EVOLUTION OF NIAGARA ESCARPMENT GOVERNANCE

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SUMMARY
The concept of organizational ecosystems (1, 2) is used to describe the evolution of governance on the Niagara Escarpment, Ontario, Canada. Organizational ecosystems are made operational through actor system dynamics. Domains and regimes evolve through activities such as networking, learning, generating and evaluating information, setting agendas and negotiating outcomes. The Niagara Escarpment organizational ecosystem has evolved from a municipal dominated model administered through the Ontario Planning Act to a Provincial dominated model administered through the Niagara Escarpment Planning and Development Act (1973) and the Niagara Escarpment Plan (1985). These changes established core protected areas through the Niagara Escarpment Parks and Open Space System and a natural land use designation with buffer and transition zones. Recognizing these changes, the United Nations Education, Scientific and Cultural Organization designated the Niagara Escarpment a Biosphere Reserve in 1990. The Niagara Escarpment actor system continues to play an important role in the evolution of the Niagara Escarpment's organizational ecosystem. For example, the organization of the Biosphere Reserve appears to be moving toward a multi-party and community-based structure. Understanding the evolution of Niagara Escarpment governance is important as practitioners, researchers and volunteers strive to improve planning and management.

1. INTRODUCTION

The governance structure of the Niagara Escarpment, Ontario, Canada, has undergone significant change over the past 40 years. For the purposes of this paper, governance is defined as "the involvement of a wide range of institutions and actors in the production of policy outcomes including NGOs, quangos, private companies, pressure groups and social movements, as well as those state institutions traditionally regarded as formally part of government" (3). The conceptual perspective provided by organizational ecosystems (1, 2) helps to explain how domains and regimes are continually evolving through the activities of the actors within a system. Actors that understand and actively facilitate evolution of governance maximize their efficiency and are more effective at influencing the system.

The purpose of the paper is to describe the evolution of Niagara Escarpment governance and to explore links between this evolution and planning and management. Section 2 presents further information on the conceptual perspective provided by organizational ecosystems. Section 3 explores the evolution and future of Niagara Escarpment governance. Section 4 concludes with a discussion of the link between governance and planning and management.

2. GOVERNANCE AND ORGANIZATIONAL ECOSYSTEMS

Governance is recognized to involve more than just the state. Non-state players are becoming more important as coordination through networks and partnerships increases (2). The concept of organizational ecosystems provides insight into the fluid and dynamic nature of governance. The concept is made operational through "actor system dynamics" that involve:

i. A set of actors, government, private and civil society organizations, with a stake in a shared domain. A domain is a social space as perceived and defined by the actors who share it. The focus of a domain can be a geographic area, a social or economic sector, or certain kinds of problems and issues. As a social construct, a given domain may have no firm boundaries. As actors come together within a domain, their perceptions of what

should be can change. Domains arise as actors within them are made aware of their interdependence (1);

ii. The social actions and interactions that occur among the actors through networks, including learning, generating and evaluating information, setting agendas, and negotiating outcomes (1);

iii. The system of rules (laws, regulations, customs) that regulate interactions known as regimes. Regimes carry out a variety of institutional tasks: they may define regulatory codes in regard to some shared resource; agree on operating procedures for resource allocations; engage in joint collaborative projects; or develop shared understandings and agendas from which actors can then work together more closely. Regimes can exemplify generally accepted rule systems either with or without organizational capacities to foster compliance (1).

3. EVOLUTION OF THE NIAGARA ESCARPMENT ORGANIZATIONAL ECOSYSTEM

3.1 Creation of the Niagara Escarpment Domain

There was relatively little recognition of the Niagara Escarpment as a distinct landscape feature prior to the 1960s. A number of researchers (geologists, archaeologists, geographers), mainly from universities in close proximity to the Niagara Escarpment, were carrying out escarpment research. However, most planners and managers and the general public had no conception of the extent and significance of the Niagara Escarpment. In 1960, the Hamilton Field Naturalists formed a citizens committee to investigate the creation of a footpath to run along the escarpment from Queenston in the south to Tobermory in the north (4). These actions initiated a vision that would ultimately create landscape value that has led to the Niagara Escarpment domain as we understand it today. These naturalists became some of the first actors operating within this rapidly evolving domain. The direct result of their efforts is the internationally recognized Bruce Trail.

3.2 New Management and Planning Rules

Other actors soon populated the Niagara Escarpment domain (researchers, government staff, volunteers, consultants); many contributed to activities designed to develop a new regime or set of rules to oversee the management and planning of the escarpment. The existing regime involved municipal control over land use planning, delegated through the Ontario Planning Act and implemented through official plans and zoning. Other actors actively worked to maintain the status quo, including the mineral resource extraction industry and development industry, as existing rules favoured their activities. A combination of land use pressures including aggregate extraction and subdivision development, conflicts over recreation uses, the desire of the public to protect the escarpment and continuing academic work led to government intervention. “On March 10, 1967, the Honourable John Robarts, Prime Minister of Ontario, announced a wide-ranging study of the Niagara Escarpment with a view to preserving its entire length” (4).

Dr. Len Gertler of the University of Waterloo chaired the study. After extensive consultation, the Niagara Escarpment Conservation and Recreation Report (4) was released in 1969. Gertler set out three tools to protect the escarpment: complete control through land acquisition; selective control through easements, leasing, etc.; and regulatory control through land use planning. He also recommended that portions of the Niagara Escarpment be included in a single park network to protect the environment and provide recreational opportunities (4).

Recommendations were also made regarding provincial standards for mineral resource extraction including a licensing system, site development plans, performance bonds and extraction exclusion areas on the escarpment. Furthermore, a Niagara Escarpment Secretariat was proposed to coordinate implementation of his recommendations. In 1971, the government responded and increased funding for land acquisitions, developed a policy framework and statutes governing mineral resource extraction, and formed the Niagara Escarpment Inter-Ministerial Task Force to consider an overall comprehensive policy for the Escarpment. This task force recommended a provincial planning system featuring strong land-use

regulation and public ownership. In response to the task force, the government passed the Niagara Escarpment Planning and Development Act (NEPDA) in 1973. The purpose of the Act is to maintain the Niagara Escarpment as a continuous natural environment and to ensure compatible development. Objectives address protection and maintenance of the escarpment's ecology, water, and open landscape character, along with adequate public access (5).

The NEPDA also established the Niagara Escarpment Commission (NEC), a 17-member body, nine members representing the public-at-large and eight members representing the upper tier municipalities. The commission's first task was to prepare a land use plan as required by the NEPDA. The NEC released its preliminary plan proposals in 1977 resulting in considerable controversy. Revised proposals were issued in 1979, reducing the plan area by 62%. Public hearings proceeded for 26 months. The approved Niagara Escarpment Plan detailed permitted uses through seven land use designations and development control criteria. Mineral resource extraction was excluded from much of the plan area. The Niagara Escarpment Parks and Open Space System was created. A $25-million trust fund was established for use over 10 years to acquire lands in support of the parks systems and to support research and educational activities associated with the escarpment (5).

3.3 The Niagara Escarpment Biosphere Reserve

These new institutional arrangements, in place since 1985, provided the framework for developing a biosphere reserve (5). Biosphere reserves are areas of terrestrial and coastal ecosystems promoting solutions to reconcile the conservation of biodiversity with its sustainable use. They are internationally recognized by the United Nations Educational, Scientific and Cultural Organization's (UNESCO) Man and Biosphere Programme (MAB). Each biosphere reserve is intended to fulfill three basic functions, which are complementary and mutually reinforcing: a conservation function -- to contribute to the conservation of landscapes, ecosystems, species and genetic variation; a development function – to foster economic and human development which is socio-culturally and ecologically sustainable; a logistic function -- to provide support for research, monitoring, education and information exchange related to local, national and global issues of conservation and development. Biosphere reserves consist of a protected core area, buffer areas and areas of transition or cooperation where people strive for sustainability. Presently there are 425 biosphere reserves in 95 countries; 12 of these are in Canada. (6).

In 1988, the Chair of Canada MAB's Working Group on Biosphere Reserves informally raised the idea of a biosphere reserve designation with the Chair of NEC. This led to consultations with Parks Canada, Bruce Peninsula National Park and Fathom Five National Marine Park. Favourable comments were received and the Niagara Escarpment was designated a biosphere reserve in February 1990 (5).

3.4 Cut-backs, the Canadian Biosphere Reserves Association and the Ten-Year Review of the Niagara Escarpment Biosphere Reserve

Major budget and staff reductions at the provincial level after 1995 limited the ability of the Niagara Escarpment Commission to move the biosphere reserve designation forward (7). The NEC has administered the development permit system, plan amendment process and five year plan reviews; this has left little time for more progressive activities. Similarly, the national parks administration also received budget reductions and has been occupied with management planning and consultations and particular local land use issues. One bright spot has been development and implementation of the Ontario Niagara Escarpment Monitoring Program and Bruce Peninsula National Park Ecosystem Monitoring Program (5).

In 1997, representatives from the six existing biosphere reserves in Canada formed the Canadian Biosphere Reserves Association (CBRA). The Mission of CBRA is to promote biosphere reserves in Canada and to advise how biosphere reserves might fulfill UNESCO requirements. This includes fund-raising and the development of collaborative projects that have been carried out in most biosphere reserves (land use change, forest biodiversity monitoring, climate change studies, restoration and ecotourism) (5).

The ten-year review of the Niagara Escarpment Biosphere Reserve was recently carried out by CBRA on behalf of Canada MAB. The main conclusion of the reviewers was that the Niagara Escarpment merits continued membership in the World Network of biosphere reserves. Other suggestions put forth and endorsed by UNESCO included:

i. Establish community-based linkages and networks to assist with biosphere reserve management;

ii. Further develop and implement the ONE Monitoring Program;

iii. Extend application of the "transition area / zone of cooperation" concept to include related watersheds and the Upper Bruce Peninsula Ecosystem;

iv. Identify a role for the biosphere reserve in the context of "eco-tourism" and agricultural tourism activities;

v. Hire a biosphere reserve coordinator to fundraise and manage projects (5).

3.5 Environmental Non-government Organizations

The Niagara Escarpment has inspired the creation of numerous ENGOs with diverse interests. Many interact directly with government facilitating planning and management activities that have a direct influence on decision making. These organizations have had significant impact on Niagara Escarpment planning and management, from the initial efforts of the Hamilton Field Naturalists to groups like the Coalition on the Niagara Escarpment and Protect Our Water and Environmental Resources, who continue to guard the existing regime and further the work of the biosphere reserve.

4. EVOLVING GOVERNANCE AND PLANNING AND MANAGEMENT

Practitioners, researchers and volunteers who understand that governance evolves and who participate actively as part of the actor system, become well positioned to influence planning and management. Activities such as building networks, collaborating on integrative projects and producing accessible and transparent science lead to information and understanding that can change values and influence policy and decision making. Actors engaged in these activities are also more likely to be able to identify and exploit emerging opportunities. The following are three examples of opportunities seized, drawn from the Niagara Escarpment experience. The examples transcend any one organization's mandate and have contributed to the actor system's ability to deal with planning and management complexity.

Many actors involved with the Niagara Escarpment, including academic researchers and government staff, identified the need for monitoring early in the development of the Niagara Escarpment regime. The opportunity to develop monitoring presented itself when the Niagara Escarpment was designated a biosphere reserve. A number of actors came together to develop a comprehensive monitoring strategy. Although poorly funded, the ONE Monitoring Program is helping stimulate and coordinate Niagara Escarpment monitoring. Similarly, the need for enhanced information sharing and partnership development was apparent. This resulted in the creation of the Leading Edge Conference Series designed to bring policy practitioners and researchers together with decision makers. Again, the justification for the conference series was the biosphere reserve designation; the results have been impressive. Partnerships have resulted between government, non-government and private sector with initiatives proceeding on monitoring, climate change, and restoration.

Finally, recent evidence based on extensive interviews with Niagara Escarpment actors (5) points to organizational shifts designed to complement government agencies and their planning and management. Efforts to create community-based linkages and networks through the establishment of community biosphere reserve groups along the escarpment, similar to the recent creation of a Bruce Peninsula Biosphere Association, are being explored. Should this continue, it is expected that Niagara Escarpment governance will further evolve in support of the biosphere reserve approach.

5. CONCLUSIONS

The Niagara Escarpment organizational ecosystem has undergone extensive change since the 1960s. Numerous actors have joined the system and major changes to the regime or set of rules governing land use and protected area planning have emerged. Practitioners, researchers and volunteers who follow and facilitate such changes enhance their abilities to deal with complexity associated with planning and management. Future evolution of governance is likely to present new opportunities to better plan and manage the Niagara Escarpment.

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