

Biodiversity in the Plowed and Unplowed Forest

PEI FORESTRY POLICY

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forestry n. Wooded country, forests: science and art of managing forests

The Oxford Dictionary sums up the essentials of forest management. Forestry, we are told, is both a science and an art, or at least it can be. Most often, forest management practice on PEI seems to be dictated by how much economic return we can get from forests, and science and art are given little room in the economic equation. The legacy of the energy crisis and old field white spruce is a big influence on what has been done in the forest in the last 20 years. Now there is an opportunity to take a more dispassionate look at what is left and apply a little more science and art to future actions.

There are many good questions in the Forestry Policy Discussion Paper. I will address issues regarding the **unplowed forest** and the **plowed forest** as they relate to conserving wildlife and biodiversity values.

The unplowed forest is a big repository of native wildlife, including mammals, birds, reptiles, amphibians, plants and insects. In contrast, the plowed forest that has grown up in white spruce lacks many of the native plant and animal species that once inhabited it before it was clearcut, stumped and soils disturbed. Try converting your lawn to native forest and you will soon see that many elements are missing. Native plants will be hard to re-establish as they compete with introduced weeds and grasses, and soil beetles will remain the species introduced from elsewhere. Make a white spruce stand and the red-backed salamander, the woodland species that inhabits most unploughed forests, will be absent. These are some examples of how clearing and plowing affected the forest. The forest that has grown up on plowed land has little similarity to a native forest, though it is suitable for use by a considerable number of wildlife species.

Forests that have never been plowed retain most native species (Still, some species may not have survived repeated patch cuts and clear cuts in the unplowed forest). **If we want to conserve a diversity of biota (biodiversity) and keep species from disappearing from PEI, then the unplowed forest should be a top priority for conservation programs.** This includes most upland hardwood stands and damp to wet black spruce stands.

What would such a conservation program involve? **It would prevent clearing of unplowed forest for agricultural and recreational uses.** Incentives to do so would be removed. Would permits be required to build a home in among the maple trees? Some studies have shown woodland wildlife will avoid a considerable radius around such housing. Abolition of woodland housing projects is not likely to happen soon, as an education program definitely would be needed to build support among the home building public. **However, environmental assessments of subdivisions involving unplowed woodland should consider this question**

and make suggestions for avoidance.

How should these forest be managed?

There are many suggestions in the literature about how forests and northeastern forests in particular should be managed to conserve biodiversity. Some ideas which I think are particularly pertinent are listed below.

1. **Mimic natural disturbance regimes.** In the Acadian forest, “within stand” diversity is accomplished naturally by regeneration in gaps in the canopy when trees become senescent and fall. Gaps rarely exceed 0.2 hectares, likely well matched by woodlot owners in the past doing small scale firewood harvests. Large scale natural disturbances in tolerant hardwoods are rare. **Therefore, avoid clear cutting in tolerant hardwoods.** Rely on “within stand” diversity to maintain uneven aged hardwood stands. **Government policy of giving contracts for woodcuts to sawmills discourages application of more appropriate wood harvest techniques.**

2. At the level of forest stands, younger stands usually have more species diversity. However, to maintain diversity at the landscape level,(ie having a diversity of stands in the landscape, older, younger, even aged, uneven aged, differing species etc) and to avoid losing species (and therefore diversity) keep more older stands. **PEI should develop an “Old Growth Forest Policy” for its public lands as some species exist only in older forests.** These are generally rare species because there is not much older habitat left for them. Some forest bird species like boreal chickadee and grey jay need older conifer stands. Short conifer rotations will cause some bird species to become quite rare. Black throated blue warblers favour old hardwoods with ground hemlock in the understory.. Many plant species are exclusive to old stands. These are only a few examples. Since the private sector is unlikely to keep old forests to address this gap in biodiversity conservation, there is more responsibility for government to carry programs forward on public lands.

3. For old field spruce stands, avoid large clear cuts which are beyond the range of variation of natural disturbances in conifers. **Where cuts are done, re-establish structural diversity which will enhance diversity of wildlife species composition** by leaving slash, coarse woody debris, stumps, standing deadwood, and cover patches including significant patches of older live trees. Burned wood patches (if present) can favour some species like black backed three toed woodpeckers. Flycatchers need deadwood perches. Clear cuts are desiccated habitats so unless there is a fast regeneration of saplings this habitat is unsuitable for creatures like amphibians that need moisture. . A regenerating woodlot with these elements will develop more diversity than a stand without them. There are some useful suggestions in the booklet “Voluntary Sustainable Management Practices for PEI Forest Contractors “.

What’s in a word? **Forestry** policy evokes the idea that we are managing the forest to get its products. **Forest** policy seems to me to get beyond that to managing a forest for all forest values. The science of forest biodiversity conservation and the art of promoting wise use need much more discussion in forest policy. I am certain that if we approached all forest management from the point of view of biodiversity conservation, our forest practices would radically change.

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