. Take 50% and it must be 50 years before you go back for more.⁷

The Guide is a living document. It can and must be improved.



Commercial thinning near Goldsmith Lake, 2023. PHOTO: NINA NEWINGTON.

An Overarching Priority

Anyone looking at a map of the forest cover lost to clearcutting on the South Mountain in Annapolis County over the last 20 years could have identified the area around Goldsmith Lake as an excellent candidate for protection, solely because it has not yet been chopped to pieces (see map on the page 10). In fact, the retired head of the Protected Areas Branch of the Department of the Environment, John LeDuc, did submit such a proposal to protect the area in February, 2022, however, DNRR went ahead and approved supposedly ecological harvest plans for the Goldsmith Lake area in June, 2022. In July, they allowed the clearcutting of that huge roadway, which runs through old forest and into what turned out to be the 100 m buffer zones around two of species-at-risk lichens. DNRR did not identify any species-at-risk concerns in any of the harvest plan areas. In just over a year, we have identified 31 species-at-risk occurrences around Goldsmith Lake, most of them in approved harvest areas. None of the harvest plans for Goldsmith Lake meet the threshold for ecological forestry. Even if they did, they would not be appropriate in an area that should be assigned to the Conservation zone.

The first step in implementing the triad system must be to designate the Conservation zone throughout the province. The legal commitment to protecting 20% of Nova Scotia by 2030 means that approximately 330,000 hectares will be transferred from the Ecological Matrix zone to the Conservation zone. The Ecological Matrix will shrink from 55% of the triad to 37%.⁸ It makes no

sense to allow forestry activities, ecological or not, on lands that should and will be protected in the next seven years. Identifying the areas to be protected requires the broader, landscape level planning that Lahey recommended. Without it, the kind of damage to biodiversity that we have already witnessed at Goldsmith Lake will be repeated. In 2023, DNRR began posting maps identifying potential sites for clearcutting and spraying on Crown land (the High Production Forestry zone), but they have not yet posted any maps showing potential areas for conservation.

The Guide, quoting the Department of Lands and Forests (now renamed DNRR), who in turn was quoting the Lahey Report, states that:

The Government of Nova Scotia has committed to implementing a triad system on public land that will 'protect and enhance ecosystems and biodiversity as the overarching policy priority, as they are the foundation for other values' (Nova Scotia Department of Lands and Forests, 2018).

It's been five years. We need action, not obfuscation.

Nina Newington is a member of the Citizen Scientists of Southwest Nova Scotia.

Notes

¹ *High Production Forestry (HPF) in Nova Scotia: Phase 1*, document published on line in 2021. <https://novascotia.ca/ecological-forestry/docs/HPF-phase1-report.pdf>

² *High Production Forestry (HPF) in Nova Scotia Phase 2*, document published on line in 2023. <https://novascotia.ca/ecological-forestry/docs/HPF-phase2-guidance-for-implementation.pdf>

³ See the article on Asitu'li'sk in the Spring 2023 issue of *Beyond the Tides*, volume 50, No. 2, p. 6-7.

⁴ Harvest IDs AP0121015 A and C

⁵ Dated April 23, 2023, in the case of the Commercial Thinning at Goldsmith AP021015C

⁶ High Retention Continuous Cover Irregular Shelterwood (HIRC)

⁷ See Karen Beazley's 2021 report: nsforestnotes.ca/wp-content/uploads/2021/02/Beazley-submission-to-SGEM-review.pdf and the article by R. A. Seymour, A. S. White, and P. G. deMaynadier (2002). "Natural disturbance regimes in northeastern North America—evaluating silvicultural systems using natural scales and frequencies." *Forest Ecology and Management*, 155, 357-367.

⁸ This assumes that of the more than 6% of the remaining NS land still to be protected to reach the 20% target, almost all of it will be public land. Some private land will be bought or donated but it is likely to be minimal. Following the most recent announcements, 13.45% of NS is protected.



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