

Memoire BAPE hearings on seven biodiversity reserves and one aquatic reserve in Abitibi-Témiscamingue (November-December 2012).

--Paula Dalgaard Armstrong, biologist, forest ecologist

- The purpose of protected areas is to protect biodiversity. Protected areas are created in order to safeguard the habitats of numerous species, using the “coarse filter” approach, as being more effective than protecting individual species. The establishment of protected areas is also inspired by the U.N. Convention on Biological Diversity (1992), which was signed by both Québec and Canada.
- Even when the “coarse filter” approach for protected areas is used, parts of the landscape need to be prioritised for protection according to urgency. For prioritization, we need to use information on species ranges and threats to species (Brooks et al. 2004). However, MDDEFP protected area plans are presently based largely on the “representivity” of geological zones (“natural regions” and “physiographic units”), as if preserving samples of the landscape. The MDDEFP looks at forest types, etc., protected in each geologic zone, but not at how many species’ survival is enhanced by protected areas in the zone. Protecting the same proportion (e.g. 8% of area) of each geological zone does not help the most species. The geological regions of Québec do not cover equal numbers of species, nor of threatened and endangered species, and their delimitations do not reflect biodiversity threats from development and climate change. Higher priority should be given to Southern Québec, especially to the Eastern Townships and the Ottawa River Plains, which are biodiversity hotspots (CPDNQ 2008), along with hills, valleys and wetlands on their borders. In the boreal forest of Québec, protection efforts still need to focus on the requirements of several wide-ranging species such as woodland caribou that are particularly sensitive to human activities.
- To take one northern species as an example, consider the wolverine (*Gulo gulo*), which is native to Abitibi, and which used to range across most of Canada. Will any of these eight protected areas in Abitibi-Témiscamingue help to protect the wolverine, which appears to be the most threatened mammal in Québec? The Eastern Canada population is listed as “endangered” under the Canadian Species At Risk Act (SARA). Wolverines are fierce, far-ranging scavengers--a male can travel 40 km in a day. But trapping is probably still a threat to the species—mainly because as scavengers, wolverines are a serious nuisance to trappers of other furbearers. Nevertheless, trapping is permitted in all eight of these protected areas. Wolverines are at the pinnacle of a trophic pyramid, and their recovery could be an indicator of a return to ecological integrity in the boreal forest. Perhaps at least one of these protected areas should be designated as an ecological reserve, to give a higher level of protection to this and other vulnerable species.
- Similarly, if the Dumoine Aquatic reserve becomes a national park, such a designation should aid survival of more sensitive species. At the same time, it would increase financial resources for development of ecologically appropriate tourism.
- The MDDEFP’s 2012 management proposal for these Reserves includes monitoring. The proposal in the BAPE document is to first produce a “profile” of the natural environment, based on presently-available data (page 210 footnote). At the same time, it says that little data is available on most species ranges, etc. A profile based both on present data and on a new baseline survey is needed. The MDDEFP would enlist FloraQuébeca in surveys, along with its own “Faune” department. It would also survey human use of the Reserves, roads that could be closed, etc.



- Connectivity is “the extent to which movements of genes, propagules (pollen and seeds), individuals, and populations are facilitated by the structure and composition of the landscape” (Rudnick et al. 2012). Both loss of habitat and fragmentation of habitat are threats to the survival of species. The Québec government’s planning and management of protected areas needs to give greater consideration to the connectivity of habitats on the landscape. It is impossible to understand, from reading the information document for this BAPE consultation, why in 2007-2008 the Dumoine Provisional Aquatic Reserve delimitation was so narrow (about 2 kilometres wide) in the region northwest of Lac Ingley. No constraint due to mining claims appears on the map on page 201, for example. This region of the Reserve is now a bottleneck to connectivity. During 2008-2012, forest harvesting and road-building activities then took place along the eastern border of this narrow part of the Reserve, and nine new cottaging leases were given out at Lac Ingley. Even if the Dumoine Reserve is now widened (which it should be), these major disturbances will affect its effectiveness for decades, a result of the lack of foresight and cooperation among ministries of the Québec government.
- Awareness of the need for connectivity on the landscape has increased tremendously in the past decade (Rudnick et al. 2012). Connectivity was the theme of presentations at the Québec Association of Biologists’ year 2012 Congrès. Protected areas managers have suddenly become aware that if the greater landscape is lacking in habitat connectivity, climate change may leave many species “marooned” on their biodiversity reserves (Scott and Lemieux 2005). But incorporating landscape connectivity into protected areas planning requires characterization of focal species, and it needs planning for anthropogenic change (Rudnick et al. 2012). The connectivity modelling used in the MDDEP’s first Protected Areas Portrait (Brassard et al. 2010) was vague and unsatisfactory. Studies and scenarios based on movements of focal species and propagules could serve to estimate landscape connectivity without requiring an excessive amount of computer time. Landscape connections among the present biodiversity reserves for focal species need to be studied. And such findings should influence human interventions such as the locations of “Intensive Fibre Production Areas” (“AIPF”) that are soon to be created by the MRN in the greater public forest between protected areas. An Ouranos study is presently being conducted of protected areas’ vulnerability and connectivity in Gaspésie and Mauricie (L. Bélanger and F. Brassard, lead scientists). Strategic territorial additions on the borders of protected areas may also be a means of coping with climate change in the future. The small “refuges biologiques” for future old-growth forest should be retained within a few km of biodiversity reserves, as they are at the Lac Saint-Cyr Biodiversity Reserve, instead of being deleted as on the east side of the Dumoine Reserve. Protected corridors along rivers (present in the reserves in this BAPE consultation, and in Outaouais proposals) may be the reserve design that is the most resistant to climate change stress (Rudnick et al. 2012). None of this is to say that we and our governments should not take every action possible to reduce the atmospheric emissions that are producing climate change.

References

Brassard, F., A.R. Bouchard, D. Boisjoly, F. Poisson, A. Bazoge, M-A. Bouchard, G. Lavoie, B. Tardif, M. Bergeron, J. Perron, R. Balez and D. Blais. 2010. « Portrait du réseau d’aires protégées au Québec – Période 2002-2009 ». Gouvernement du Québec, ministère du Développement durable, de l’Environnement et des Parcs, Direction du patrimoine écologique et des parcs, Québec.

Brooks, T.M., G.A.B. da Fonseca, and A.S.L. Rodrigues. 2004. “Protected Areas and Species.” *Conservation Biology* 18: 616-618.

CDPNQ [Centre de données sur le patrimoine naturel du Québec], 2008. *Les plantes menacées ou vulnérables du Québec*. 3e édition. Gouvernement du Québec, ministère du Développement durable, de l'Environnement et des Parcs, Direction du patrimoine écologique et des Parcs, Québec. 180 pages.

Rudnick, D., S.J. Ryan, P. Beier, S.A. Cushman, F. Dieffenbach, C.W. Epps, L.R. Gerber, J. Hartter, J.S. Jenness, J. Kintsch, A.M. Merenlender, R.M. Perkl, D.V. Preziosi, and S.C. Trombulak. 2012. "The Role of Landscape Connectivity in Planning and Implementing Conservation and Restoration Priorities". Issues in Ecology Report #16. The Ecological Society of America, Washington, D.C.

Scott, D. and C. Lemieux. 2005. "Climate Change and Protected Areas Policy and Planning in Canada." *The Forestry Chronicle* 81:696-703.

United Nations Convention on Biological Diversity (UNCBD). 1992. Convention on Biological Diversity. 5 June 1992.