

**Comments on the revised Silvicultural Guide for the Ecological Matrix
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At the start of the Executive Summary of his review of forestry practices, Prof. William Lahey states: “I have concluded that protecting ecosystems and biodiversity should not be balanced against other objectives and values as if they were of equal weight or importance to those other objectives or values. Instead, protecting and enhancing ecosystems should be the objective (outcome) of how we balance environmental, social and economic objectives and values in practicing forestry. A number of reasons are given for this conclusion, but the primary reason is that ecosystems and biodiversity are the foundation on which the other values, including the economic ones, ultimately depend” (Lahey, pg. iii, Executive Summary) Aug 2018.

In the fall 2018, the government of Nova Scotia accepted the report and committed to implementing its recommendations, stating:
“Government accepts Professor Lahey’s Independent Review of Forestry Practices in Nova Scotia and agrees with the spirit and intent of this recommendations.”
“ The key to Professor Lahey’s report is the adoption of a new paradigm – ecological forestry.”
They committed to *“protect and enhance ecosystems and biodiversity as the overarching policy priority as they are the foundation for other values.”*

How is implementation of the Lahey reforms proceeding?

The Lahey report suggested that Crown land be divided into a triad, each with distinct forestry practices. In the protected portion, no forestry occurs, in the High Production Forestry (HPF) leg, industrial forestry with plantations of softwoods, even aged management and glyphosate spraying reigns whereas the Matrix is the realm of ecological forestry. As Crown Land is only a portion of Nova Scotia, the location of “matrix” and HPF lands is crucial for maintaining connectivity allowing wildlife to move between habitats. HPF areas are not conducive to biodiversity, making the position and methods used on matrix lands crucial to the maintenance of ecosystem health, biodiversity, rare and threatened organisms. Connectivity between habitats is essential, particularly in a peninsula such as ours, where a mere 100 km separates the Atlantic and the Bay of Fundy. For some species this is a few days walk. Choosing whether certain areas will be HPF or matrix lands becomes key to managing for ecosystem health and biodiversity. Lahey did not provide guidance for how to make these choices, but the report’s overarching conclusions and the government’s commitment to protect ecosystems and biodiversity clearly need careful landscape planning.

Landscape/watershed level planning is crucial for ecosystem health and maintenance of biodiversity. Ecological considerations must be part of planning of Crown Land use. Ecological forestry on Matrix lands will have the greatest benefit if these lands are placed to optimize habitat connectivity.

The revised Silvicultural Guide to the Ecological Matrix (SGEM) proposes to establish norms for forestry on the Matrix lands. Considering that a major portion of Crown land is to be devoted to HPF, the protection of ecosystems and biodiversity needs to be front and centre in the SGEM. While the guide devotes many paragraphs to discussing biodiversity, the over-arching commitment for protecting habitat for wildlife is absent. That said, several aspects in the SGEMs are positive.

- 1) Excluding specific types of exceptionally biodiverse and sensitive habitats from harvesting.
- 2) Greater emphasis on retaining forest cover
- 3) Inclusion of permanent reserve trees

Nonetheless, the macro and micro messaging of the SGEM is “let’s look at details of harvest management strategies” and hope these specifics will blind readers to the lack of planning for biodiversity conservation. Unfortunately close examination of the SGEM reveals a range of approaches that have no place in ecological forestry and have been described as trapdoors allowing HPF into the matrix lands. My explanations follow with my recommendations (in bold).

1) Classifying lands into Zonal and Azonal areas is a major flaw. This classification is based on soil characteristics, with Azonal areas being judged so nutrient poor that the chances of forest regeneration after harvesting are reduced. Harvests in these areas are destined for low retention followed by planting! Much of Southwest Nova Scotia has granitic soils that have suffered under repeated cycles of over-harvesting. I ask: what place does tree planting have in ecological forestry? Why are these lands considered for ecological forestry when they cannot be harvested ecologically? The department has better means at its disposal for judging how to manage lands with poor soils. The Nutrient Budget Model produced by L&F biologists could be used to improve soil nutrients and the quality of forests on damaged sites. 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 Lahey is trying to reduce. **The Zonal/Azonal categories must be removed from the SGEM.**

2) Planting trees in the matrix lands meant to be reserved for ecological forestry is nonsensical. **Planting trees is for plantation forestry.** Lands that would need tree planting to regenerate a forest should be in the HPF portion of Crown land.

3) The SGEM discusses retention levels at great length: which type of tree to retain and how many and how they are distributed, etc. The Summary shows retention levels as low as 20. This retention level hardly differs from current clear cutting practices! **Retention levels should not fall below 70%.** Maximum removal should not exceed 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, approximately 1% a year in our forests. So 30 years would pass before another harvest was permitted.

4) **Explicit evaluation of wildlife habitat should be part of the keys for pre-treatment assessments (PTA).** Identification of tracks, scat, nests, browsing activity all are relatively easy to integrate into PTAs.

5) **Forestry should cease during the migratory bird nesting season to that we are in compliance with the Migratory Bird Convention.** This needs to be explicitly stated in the SGEM.

6) The size and permanence of access roads as well as the timing of their construction need to be addressed. These are often built before the harvests have been approved. **The impact of access roads on habitat connectivity and ecosystem health needs to be part of the PTA.**

How to proceed?

Two and a half years after the release of the Lahey report, industrial forestry has been having free rein: Talk and Log has been the *modus operandi*. While the SGEM has serious flaws that must be remedied, it is better than the old Forest Management Guides. I feel that this revised SGEM should replace the FMG. The data from the PTAs for the harvests that have been approved should be run through the programs in the SGEM to adjust the harvest method.

Revisions of the SGEM need to take the various problems I (and others) have raised into account. Given the difficulties identified by Prof. Lahey, the revisions need to be examined by independent third party authorities. A final revision of the SGEM by Dr Kenefic and/or Dr. Seymour and the inclusion of public recommendations, will help to make the SGEM a tool of which we can be proud.

Reform of the Crown Lands legislation and the Forests Act is sorely needed. Crown lands do not exist solely for the purposes of resource extraction. Crown lands are public and the public deserves to benefit from their multiple values. We need to modify legislation to recognize the diverse values of our Crown forests in the context of climate change, social values, ecosystem services, precipitous declines in biodiversity, as well as economics -tourism, jobs, non-timber forest products, quality lumber production, and value-added products.

Finally, all these questions need to be seen in light of the uncertain and evolving nature of climate change. The introduction of the SGEM explicitly recognizes this, but little more is said about the crucial question of enhancing the capacity of our forests for carbon sequestration. "Climate change mitigation could involve management action to reduce greenhouse gas emissions or increase carbon sinks like forests (IPCC, 2014). By leveraging aspects of both mitigation and adaptation, the Triad model of ecological forestry is one such multifaceted approach for managing a diverse set of forest values and trade-offs in a changing climate (Nitschke & Innes, 2008)."