52 The Algonquin to Adirondack Conservation Initiative: a key macro-landscape linkage in eastern North America

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Introduction

Viable regional—and, ultimately, continental-scale—protected area networks are clearly a prerequisite for successful biodiversity conservation. This hierarchy of core areas, linkages, and compatible surrounding lands is exemplified at the continental scale by the Wildlands Project (Noss 1993; Wild Earth 2000) and its flagship, the Yellowstone to Yukon initiative. Associated regional-scale network visions and proposals are being developed elsewhere in North America. The Great Lakes region is spatially complex and conservation initiatives are constrained by intense human use, but a regional protected area network here is an essential component of any continental-scale vision. The requirement that these protected area networks must be planned and that each component be part of an integrated design across scales is critical. These ideas are implicit in the modern protected area paradigm (Stephenson 1995).

It is also reasonably well accepted in conservation circles that ecosystem management in the broad sense, involving fairly radical shifts in human values and economics as well as changes in our approaches to land use and resources allocation, is a prerequisite for a more sustainable society in the future (Noss 1994; Costanza 1997; Agee and Johnson 1988).

Two contributing but complex concepts are important to understand. The first is the role of spatial visioning in conservation planning. The idea is not new; zoning and transportation plans are spatial visions based on mapped planimetric data. The availability of satellite and other forms of visual information, combined with the capabilities of geographic information systems (GIS) technology, have made spatial visions currently popular (Table 52.1) with scientists, land use decision-makers, and the public (Groves et al. 1998; Jalava et al. 2001).

The second concept is the science underlying the use of cores and corridors (the main elements of spatial visions), which is uncertain and has received some criticism. Certainly the differences between viable cores and "sinks" need to be appreciated. Likewise, the distinction between corridors for the movement of individuals between populations and those that act as actual habitat linking larger habitat cores needs to be understood (Hudson 1991; Soulé and Terborgh 1999; Merriam 2001). Scale is the key. Large cores (and compatible surrounding uses), especially if they were planned to conserve umbrella or keystone species, are clearly more likely to be viable in the sense of conserving all aspects of biodiversity than small ones. Further, at the smaller scales where the movements of individuals are involved, it is often the current, not the potential, landscape that has been evaluated (Fahrig and Merriam 1994; Beier and Noss 1998). Suitable corridors for most species are not likely to be found in existing remnants, so design and restoration are required.

The larger the scale, the less these concerns pertain and the more patterns of mountain, valleys, and rivers that generate "functions" become relevant. This paper is focused on what I call the "macro-landscape" scale, comparable with what is now

From **Crossing Boundaries in Park Management: Proceedings of the 11th Conference on Research and Resource Management in Parks and on Public Lands,** edited by David Harmon (Hancock, Michigan: The George Wright Society, 2001).

often referred to as "bioregional land use planning" (McNeely 1999; Szaro 1999; Miller and Hamilton 2000).

· Responds to advances in science, such as landscape ecology and conservation biology; · Can take advantage of existing or anticipated land use opportunities, such as abandonment of agricultural land or projected development patterns near urban areas; · Is easily revisable using GIS so many alternatives can be investigated; · Incorporates a range of approaches—especially restoration, which is important wherever humans have exploited the land; · Makes it easier to involve individuals and organizations interested in all forms of private stewardship as well as governments; and · Provides a "picture" that is worth far more than a thousand words of explanation.

Table 52.1. Benefits of spatial visioning.

The Great Lakes

The Great Lakes is a global-level biome. Most people can call up in their minds the general shape of the five lakes drained by the St. Lawrence River and its southwest-to-north-east orientation (Figure 52.1). Fewer appreciate that these lakes penetrate fully one-third of the way across North America, creating a substantial barrier to north–south plant and animal movement, with the exception of those that disperse aerially. The potential habitat changes and relatively short time frames implied by human-induced change make this barrier of greater concern today than in the past.

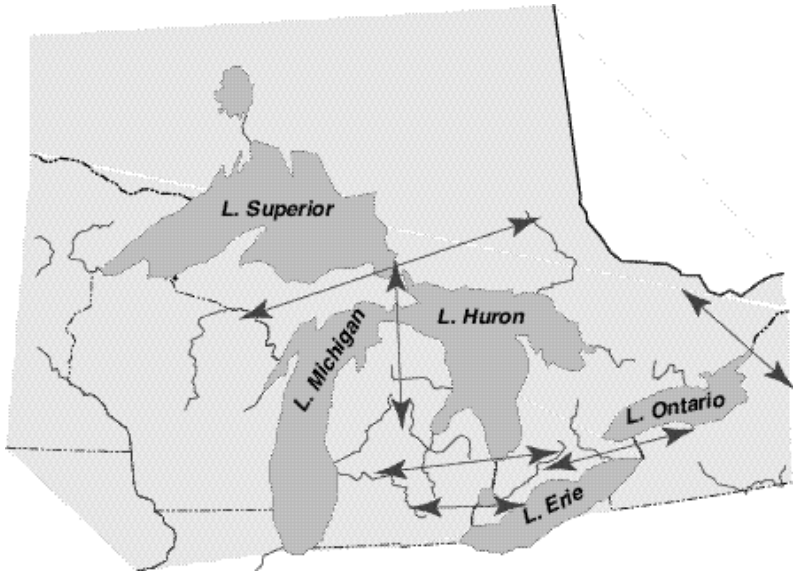

Figure 52.1. "Land" crossing points, Great Lakes Basin.

Figure 52.1 also shows the major land-based migration routes across the Great Lakes. All have been compromised, but all have potential for a continued biogeographical role, particularly through the use of protected areas and conservation designations. Ensuring this dispersal capability will become more important in a future that features global climate change and the subsequent shifting of species ranges and large-scale migrations in response. From west to east we can see:

- Lake Superior macro-landscape corridors reaching north from Nipigon Bay up the Nipigon River to Nipigon Lake, Wabakeimie Provincial Park, and, ultimately, to the Hudson Bay watershed. Additional corridors fan out to the east, linking at Sault Ste. Marie, and to the west across the proposed Lake Superior National Marine Conservation Area, Sibley Provincial Park, and Isle Royale National Park, and more southerly to Apostle Islands National Lakeshore and then towards the upper Mississippi River watershed.
- At the junction of Lakes Huron, Michigan, and Superior several corridors intersect. Movement is possible from the state of Michigan to the north along a Lake Superior shore dotted with small protected areas. The Lake Superior shore is now connected to the Georgian Bay shore through the heritage coast concept that arose from the Ontario Lands for Life (OMNR 1999) process. A route can also be envisioned from southern Georgian Bay to the Ottawa River. Importantly, the "Niagara Escarpment" also extends west through this junction into the Upper Peninsula of Michigan with extensive state and national forests, and along the west side of Lake Michigan. To the east, the escarpment includes Manitoulin Island and the Bruce Peninsula as it winds through south and central parts of Ontario across the gap between Lakes Erie and Ontario to the Finger Lakes region of New York (Nelson 2001).
- In the southern Great lakes a series of smaller corridors exist. One is at Lake St. Clair, three cross Lake Erie from the national and provincial parks at Point Pelee, Rondeau, and Long Point on the north shore, and another connects Prince Edward County to the south across Lake Ontario. The last corridor is across the St. Lawrence River in the Thousand Islands area using the Frontenac Axis to link Ontario's Algonquin Provincial Park to Adirondack State Park in New York.

If one views these corridors from a "glass half empty" perspective, most are compromised. The Sault Ste. Marie junction is very constricted and developed. The junctions near Lake St. Clair and Niagara are certainly alienated. Some, such as those in Lake Superior, involve great expanses of water, creating an even more "stepping stone" approach than a completely terrestrial corridor. Others, such as those crossing the southern Great Lakes, do not appear to link to even valid stepping stones, although bioregional restoration and connectivity planning is occurring in southern Ontario through the work of the Carolinian Canada Coalition (http://www.carolinian.org).

If our "glass is half full," the now-inadequate connectivity along these routes can be supplemented and their capacity to facilitate biotic movement and large ecological functions enhanced. It is evident that the best of these macro-landscape linkages (in the sense of current potential) is that across the St. Lawrence River. A more detailed examination of this location illustrates how spatial visions for all these routes can be further conceptualized.

Eastern Ontario and northern New York

The Frontenac Axis, a bedrock formation that creates the Thousand Islands stretch of the St. Lawrence River linking the Canadian Shield to the Adirondack Dome, is central to a spatial vision for this region. Figure 52.2 provides a graphic

illustration of the macro-landscape linkages and conservation potential spreading out from the Thousand Islands nexus.

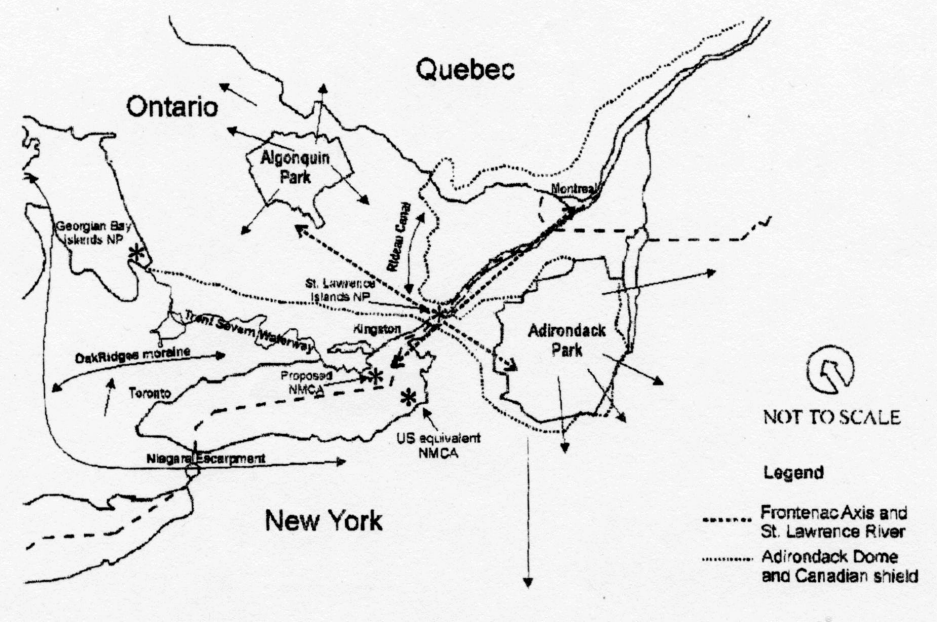

Figure 52.2. Landscape framework concept for central and eastern Ontario.

Macro-landscape ecosystem functions are rarely recognizable in patterns of protected areas established for various purposes by the many jurisdictions involved at this scale. Further, protected areas are usually physically and institutionally isolated from their surroundings. In the case of the Thousand Islands nexus, the protected area pattern does to a certain extent reflect the macro-landscape ecosystem functions.

The St. Lawrence River is edged by park lands (under the jurisdiction of the St. Lawrence Parks Commission and its U.S. equivalent) with a concentration of New York state parks (e.g., Wellesley Island) and a Canadian national park (St. Lawrence Islands) at the nexus itself. Near the start of the St. Lawrence River in northeastern Lake Ontario, Parks Canada has identified the possibility of a national marine conservation area in the lake. Adjacent to it are Parks Canada lands at Prince Edward Point and Department of National Defence properties on the lake side of Prince Edward County, which also has several provincial parks, such as Presqu'île and Sandbanks. A national marine conservation area here could be complemented through a Canadian request for consideration of an appropriate designation in the USA portion of Lake Ontario.

The Frontenac Axis likewise has existing protected areas. such as Charleston Lake and Bon Echo provincial parks, as well as extensive public lands as it widens north from the St. Lawrence River. Significantly, the Frontenac Axis is anchored by two of the largest protected areas in eastern North America: Algonquin Provincial Park and Adirondack State Park. They create core protected areas at either end of what is essentially a terrestrial movement corridor. The sets of rivers for which these

two parks are headwaters also include a variety of protected areas as they spread out from the cores.

Further from the nexus along the edges of the Canadian Shield to the northeast and northwest, two federal conservation corridors along the interface of the shield and the St. Lawrence Lowlands, the Rideau Canal and the Trent-Severn Waterway, already exist. Peripheral to Algonquin Provincial Park and Adirondack State Park are extended protected area opportunities in the form of the Madawaska Highlands in Canada and the Lake Champlain Biosphere Reserve, which in fact links to the Great Northern Forest of Vermont and Maine. To the west, the Oak Ridges Moraine and the Niagara Escarpment figure prominently. Of course, to the north in Ontario the Canadian Shield stretches for hundreds of kilometers, while to the south in New York state the Appalachian Mountains form the eastern spine of North America.

The Algonquin to Adirondack Conservation Initiative

Spatial visions are a fine essential tool for large-scale conservation planning, but they remain paper fantasies until they engage the public, especially decision-makers, and have been translated into on-the-ground actions. The key to realizing the macro-landscape conservation potential of eastern Ontario and northern New York is the corridor across the Thousand Islands. A multi-partner coalition, the Algonquin to Adirondack (A-to-A) Conservation Initiative, is already in place and is gradually establishing the need and catalyzing the actions of residents and local governments.

The entire corridor between the Algonquin and Adirondack parks is about 270 km long, but the critical Frontenac Axis portion is 100 km long and 60 km wide. Except in the St. Lawrence River Valley itself, the terrain is rugged with exposed bedrock and thin soils. Much of the land is relatively unaltered since the first lumber harvest swept across the region. Although governments of that era promoted farm settlements, the poor agricultural capabilities have led to abandonment of fields and considerable natural recovery. As a result, human population density is low and there are few towns (except along the St. Lawrence River) near which roads and utility rights of way are also found. Not surprisingly, private land ownership is greater near the river, but considerable public lands are found farther from it.

The Thousand Islands and adjacent areas of New York (e.g., Lake Placid) attracted summer visitors from large eastern seaboard cities, and many industrialists established extensive retreats in the mid-to-late 1800s. Since then the entire region has evolved into an internationally recognized tourist area famous for the beauty of its natural landscapes. As shown previously, numerous protected areas have been established and much of the private lands support outdoor recreation complemented by water sports and fishing on the St. Lawrence River and at the eastern end of Lake Ontario. Generally, the permanent residents appreciate their environment, are not in conflict with seasonal residents or tourists, and have established a strong, positive cross-border relationship. Active interest in conservation is evident, for example in the Adirondack Park Council and the presence of land trust organizations in Canada and the USA.

This combination of circumstances means A-to-A is not fraught with crisis-level urgency or demands for large new protected areas, as is often seen elsewhere in North America. Continued recovery through education and consensus-building that actively leads to a more sustainable natural environment is the operative strategy.

The A-to-A mission is "to restore, enhance and maintain ecological connectivity, ecosystem function and native biodiversity, while respecting sustainable human land uses in the distinctive region of Ontario and New York State that lies between and embraces Algonquin and Adirondack Parks." Table 52.2 lists the operating principles used. The premise is that the connection will best be maintained, not by government policy or imposed regulations, but by the voluntary actions of thousands of individual landowners. Their new vision of landscape conservation will be based on

the shared belief that the cumulative effect of thousands of individual actions will keep this link alive throughout this century and into the future (CPAWS 1999).

Creating effective organizations to deliver conservation is usually a demanding task. The "converted" are often already over-committed; convincing others is a delicate first step, and champions with the time, energy, and knowledge to lead are few and far between. These factors have affected A-to-A. In addition, the international aspect has created barriers, even between two very similar friendly countries with strong local relationships. Differences in how charitable organizations incorporate and how land trusts operate, different local and municipal planning procedures, and, in some circles, an unreasonable concern about "foreigners" have come into play.

· ***Stewardship.*** Stewardship is caring for the land, and making choices about how to manage a property so as to maintain the land's desired characteristics; · ***Cooperation.*** Scientists and landowners must work together to combine conservation biology with the needs of the people living on the land; · ***Not bounded.*** Maintaining ecological integrity throughout the Algonquin to Adirondacks region requires that people transcend political boundaries; · ***Flexibility.*** Partners in the A to A effort must acknowledge that they will have to learn as they go and be flexible in their planning; · ***Long-term change.*** Achieving sustainable communities while maintaining healthy natural habitat is a long-term process, and achieving the A to A vision will require many incremental changes.

Table 52.2. Six principles that guide the A-to-A.

The result, after some false starts, is a dispersed organization. Major conservation interests, such as the Canadian Parks and Wilderness Society in Canada and the Wildlands Project in the USA, have assumed an "umbrella" role, while regional-scale organizations have been established in both countries.

While progress sometimes seems slow or uneven, all A-to-A participants realize that the conservation initiative is long-term. There is no immediate need to deflect continued rural development or establish significant new protected areas in order to be successful. Confrontational issues can be identified and worked through systematically. This type of protection campaign is different than the crisis situations most familiar to conservation activists. New styles of working are being learned and the tangible accomplishments are mounting (Table 51.3). Obviously far more information is available on the A to A Conservation Initiative and more will come on stream as momentum grows. A good starting point for the curious is the Web site http://www.AtoA.org.

Conclusion

The idea of large-scale conservation planning presented here is not unique globally or for the Great Lakes. In fact, it is the amount of large-scale planning on the Great Lakes (e.g., Harkness et al. 1999; Zorn and Quirouette 2000; Lake Erie LAMP Working Group 2000) that creates the potential for a protected areas network vision that contributes to a healthy biome with sustainable human activities.

The factor that characterizes all these planning activities is that they are for limited areas or address specific issues in the Great Lakes basin. None begin with a large-scale concept of sustainable land use and resource allocation featuring a protected areas system in a ecologically healthy land use mosaic. In every case, however, the ideas espoused are at scales greater than traditional land use planning for municipalities, counties, or small watersheds. Land use planning is similar to putting a jigsaw puzzle together. Single pieces or groups of pieces sometimes make sense and

seem independent, but the "big picture" is not clear until the pieces are integrated. Most people wouldn't start a 1,000-piece jigsaw puzzle without studying the picture on the box as a guide to the direction needed and the eventual results. We seem ready to ignore these bigger pictures when it comes to making decisions about the world we depend on, however.

· Initial feasibility study (Keddy 1995)
· Frontenac Axis Research Needs Symposium (1995)
· Algonquin to Adirondack Interdisciplinary Research Workshop (2000)
· Brochure and slide show
· Presentation to community groups and local governments
· Canadian Steering Committee
· St. Lawrence Region "chapter"
· Three broad-based organizing workshops (1996, 1997, 1999)
· Mission, vision, principles
· Available GIS data (zoning, land use, ownership, natural)
· Wolf habitat suitability analyses, Canada and USA (Quimby et al. 2000; Trombulak and Lane 1999)
· Successful funding contacts
· Ongoing full- or part-time paid staff
· Numerous media articles
· Recognition by national conservation interests
· Algonquin to Adirondack International Trail study (Beaubiah 1999)

Table 52.3. A-to-A accomplishments, completed or ongoing.

Parks Canada in Ontario (along with many others) recognizes these facts and wishes to encourage a cooperative, basinwide vision that can guide as well as provide a general template to measure success. This vision can focus effort and funding to those aspects of land use most critical to the future. Parks Canada will continue to advocate the need for such a consensus-based vision for the Great Lakes and help to catalyze it as part of its work on greater park ecosystems for Ontario national parks.

The take-home message of this paper, then, is that all the interacting agencies and individuals living in the Great Lakes basin need to work together for a secure, healthy future.

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