

# SPECIAL REPORTS

## A NATURAL RESOURCES VISION

Following is David Patriquin's July 31st, 2008 submission to Voluntary Planning (VP), the Citizen's Policy Forum on Nova Scotia's Natural Resources, [volplan@gov.ns.ca](mailto:volplan@gov.ns.ca), regarding the stewardship and sustainability of our provincial natural resources, on HFN's behalf:

### WHAT IS YOUR VISION FOR BIODIVERSITY, FORESTS, MINERALS AND PARKS IN NOVA SCOTIA?

The government achieves its goals of protecting 12% of the total land area by 2015. It sets new goals, recognizing that the target of 12% of protected land must be applied to all landscape types, and that 12% is not an end but a waypoint; that much larger areas must be protected to avoid precipitous losses in biodiversity.\*

A network of core protected areas, large patches of forest land on long rotations, and corridors encompassing 30% of the land area is developed that spans the province and continues through Chignecto Isthmus into New Brunswick. This is achieved on private lands through a combination of land purchases, easements, land use zoning, tax credits, and other incentives.

Forests occupy almost 80% of the land area, thus their management is key to biodiversity conservation. In the 21<sup>st</sup> century, selection cutting becomes the norm, making use of much smaller, more fuel efficient machinery (than used in 2008), as well there is some revival of horse logging. Clearcutting is restricted to 10 hectare lots, and requires an environmental assessment. Whole-tree harvesting is not permitted. There is no clearcutting on crown land. Strategies and regulations are developed to achieve at least 15% old growth forest (with natural gaps in earlier successional stages) in all currently forested landscape types by 2100 (compared to ~0.3% in 2008, 8-9% in the 1950s and perhaps 50% in pre-European times); also for reintroduction of forested land on 15% of deforested landscapes. In addition to conserving biodiversity, these measures rescue the forest resource from irreversible declines in productivity due to undermining of the soil base by industrial forestry, increase the value of forest products per unit harvested, employ more people, and improve the capture and storage of water.

A minimum requirement for one hundred-metre wide riparian buffer zones along 80% of watercourses is implemented. These serve as wildlife corridors and habitat, in addition to their stream protection function (which might be satisfied by narrower zones).

Road needs are re-evaluated and a long term plan to reduce road intensity is introduced. Detailed specifications for wildlife passageways across roads are developed. One hundred-metre or wider natural habitat buffer zones are required adjacent to major highways.

Wetland protection is enhanced. Amongst the new provisions: wetland regulations are extended to treed bogs, a major wetland type in Nova Scotia that is not covered by current wetland regulations; a minimum 5:1 compensation ratio is set for any wetlands that are significantly impacted by development.

Peat excavation operations and draining of peatlands are not permitted in Nova Scotia.

A coastal zone management/conservation act is introduced. It includes strong restrictions on development within 100 metres of shorelines and steps in order to allow half of dyked land to return to natural salt marsh. At the federal level, several Marine Protected Areas are established.

The mining act is changed to forbid all mining exploration in environmentally sensitive areas. The moratorium on uranium mining is made permanent. Open pit/quarry type operations are restricted to areas of 20 hectares and less in environmentally least-sensitive areas. Environmental impact assessments for mining require assessment of the net economic benefits (or losses) to local communities and the province over a period of 150 years, using GPI (Genuine Progress Index) type accounting.

In the energy sector, exploitation of geothermal energy replaces the focus on wind power, because it (geothermal energy) offers more opportunity for reducing demand on traditional energy sources, and is more environmentally and human friendly. Small scale sustainable cutting of wood for energy is permitted by individual property owners for their own purposes, but large scale harvesting of wood for energy is not permitted; rather biomass fibre crops such as switch grass, fertilized with municipal wastes, are grown on recently reclaimed land as an initial stage in their reclamation.

The landscaping and horticulture industry turns native, introducing more native species to older neighborhoods and developing techniques for maintaining the local native landscape character in new developments.

Biodiversity conservation is introduced into the school curriculum. Students go on field trips to learn about the natural history of their area and work on native landscape reconstruction projects on school grounds and in their communities.

#### \*NOTE: How much is enough?

We have a reasonably good record in Nova Scotia for setting up protected areas and the government should be commended for committing to 12% protected area by 2015 (up from approximately 8.2% currently). However, fragmentation of natural habitats at large continues pretty well unabated. Habitat fragmentation is responsible for more than 80% of biodiversity losses. Hence, at best, protecting 12% of habitat while larger areas continue to degrade will help only to stem the tide, not to stop it or reverse it.

We are only just at the beginning of large scale species losses associated with fragmentation of habitat. The alarm bells about species loss were raised in the 1980s because of losses that had occurred until then and, more so, because a better theoretical understanding of species biodiversity predicted huge losses to come with continuing destruction and fragmentation of habitats. E.O. Wilson's rule of thumb predicts that a tenfold reduction in habitat results in approximately 50% reduction in the number of species an area can support. Many or most species may hang on in a remnant habitat for a while, but are lost as they become locally extinct





and cannot be replaced by immigration from other, still extant populations in other suitable habitats. So, in addition to conserving as much intact habitat as possible, we need to reconstruct a network of habitats and wildlife corridors across the whole province in order to maintain the natural immigration and gene flow between populations in different regions.

Ideally, under the provincial scheme for protecting land an equivalent proportion of land would be protected in each of the 80 natural landscapes. Currently, nineteen of the 80 natural landscapes of Nova Scotia are not represented at all in Protected Areas, and 62 have less than 12% of their area protected.[1] Thus as we move towards the 12% target for 2015, priority should be given to the most poorly represented landscapes.

The 12% figure, however, should be seen as a way-point, not an endpoint.

This figure has its origin in The World Commission on Environment and Development Report: Our Common Future (1987).[2,3] The report called for at least tripling the expanse of protected areas which then stood at about 4% globally. Tripling seemed politically feasible, but this target was cited as a minimum and was not based on formal considerations of the area required to sustain species and ecosystems. A recent study by Karen Beazley and associates in the School for Resources and Environmental Studies at Dalhousie used a GIS and modeling based approach to estimate conservation needs in Nova Scotia[1]. They concluded that "~60% of Nova Scotia, including 32% in core areas, should be managed for conservation objectives to maintain genes, species, and ecosystems over time." Similar estimates have been forthcoming from other studies. In practice this means that much larger areas than 12% of the province need to be managed for biodiversity conservation, regardless of whether they are in private or public hands.

1. Beazley, K. et al. 2005. Biodiversity considerations in conservation system planning: a map-based approach for Nova Scotia, Canada. Ecological Applications 15(6): 2192-2208

2. Report of the World Commission on Environment and Development: Our Common Future. (1987). Transmitted to the General Assembly as an Annex to document A/42/427 – Development and International Co-operation: Environment. Retrieved from <http://www.un-documents.net/ocf-06.htm>.

3. Wiersma, Y. F., & Nudds, T. D. (2005). On the fraction of land needed for protected areas. Chapter 7 in N. Munro et al. (eds). Making ecosystem based management work: proceedings of the fifth annual conference of the Science and Management of Protected Areas Association, 2003. Science and Management of Protected Areas Association. Retrieved from [http://www.mun.ca/biology/ywiersma/wiersmanudds\\_sampaa.pdf](http://www.mun.ca/biology/ywiersma/wiersmanudds_sampaa.pdf).

#### WHAT ARE THE STRENGTHS OF THESE FOUR AREAS OF NATURAL RESOURCES?

- Biodiversity: our 80 diverse landscape types in a small province, and their associated biodiversity. Protecting and enhancing biodiversity at all levels (genetic, species, population) is our best preparation for climatic change, whatever turn that takes.

- Mining: some valuable resources for small scale, environmentally-sensitive mining for many centuries.
- Parks: truly exceptional.
- Forests: the Acadian forest, potentially.

#### WHAT BARRIERS OR ISSUES AFFECT THESE RESOURCES?

- Currently, there seems to be a general lack of recognition that the 12% protected area target was conceived (by conservationists, at least) as a starting point, not an end-point in protecting land for biodiversity conservation.

- We have some very good human resources and good scientific and economic bases for pursuing the vision described above (examples: 3 detailed land classification systems for N.S.; GPI accounting; universities, community colleges)

- Climatic changes may not materialize as we anticipate (it could get colder for a period, warmer faster than we anticipate, or change more slowly); hence our best strategy is conservation of biodiversity at all levels (genetic, species and ecosystem).

- Only 30% of land in Nova Scotia is crown land, a low proportion compared to the rest of Canada.

- The crisis in the forest industry is an opportunity to change our way of thinking about the use of forests. Amongst the factors leading to change: high costs and shortages of fuel; increased value of higher value wood products because of shortages of wood globally; decline in the demand for newsprint; new demand for certified wood; evidence that clear-cutting has contributed to erratic stream flows, decline of fish populations and declining water quality in the province; increased value of carbon credits; and increased importance of eco-tourism.

- Increased fuel costs should reduce vehicle use and need for new roads in the province.

- Changes in the economy at large will lead to changes in economic thinking and money markets to favour smaller scale, sustainable operations.

- On the whole, Nova Scotians share a deep appreciation of our natural resources.

#### WHAT DO YOU SEE AS YOUR COMMUNITY'S PRIORITIES FOR THE FUTURE IN THESE FOUR AREAS?

- Biodiversity: the need to think beyond 12%, and to apply the concepts to all landscape types.

- Forests: reduce the annual allowable cut to 1/3 of the current value; reduce clear cutting drastically; protect existing older growth forest; implement longer rotations.

- Mining: permanent moratorium on uranium mining; strong restrictions on open pit/quarry type operations.

- Parks: public education to value the role of parks in biodiversity conservation and to appreciate the sensitivity of biodiversity to human actions.

#### WHAT VALUES ARE ESSENTIAL TO GUIDE THE HEALTH AND SUSTAINABILITY OF THESE FOUR AREAS?

- Respect for our land and respect for each other.
- Transparency of public processes.
- Application of Precautionary Principle.

– David Patriquin

