

## **XRNS Comment on the revised Silvicultural Guides for the Ecological Matrix – February 16, 2021**

### **Lahey, SGEMs and the Climate and Biodiversity Crises**

Silvicultural Guides for the Ecological Matrix are the primary tool by which the recommendations of the Lahey Report will be translated on the ground into specific forestry practices in the Ecological Matrix. They cannot, however, focus only on forestry activities and at the same time remain true to the spirit and the specifics of the Lahey Report. This report explicitly requires a change from viewing crown land forests as a source of timber to viewing our forests through multiple lenses. In his Executive Summary, William Lahey states that *protecting and enhancing ecosystems should be the objective (the outcome) of how we balance environmental, social, and economic objectives and values in practising forestry in Nova Scotia.* (1)

Although the Lahey report does not focus on the existential challenges posed by the climate emergency, it does address the other and intertwined crisis we are facing: the radical loss of biodiversity and the risk of ecosystem collapse. Fortunately, the transition Lahey proposes to ecological forestry for the Ecological Matrix will not only address the issue of biodiversity loss, it will also allow our forests to fulfill their potential for carbon sequestration.

The Federal government, our Provincial government, and over 500 municipal and town councils have declared climate emergencies. Nova Scotia has set ambitious carbon reduction targets. We need our forests to help us achieve those targets.

Scientists around the globe agree that, in addition to cutting emissions drastically, absorbing and storing carbon that has already been released into the atmosphere is an essential environmental objective. Natural forests (as opposed to industrial plantations) are uniquely suited to achieving this goal. Old forests absorb more carbon than young ones. These considerations must be factored into all our forestry practices. The Lahey report establishes the role science, and advances in scientific understanding, can and should play in shaping those practices. Lahey Recommendation 39, referring to the Department of Natural Resources, as the Department of Lands and Forestry used to be known, states “DNR must dramatically increase its reliance on science [ ] to move NS in the direction of ecological forestry”.

The way in which the Lahey report will improve our forests’ ability to store carbon is by significantly reducing clearcutting on crown land. This is also the primary way in which it will meet its own overarching objective of protecting and enhancing ecosystems and biodiversity.

Forests cover 75% of Nova Scotia. Approximately 90% of all forestry harvests in Nova Scotia are currently clearcuts or clearcut equivalents – harvests that remove so much forest cover they result in even-aged forests. Due to this extensive clearcutting, our forests are not absorbing more carbon than they are releasing. They are instead, like most of Canada’s vast forests, adding more greenhouse gases than they are taking out of the atmosphere. (3) This is largely due to

clearcutting which not only removes almost all the trees storing carbon in a forest, it also, by allowing sunlight to beat down on what used to be forest floor, releases massive amounts of carbon stored in the soil. In order for this shocking situation to change, there must be a dramatic reduction in clearcutting in our province. Lahey's recommendations only apply to crown lands – about 30% of Nova Scotia's land mass – so they are only a start, but we have to start somewhere and we have to start now.

## **The Overarching Policy Priority**

The Lahey Report came out in August 2018. In December 2018 the Government of Nova Scotia accepted the Lahey Report and committed to implementing its recommendations. Specifically, the Government of Nova Scotia stated that:

- *“Government accepts Professor Lahey’s Independent Review of Forest Practices in Nova Scotia and agrees with the spirit and intent of his recommendations.”*
- *“The key to Professor Lahey’s report is the adoption of a new paradigm — ecological forestry”.*
- *“Nova Scotia will protect and enhance ecosystems and biodiversity as the overarching policy priority, as they are the foundation for other values”.*
- *“Nova Scotia’s forest policies and operational decision making will be guided by the practice of ecological forestry through a triad model. This will represent a significant change in the way Nova Scotia’s forest will be managed and will require modelling for habitat and wood supply”.*(2)

The triad model points to three different approaches to different areas of Crown land:

- *Protected areas, where forestry activities are prohibited*
- *High production areas, where timber production for the industry is prioritized*
- *The wider landscape or matrix on which both protection and production objectives are applicable and where forestry would generally be of a low-intensity nature to ensure consistency with broader biodiversity conservation objectives (2)*

This last, the Ecological Matrix, is intended to cover at least two thirds of forested Crown land. The draft Silvicultural Guides for the Ecological Matrix (SGEM) is specifically about implementing the Ecological Matrix component. Obviously, then, the SGEM should be consistent with the key recommendations of the Lahey Report as they relate to this leg of the triad. Unfortunately, it is not.

My first recommendation is that the SGEM must explicitly state, at the start, that its primary commitment is to Lahey's key objective: *protecting and enhancing ecosystems*. It does not do this at present.

## A quandry

Thirty months have passed since the release of the Lahey report. Clearcutting has continued apace in forests that should form the basis for the Ecological Matrix. There are so few remaining intact forests it is unbearable to imagine losing any more of them. And yet the public learned recently that WestFor believes it has 5 years' worth of harvest prescriptions in its pocket. This is unconscionable. It is also absurd. We are in a climate emergency. According to the Intergovernmental Panel on Climate Change we have 9 years to get our act together. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services is just as urgent in its recommendations. Our forests could be storing carbon and protecting biodiversity. Instead they are being decimated as the reign of high volume/low value forestry continues. We cannot wait any longer for long-promised, never-delivered forestry reform.

The new SGEM is a big improvement on earlier drafts of the Forest Management Guides (as they used to be known.) I would love to say, 'Good enough, let's get on and implement these as they are written.' And indeed, at first reading, I felt relief that we might finally have a tool that would lead to real ecological forestry practices. The inclusion of permanent reserve trees is good, as is the provision that there should be no forestry in particularly sensitive and biodiverse sites.

The problem is that careful reading reveals serious problems. One glaring example is this heading: "Context of this Guide within Sustainable Forest Management in Nova Scotia". 'Sustainable Forest Management' is a term which appears nowhere in the Lahey report. Its use is one of many indications of a consistent effort throughout the SGEM to tilt ecological forestry back towards 'production objectives,' and away from Lahey's recommendation for the ecological forestry matrix where *forestry would generally be of a low-intensity nature to ensure consistency with broader biodiversity conservation objectives.*

A particularly troubling example of this effort is the addition of the new and dubious categories of Zonal and Azonal areas. These have no basis in science. According to the SGEM, "Azonal Acadian ecosites with more severe site limitations support more frequently disturbed and shorter-lived climax forests that are more appropriately managed with simpler silvicultural systems with lower retention levels." (p.8) In other words, the default treatment for 'Azonal' areas judged to be too nutrient poor to regenerate well would be clearcutting. This in spite of the fact that many of these areas have become nutrient poor precisely as a result of prior clearcutting. The DLF should instead use its own scientists' Nutrient Budget Model guidance in order to improve soil nutrients and the quality of forests growing on damaged sites. The Forest Ecosystem Classification (FEC) system is well established and should be adhered to. It is hard to avoid the suspicion that large areas of crown land forest, particularly in southwestern Nova Scotia, would be classified as 'azonal' and subjected to the very regime of clearcutting the Lahey report is supposed to be moving us away from. The Zonal/Azonal categories must therefore be removed from the SGEMs. The Zonal/Azonal categories must therefore be removed from the SGEMs.

## **Soil Care and Climate Considerations**

Although the Lahey report does not focus on the vital role forests play in sequestering carbon, the practice of ecological forestry is compatible with the direction we all must take in addressing the twin crises of climate change and biodiversity loss. A healthy Nova Scotia forest will conservatively sequester 500 kg/ha of carbon in trees alone. Carbon-healthy soil will store as much again, if not more. Mixed age, mixed species natural forests sequester more carbon and represent more varied and therefore more resilient ecosystems than tree plantations. Old forests absorb more carbon. Forestry practices such as clearcutting, on the other hand, destroy biodiversity and release carbon from the soil in addition to removing all the trees that were previously storing carbon.

Given the extensive clearcutting that has already taken place throughout our crown lands, remaining intact forests must be guarded with particular care. These must be included in the Ecological Matrix or the Protected areas of the triad. It is essential that the SGEM does not open a back door to yet more heavy-handed harvesting of these forests. They are priceless assets when the policy priority is to protect and enhance ecosystems and biodiversity.

Low-intensity harvesting with a removal of a maximum of 10 to 30% of the basal area of a forest, following a natural disturbance pattern of opening up small gaps under partial tree cover, protects the forest soil. In addition to retaining carbon in the forest floor, this pattern allows for natural regeneration of shade tolerant, long lived trees, many of them hardwoods. Such forests are far better able to tolerate the additional stresses that the climate crisis is piling on our forests: more frequent and more severe windstorms, drought, heat, wildfires, flooding and extreme rainfalls, as well as invasive pests and diseases. Tree plantations, which commonly accompany high-intensity harvests, are, by contrast, much more vulnerable, being, by and large, even-aged monocultures of softwood species. Such plantations have led to the 'borealization' of the Acadian forest. Under this regime, our forests have become less resilient. Trees such as the Balsam fir and spruce favoured by the pulp mills will do particularly poorly as temperatures rise. This is already happening in southern New Brunswick.

The SGEM have made improvements in their recommendations for harvesting on sites with extreme wind exposure. Where the earlier Forest Management Guides proposed harvests that would remove 80% of the tree cover, the new guide limits the removal to 30%. This is in line with the Department's scientists' findings.

## **Missing**

The Lahey report is clear that forests should be valued in all their dimensions and not solely as sources of fibre. The SGEMs, therefore, must acknowledge wider concerns than those of the forestry industry. It is NOT a foregone conclusion that all forests in the Ecological Matrix will be harvested.

Landscape level factors must be included in any review of forest harvest proposals. This element is not adequately addressed in the SGEM. Focusing on stand-by-stand prescriptions for harvesting in the EM makes no sense without a prior commitment to landscape level planning. Without landscape level – or watershed level – planning, it is unlikely that the needs of wildlife and, in particular, endangered species such as the Mainland moose, will be properly taken into accounts. Paltry provisions such as the ‘moose clumps’ recommended under the current Special Management Plans represent no real commitment to *protecting and enhancing ecosystems*. By contrast, identifying and protecting core habitat for the Mainland moose would simultaneously have a beneficial effect on other wildlife. Biologists within DLF must be allowed to take into account factors like the cumulative effects of adjacent cuts on watersheds and wildlife.

The complete absence of wildlife considerations from the SGEM indicates that they are still in the service of the forestry industry rather than being in the service of our ecosystems.

Specifically, the SGEM makes no provision for modern scientific understanding of the importance of significant buffer zones along watercourses. These should be 100m. Implementing this provision alone would hugely improve connectivity for wildlife.

Furthermore, there is no mention of a singing season in the woods, meaning a complete cessation of logging and roadbuilding activities between May 15<sup>th</sup> and the end of July in order not to destroy the nests of migrating birds. Only in this way will forestry practices come into compliance with the Migratory Bird Convention Act.

## **Trust**

There are provisions within the SGEM that would lead to far more intensive harvesting in the Ecological Matrix than is recommended in the Lahey report. In order to avoid these, a baseline rule should be a maximum removal of 30% by basal area in any one harvest in the Ecological Matrix. The frequency of such removals should be tied to the rate of regeneration which is approximately 1% a year in our forests. So 30 years would pass before another 30% harvest was permitted. Any exceptions to these limits would be rare special cases subject to additional review.

It is better to define maximum extraction rates rather than talking of minimum retention rates. It is also important to move away from a focus on volume to an emphasis on value. A reduction in volume of wood from our forests is essential. There is no room for converting further forests in the Ecological Matrix to industrial plantations. These ecological deserts fulfill none of the multiple functions of a forest other than the pulp industry’s desire for a high volume of softwood. This model, to the extent that it is viable at all in a carbon-constrained, climate change impacted world, is accommodated in the High Production Forestry leg of the triad. There is no room for it in the Ecological Matrix. The SGEMs should be crystal clear on this subject. This does not, of course, mean there is no room for forestry in the EM. A viable forestry industry will depend on growing better, healthier forests which offer higher value/lower volume timber.

It is dismaying to find that, lurking in this draft of the Restoration Keys, are provisions that would lead to high levels of forest removal followed by tree planting. This is not what the Ecological Matrix leg of the triad is about. Maintaining forest cover and supporting not only a variety of native species of trees but also all the other layers of the forest from understory shrubs to lichens to fungi is at the heart of protecting and enhancing ecosystem health. Subterfuges intended to undermine real ecological forestry raise serious questions about the probity of the Department of Lands and Forestry.

### **How to proceed?**

It is not going to be easy to find ways to allow both ‘protection and production objectives’ in the ecological matrix while maintaining the core commitment of the Lahey report, accepted by the Government: *Nova Scotia will protect and enhance ecosystems and biodiversity as the overarching policy priority, as they are the foundation for other values.* (Lahey, p. iii) The effort will require good faith. This seems to be consistently lacking in the way the Department of Lands and Forestry deals with forestry and the clearly expressed priorities of Nova Scotians. As a result, the SGEM needs to be subject to a final independent review by forestry experts such as Dr Laura Kenefic or D. Robert Seymour.

**Although the draft SGEM has serious flaws which must be addressed, it is better than the current interim guidelines. As a result, the SGEM should immediately replace the existing guidelines on an interim basis while the independent review of the SGEM is completed.**

In this interim period there must be an immediate moratorium on all existing clearcut-equivalent harvest approvals including Variable Retention 10-30%; Uniform Shelterwood; Overstory Removal and Salvage cuts. This moratorium reflects the extreme urgency we need to bring to our efforts to address the climate and biodiversity crises. Both provincial and federal governments have recognised that we are in an emergency. It is high time the Department of Lands and Forestry started acting as if that were the case.

Once the new and revised SGEM have been through the proposed review and are in place, all the as yet uncut harvest prescriptions created since the Provincial Government accepted the Lahey report’s recommendations in December 2018 should be run through the new SGEM. Since the Pre-Treatment Assessment (PTA) data has already been gathered, rerunning it through the new program, when it is ready, will generate new and more ecologically appropriate harvest prescriptions.

If the transition to ecological forestry is to happen – and it must – industrial forestry can no longer be regarded as the natural manager of crown lands. In addition, industry must no longer be allowed to police itself for any infractions. Ecological forestry practices require close monitoring by a third party. Unfortunately, the Department of Lands and Forestry has forfeited the public’s trust by dragging its feet on all reforms and then playing the kind of games outlined in these comments.

It is past time for reform not just in the old Forest Management Guides but also in the management of the Department of Lands and Forestry. I very much hope that the new Premier will usher in much needed change. He has already promised to put forward an amendment to the Crown Lands Act in the coming session of the legislature. This, and also revision of the Forests Act, is essential to implement the broader understanding of the role and value of our forests that is at the heart of the Lahey report.

(1) Lahey, W.: 2018: *An Independent Review of Forest Practices in Nova Scotia*, Department of Lands and Forestry, p.iii

(2) Government Response to the Independent Review of Forest Practices in Nova Scotia, Department of Lands and Forestry, December 2018.

(3)

<https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/fourth-biennial-report-climate-change.html>

Extinction Rebellion Nova Scotia  
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