



Panel on the Future of the Trent-Severn Waterway Commission sur l'avenir de la voie navigable Trent-Severn

DISCUSSION PAPER #1 **NATURAL ENVIRONMENT**

These discussion papers do not represent the conclusions or positions of the Panel. They are intended to stimulate discussion of some of the broad issues facing the waterway.

Context

Within the 386-km waterway, the federal government owns 3,400 hectares of land at lock stations and along canals, and more than 76,000 hectares of bed in its lakes and rivers.¹ Associated with this area are 210 provincially classified wetlands, 35 designated Species at Risk, and primary habitat for many other plant and animal species. Parks Canada issues permits for shoreline and in-water works along the waterway. An average of 500 permits has been issued annually since 1993. Parks Canada also manages the flow of water through two major watersheds, including 41 reservoir lakes in the Haliburton area where it does not own the water bed.

The waterway comprises much more than federal ownership alone. The interface between land and water is a critical element – and indicator – of its natural health. More than 4,500 km of shoreline delineate the waterway's lakes and rivers touching more than 132,000 private properties. A large and diverse biota depends upon the waterway and adjacent upland areas such as natural forests, grasslands, and other habitat types. At a regional level, the waterway interacts with other ecosystems such as the Oak Ridges Moraine and the Carden Plain. The provincially-designated Greenbelt surrounding Toronto touches the waterway along the south shores of Lakes Simcoe and Scugog.²

Other levels of government have jurisdiction on matters affecting the waterway's health, in land use and development, water quality, habitat management, fisheries management, and drinking water source protection, among others.

Issues

While some indicators suggest improving conditions along the waterway (such as the level of stewardship activity), several issues and trends identified in Parks Canada's 2005 State of the Environment³ report for the waterway pose concern for its

¹ 132,500 hectares including lakes Simcoe and Couchiching.

² See map at http://www.ourgreenbelt.ca/sites/ourgreenbelt.ca/files/images/maps/Greenbelt_map.pdf.

³ Mystic Consulting Services and Ecoplans, *State of Environmental Health, 2005*, Vol. 1 of *Indicators of Environmental Health and Long-Term Monitoring Strategy, Trent-Severn Waterway National Historic Site*, for Parks Canada, Central Ontario Field Unit.

environmental sustainability. These issues were recently presented in an informal written survey to government and environmental organizations involved in environmental management along the waterway.⁴ The 10 organizations that responded listed these issues in the following priority:

Waterfront Development and Shoreline Hardening: The upgrading of cottages to year round residences is viewed as a major issue by respondents. The cumulative effects of manicured lawns, hard surface shorelines and stabilization, septic systems designed for seasonal use, placement of sand on the waterbed, and water pollution on the near-shore (riparian) zone was seen as a critical threat to the health of the larger waterway ecosystem. Such activities can, for example, affect habitat for near-shore fish species such as walleye in terms of spawning, nursery, and feeding. Generally, while the spatial extent of impacts may be local, the temporal extent is long-term, cumulative effects are widespread, and the damage difficult to reverse.

Wetland Loss: Wetland loss – a closely related issue – continues along the waterway in spite of federal and provincial protection policies and legislation such as the federal Species at Risk Act. None of the watersheds that drain into the waterway contain the minimum 10% wetland coverage recommended in 2004 Environment Canada guidelines for Great Lakes watersheds. The 2005 SOE report indicated this condition raises concerns and suggests potentially impaired ecological health.⁵ One survey respondent highlighted the Rice Lake area as one area of particular concern.

Upland habitat loss and fragmentation: Increased development is fragmenting important habitat, and is reducing ecological connections between the waterway and important wetlands, upland forests, and grasslands. Respondents considered this trend to be of great concern where it affects species at risk, as well as recharge/discharge areas for feeder streams.

Eutrophication: Respondents regarded this phenomenon as a consequence of previous issues. It was viewed as a major issue on Lake Simcoe, and for fish habitat and recreational fishing in general. Total phosphorus levels are dropping in some lakes such as Upper Buckhorn and Chemong. In others, such as Simcoe and Couchiching, they are rising.⁶ Generally, this indicates deteriorating water quality and a loss in the waterway's amenity value through, for example, excessive plant growth. Continued waterfront development and aging infrastructure (e.g., private septic systems) will likely increase eutrophication, as will continued use of lawn fertilizers, and agricultural runoff.

Invasive Species

Exotic invasive species have expanded their range throughout the waterway and are now well established. Their effects are increasingly evident. More exotic invasive aquatic plants and animals will likely take hold in the waterway, as well as in adjacent upland areas. These trends will further stress the waterway ecosystem, including effects upon established fish species and native aquatic plants.

⁴ Panel on the Future of the Trent-Severn Waterway Secretariat, March/April 2007.

⁵ Mystic Consulting Services and Ecoplans, p. 92, vol. 1.

⁶ Ibid, p. 112-113 & Lake Simcoe Environmental Management Strategy, *State of the Lake Simcoe Watershed*, 2003, p. 4.19.

Other Issues: Other issues cited by survey respondents include the effects of climate change that could reduce the amount of water in the system as a result of lower snowfall and increased evaporation. Such trends could alter critical habitats and accelerate the spread of invasive species. Another frequently cited concern (but not identified as a key issue) was the effects of water management on wetlands, drainage, fish, and wildlife.

Challenges and Opportunities

Growth: The extent and nature of waterfront development is fueled largely by the growth of the Greater Golden Horseshoe (GGH), within which most of the waterway is situated. With a population forecast to grow to 11.6 million by 2031 (up 3.7 million from 2006), the GGH – centred by the Greater Toronto Area – is one of the fastest growing regions in North America.⁷ This growth, coupled with an influx of retiring baby boomers, will increase the demand for new waterfront development, the conversion of cottages to year-round residences, and the use of the waterway for near-urban recreation. Conversely, this growth also offers the opportunity for more awareness and stewardship of the waterway by those who benefit from the amenity value it provides.

Jurisdiction: Survey respondents identified fragmented and overlapping government jurisdictions as a key challenge to improving the waterway's health. Water levels are federally managed but the province issues permits for water taking. The province regulates land use (through municipalities) yet the regulation of in-water development is a federal responsibility. In some areas the legal and jurisdictional responsibilities between Parks Canada and the province are unclear. Gaps, overlap, and conflicts in jurisdiction have hampered effective, efficient, and integrated management of the waterway's natural environment.

Legislation and Enforcement: Legal and regulatory tools such as Parks Canada's Historic Canals Regulations are outdated and largely unenforceable for regulating infilling and shoreline hardening. Municipal planning policies for regulating waterfront development vary along the length of the waterway and in general do not contemplate its cumulative effects. A lack of staff and resources hampers the enforcement of existing regulations of all levels of government, including Parks Canada's shoreline and in-water work regulations (Rice Lake was cited as a potential area of concern), and municipal regulations. It is perhaps no surprise then that respondents identified shoreline hardening as a major and widespread issue.

Coordination and Integration: Dozens of government and non-government organizations are involved activities that contribute to the health of the waterway environment. Yet coordinating mechanisms are lacking, from site-specific permitting, to information collection and monitoring, to attending to broader issues affecting the waterway such as links with other regional ecosystems or protected areas.

Capacity: All government and non-governmental agencies have limited staff, budgets, and mandates to take on additional responsibilities, let alone manage current ones. Yet if the large number of agencies and citizen organizations concerned with the waterway's environmental health could find a way to better coordinate their activities, duplication might be reduced, efficiencies achieved, and additional capacity freed up.

⁷ Ontario. Ministry of Public Infrastructure Renewal, *Places to Grow: Growth Plan for the Greater Golden Horseshoe*, Toronto: Queen's Printer for Ontario, 2006, p. 12.

Information: While many organizations and agencies collect environmental information, the lack of an overall framework has generated gaps, overlaps, and limited knowledge of long-term trends. No common measure of the waterway's environmental health exists. Nevertheless, there is a desire to better coordinate information collection and sharing.

Education and Communication: Many of the respondents stressed that convincing landowners to choose less obtrusive and more environmental friendly actions is a large challenge, but one that is important to overcome.

Parks Canada's mandate for the waterway: Because the waterway is a National Historic Site, Parks Canada's priority is to protect and present cultural resources. As a result, natural resource management is not accorded the same priority, even though Parks Canada's jurisdiction extends over an area similar to that of a mid-sized national park.

Ideas

Formally recognize the role and value of the waterway within the Greater Golden Horseshoe: Two large natural "arms" help delineate the outer reaches of the GGH – one rock (the Niagara Escarpment), one water (the waterway). Toronto sits between them. The province's 2005 *Places to Grow Plan* protects the Escarpment and Oak Ridges Moraine (the latter extending north and east of Toronto) as part of the larger Greenbelt. The waterway is unique in being the region's only inland water-based ecosystem, and as the first navigable chain of recreational lakes and rivers north and east of Toronto. It carries no formal designation in the *Places to Grow Plan*.

Recognition in the *Places to Grow* concept could aid both the waterway's and the Greater Golden Horseshoe's long-term sustainability by:

- Promoting the setting of a common vision for the waterway to which everyone contributes
- Clarifying the waterway's values, roles, and benefits to the quality of life in the GGH
- Identifying important connections between the waterway and other regional-scale ecosystems such as "The Land Between"⁸
- Ensuring land use development occurs within the environmental and recreational capacity of the lakes and rivers comprising the waterway. Consistent, waterway-wide direction for municipal plans could aid its environmental health in the following areas:
 - Natural environment protection objectives and targets,
 - Waterfront/backshore development (including setbacks, vegetation/buffer requirements, sewage disposal, road access, etc.),⁹
 - One development review process for different types of applications (e.g., subdivisions, severances)
 - Regional ecological links and policies for species-at-risk
 - Integrated municipal/federal policies for shoreline and in-water works
 - Cultural heritage, visual, and recreation amenity.

⁸ An area of unique biodiversity in the Canadian Shield/limestone plain interface just north of the waterway extending east from Georgian Bay to east of the Kawartha Lakes.

⁹ Since 2005, Greenbelt policies have governed waterfront development along the south shores of lakes Simcoe and Scugog.

Coordinate in-water, waterfront, and backshore development permitting: While a specific approach is not suggested, the objective would be to have a single point of contact or some other effective coordination mechanism for those requiring approvals for waterfront and in-water development. Appropriate sewage system upgrades in cottage conversions would also reduce natural environment degradation. Improved permitting and enforcement capacity would also benefit the natural environment along the waterway.

Secure natural environment lands: A land securement initiative involving a partnership of government and land trusts could target key areas that require protection. Priorities might account for the level of regulatory protection and degree of threat along the waterway, as well as opportunities for maintaining and enhancing links to other regional ecosystems and protected areas.

Coordinate Data Gathering and Sharing: Establish a lead agency and organization to coordinate more comprehensive and effective information collection and monitoring of the waterway's health. This could involve the establishment of monitoring protocols and a common database for the waterway to which all agencies would contribute both data and continued funding in support of data collection.

A periodic "state of the waterway health" report would enhance awareness and promote action. Park's Canada's 2005 State of the Waterway environment report may provide a starting point. It proposed a monitoring strategy and key indicators, and identified coordination opportunities.

Educate: More widespread, coordinated, and effective public education, communications, and public outreach could build public awareness, imbue landowners and users of the waterway with the appreciation of the waterway as a unique natural environment, and help develop a culture of stewardship among waterway residents, as well as its land- and water users.