Ecosystem Conservation Plans for Bruce Peninsula National Park and Fathom Five National Marine Park*

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Introduction

The role of Ecosystem Conservation Plans (ECPs) is to maintain the ecological integrity of national parks and surrounding areas and to strengthen planning, management and decision-making for national parks and their Greater Park Ecosystems (GPEs). In 1997 the Heritage Resources Centre at the University of Waterloo, under contract with Parks Canada, initiated a project to prepare ECPs for Bruce Peninsula National Park (BPNP) and Fathom Five National Marine Park (FFNMP) (Figure 1).

The result of this project to date (February 1998) has been the preparation of three main products. The first is a Background Information Study (BIS) which identifies and reviews the existing knowledge and research concerning the two parks and surrounding area in order to assist with consultation and planning (Lawrence et al., 1997). The second is a Synopsis of the BIS which provides a summary and interpretation of the key results and recommendations of the BIS as a basis for the preparation of the ECPs (Lawrence and Nelson, 1997). Finally, a Communication Strategy was also prepared to develop means to contact, inform and secure information from local and other concerned people within the two parks and surrounding area (Black and Nelson, 1997).

Key results include: initial selection of problems, issues and concerns (PICs) to be addressed in the ECPs and their organization into Stresses, Effects and Responses; the mapping of significant natural features and processes and Areas of Concern which are to be the focus of future planning and management; and, the identification of a wide array of approaches and contacts to be used to assist with future public involvement in ecosystem conservation planning in the two parks and surrounding area.

Study Area

Following lengthy planning and public discussion, a federal/provincial agreement was signed in 1987 to establish BPNP and FFNMP on the Bruce Peninsula and nearby waters of Georgian Bay and Lake Huron. BPNP was established to protect a representative example of the Great Lakes/St. Lawrence Lowland Region. The park is located mainly on relatively flat-lying dolomitic rocks. The steep Niagara Escarpment runs along the Georgian Bay side and dips to the more gentle Lake Huron shore. Climates, soils and geological features are associated with a very diverse range of plant and animal species as well as habitats that play host to rare species.

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FFNMP is intended to represent the Georgian Bay Marine Region. The mixing of Georgian Bay's cold waters with Lake Huron's warmer waters provides good habitat for numerous species. FFNMP also protects numerous shipwrecks within the current park area. Various animals are well-represented in both parks. A rich breeding bird population reflects the diversity of natural habitats. BPNP and FFNMP are also staging or resting areas for migratory birds.

Figure 1: The Bruce Peninsula

What is an Ecosystem Conservation Plan?

> 'An Ecosystem Conservation Plan is a dynamic document which develops and proposes specific goals for the maintenance of park ecological integrity and management of the greater park ecosystem' (Parks Canada 1992).

We see the ECPs as having several roles or purposes:

Technical: provide assessment of resources in and around parks;
Planning: provide information to assist decision-making in and around parks; and,
Cooperation: provide means of exchange of information in and around parks

What is Ecological Integrity?

> 'Maintenance of ecological integrity must be the first consideration in management planning' (National Parks Act, 1988).

Basically we see ecological integrity as the conservation and enhancement of essential natural processes and features of the two parks and surrounding area. It is also important to understand the range of resources and land use stresses that occur and may impact the significant natural or environmental features and processes.

What is the Greater Park Ecosystem?

The ECP must consider the area of natural ecosystems that occur in and around the parks. Examples include streams and watersheds that extend beyond the park boundaries. Social, political, and economic factors, which influence ecological integrity, must also be considered. Our focus to date has been on the parks and surrounding area of the northern Bruce Peninsula based in a large part on the available information. More research will be required, including inventory and organization of existing information, in order to develop a better understanding of the GPE for BPNP and FFNMP

Problems, Issues and Concerns (PICs)

> 'An ECP involves identifying natural resource problems, issues and concerns (PICs) and relating them to the park's ecosystem conservation goals and objectives' (Zorn et al., 1997).

We worked in association with Parks Canada staff, reviewed existing information, and met with other individuals, agencies and stakeholders including members of local communities to identify PICs. One of the challenges in the preparation of the ECPs is to organize and prioritize the large number of PICs that have been initially identified by Parks Canada and others (Tables 1 and 2). We are using maps to organize the PICs based on their extent in the two parks and surrounding area and on the basis of the following questions:

What are the land and resource uses?
What are the effects of these uses?
What are the responses to the effects?

Bruce Peninsula National Park

Abiotic	Land Use	• transboundary issues (i.e., pollution, changes to habitat, etc.) • oversnow vehicle corridor (presence and usage) • cumulative impacts assessment for the park • visitor use (i.e., impacts and level of resource protection required) • shorezone protection (impacts from hikers and other users) • cave management • development of partnership agreements with outside agencies to work towards conservation of important sites • Bruce Trail (visitor impacts)
Biotic	Vegetation	• study/management of existing vegetation community structure • factors affecting the decline in health of maple and white ash forests • protection of rare plant species • protection/management of alien plant species • study/protection of rare alvar communities • inventory of non-vascular plant species fire management • COSEWIC identified plant species • study of cliff edge old growth cedar forests and related vegetation communities
	Aquatic	• study/management of inland recreational fishery • aquatic management in general (i.e., angling, regulations/quotas) • quality (i.e. pollution as a result of cottage development)
	Wildlife	• COSEWIC identified species (i.e., Massasauga rattlesnake) • study/management of Northern Peninsula black bear population • study/protection of rare Southern bog lemming and associated habitat • study/protection of various wildlife species including bobcat and the re-introduced fisher • inventory/analysis of arthropod species and associated indicators of ecosystem health • white deer population management • bird studies
Cultural		• development of a cultural resource management program • protection of identified archaeological resources identification of cultural landscapes • development of intangible history database (i.e., sacred places)

Of particular importance to all of the above is the development of a Communication Strategy for the two parks. There is a definite lack of a social context to all the above. We either have to develop a specific community focused communication process or ensure that all work undertaken has a communication strategy initially identified and followed through upon.

Table 1: List of PICs for BPNP provided by Parks Canada (January 1997)

Fathom Five National Marine Park

Abiotic	Visitor Use	• visitor impacts to Flowerpot Island • accessibility of Flowerpot Island • increased boat usage and associated impacts • litter presence • land base issues (i.e., illegal camping, snowmobiling, etc. • cumulative impacts assessment • anchorage in Larondes Harbour (i.e., bottom disturbance) • geological survey of lake bed
Biotic	Fisheries	• commercial/sport fishing • loss of species diversity • introduction of alien species • assessment of lake trout re-introduction
	Birds	• colonial nesters (e.g., affects of cormorants)
	Arthropods	• undertaking of an inventory
	Vegetation	• introduction of alien species • protection of rare plant species
Cultural	Artifacts	• illegal removal of underwater and terrestrial resources • identification and protection of underwater resources • identification and protection of pre-historic resources • interpretative potential of lighthouse property
Political	Boundary	• analysis of boundary adequacy

Table 2: List of PICs for FFNMP provided by Parks Canada (January 1997)

Background Information Study (BIS)

This report provides a review and summary of existing information and knowledge on the two parks and surrounding areas (Lawrence et al., 1997). This review is based on available studies and current research. The BIS is intended to serve as a means for the identification of Problems, Issues and Concerns (PICs) to be addressed by the ECPs. The report also identifies key recommendations and actions for Parks Canada and other stakeholders to address the PICs in an effort to maintain the ecological integrity of the two parks and surrounding area. Areas of Concern are identified where land and resource stresses are impacting significant environmental features.

In order to evaluate the vast amount of information available on the large number of PICs initially identified by Parks Canada staff and the study team, the PICs were first organized into six main categories:

Communication
Recreation and Tourism
Transport and Infrastructure
Resource Uses
Environmental Conditions
Land Use Planning and Management

Using the existing Geographic Information System (GIS) database developed for BPNP and FFNMP by Parks Canada, with additional new information gathered

from a review of completed and ongoing research and consultants, a series of summary maps were prepared for each of these categories. The intention of the mapping was to relate PICs to specific locations or areas within and outside of the two parks.

The magnitude and frequency of the various resource and land uses was indicated by the preparation of a summary map locating nodes and corridors of these activities within the two parks and surrounding area (Figure 2). The resource and land uses include trails and roads, camping and cottage areas, urban and residential areas, public access and recreation areas. This mapping involved determining where the greatest magnitude and frequency of the uses occurred. The nodes and corridors were then assigned a relative preliminary rank of high, medium or low.

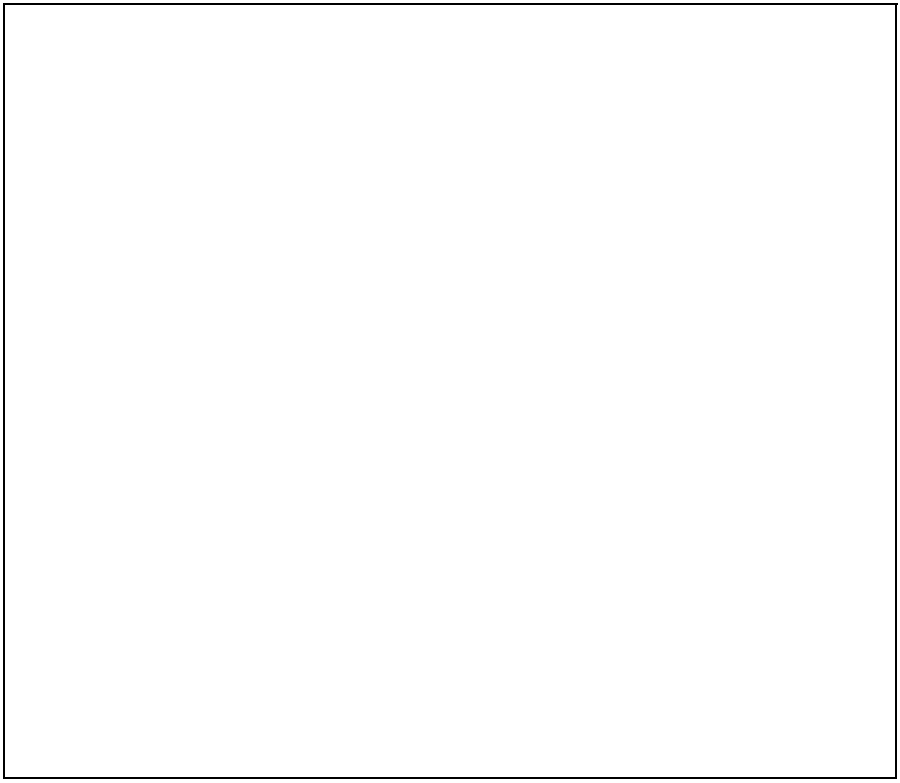

Figure 2: Nodes and Corridors of Land Resource Uses

The next step was the identification of significant environmental features that are under stress from the effects of resource and land uses such as trails, roads, cottages, logging and other human activities. Abiotic significant features consist

of geological and surface landforms that are important to ecosystem conservation and the maintenance of ecological integrity and include alvars (exposed bedrock), caves, beaches and dunes, and cliffs and talus deposits. Biotic significant features are the natural species and features that are important to ecosystem conservation such as: fish habitat, Areas of Natural and Scientific Interest (ANSIs), provincially significant wetlands, rare species (e.g., Massasauga rattlesnake), and special or specialized habitats (e.g., deeryards).

The mapping of resource and land use nodes and corridors was then overlain on the abiotic and biotic significance maps to assist in the identification of Areas of Concern (Figure 3). These Areas reflect the presence of human activities in locations where natural features important to maintaining the ecological integrity of the two parks and surrounding area are also found. An initial list of the Areas of Concern for BPNP include: Little Cove to Rocky Bay, Cyprus Lake, Dorcas Bay, Hay Bay, and Johnson's Harbour. These Areas should be a focus for future planning, management, research and decision-making by Parks Canada and other stakeholders.

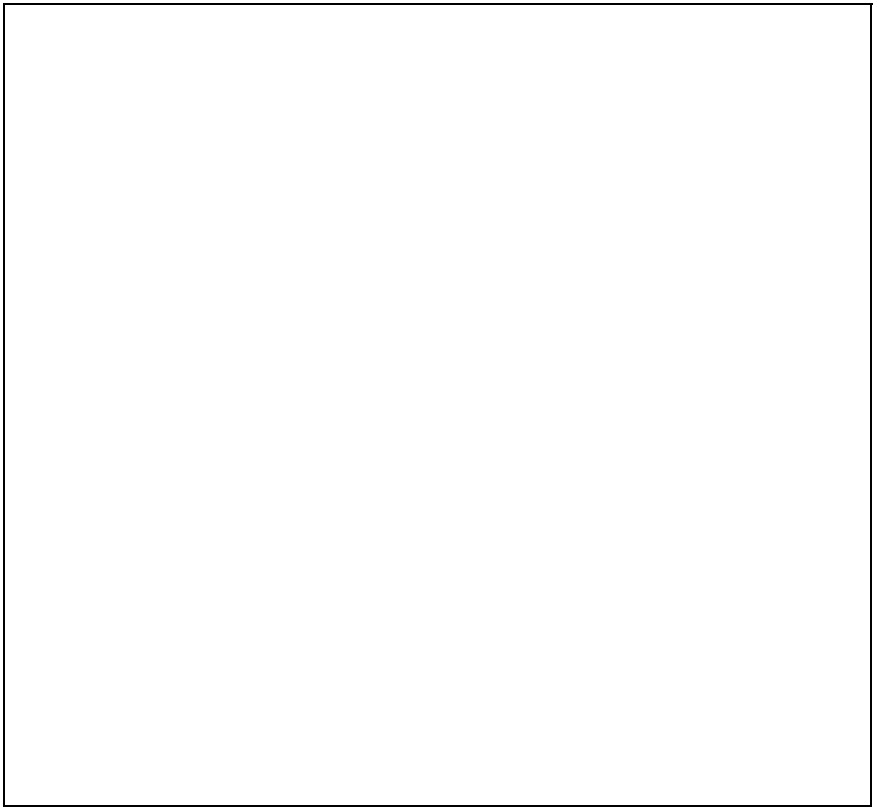

Figure 3: Areas of Concern

Communication Strategy

In order to assist with the preparation of the ECPs it was decided to examine means to contact, inform and secure information from local and other concerned people in the area surrounding the two parks. The main reasons for preparing a Communication Strategy for the ECPs are:

1. to inform people about the plans and to let them know how they can become involved in the planning process;
2. to acquire relevant information from people about the parks and the GPE; and,
3. to develop networks of groups and individuals who can become involved in ongoing planning in the future

The study team has used a wide range of approaches including meetings with the Park Advisory Committee, Public Open Houses, participation in community events and a series of interviews and informal consultations. This consultation has led to the identification of a wide range of PICs which have been organized into the six main categories used for the BIS.

The results of the Communication Strategy also have been used to assist in the identification of additional PICs that need to be addressed in the ECPs and to provide a set of fundamental recommendations for improving planning, management and decision-making. These recommendations include the need to:

- provide for a fuller and stronger role for the Parks Advisory Committee;
- make greater use of bridging arrangements to assist in the consultation with all stakeholders;
- consider the wider use of electronic approaches to improve understanding and communication efforts in regard to the PICs;
- improve interpretation programs to extend them to the wider community; and,
- assign a liaison or communications person to assist with stakeholder cooperation and bridging arrangements.

Discussion

Work continues with the integration of the results from the BIS and Communication Strategy into the preparation of the ECPs for BPNP and FFNMP. It is intended that the ECPs will identify the priority PICs to be addressed by Parks Canada and other stakeholders in an effort to maintain the ecological integrity of the two parks and surrounding area. The ECPs are intended to provide the basis for future research and other planning and management activities by Parks Canada over the next five years and to support the recommendations and actions as identified in the park management plans (Parks Canada, 1996a and 1996b). The ECPs will be completed by mid-1998 following further research and consultation by the study team and review of draft reports by Parks Canada and the Parks Advisory Committee.

Acknowledgements

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