

MANAGING THE SCATARIE ISLAND WILDERNESS AREA: INTRODUCTION TO ISSUES FOR AN ISLAND PROTECTED AREA

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Scatarie Island is a 1500 ha island off the coast of Cape Breton which contains a variety of habitats and a diversity of plants and animals. Over the last 300 years the island has seen human settlement, use by fishermen and management as a Wildlife Management Area. In 1998 the island was designated as a Wilderness Area under the Wilderness Areas Protection Act. The island's designation recognizes both its significant ecological values and wilderness recreation potential. Suitable management strategies for Scatarie Island Wilderness Area must give proper consideration to protecting those ecological values for which the island was originally designated. Current visitors to the island include all-terrain vehicle drivers and sea kayakers, both of which offer different management challenges. Climate change and possible effects of air pollution from adjacent industrial areas are other issues for the management of the protected area. In order to better understand the biota of the island and provide an adequate information base for the management of the protected area, a 4 day bioblitz consisting of 15 scientists and students was conducted in 2005. This bioblitz consisted of a biological survey in a variety of disciplines over the 4 days. More than 180 species were documented during this survey and at least 8 species had not been reported previously for Nova Scotia.

L'île Scatarie, d'une superficie de 1 500 ha, se trouve près de la côte du CapBreton. Elle renferme plusieurs types d'habitats et abrite diverses espèces végétales et animales. Au cours des trois derniers siècles, l'île a été habitée, utilisée par les pêcheurs et considérée comme une aire de gestion de la faune. En 1998, elle a été désignée réserve faunique en vertu du Wilderness Areas Protection Act. Cette désignation atteste de l'importance des atouts écologiques de l'île mais aussi de son potentiel pour les activités récréatives en pleine nature. Des stratégies de gestion adéquates doivent être mises en place pour la réserve faunique de l'île Scatarie afin de protéger les atouts écologiques qui ont valu à l'île cette désignation. L'île est actuellement fréquentée, entre autres, par des utilisateurs de véhicules tout terrain et des adeptes du kayak de mer, deux catégories d'utilisateurs qui posent des défis différents en matière de gestion. Le changement climatique et les effets éventuels de la pollution atmosphérique provenant des zones industrielles

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adjacentes posent d'autres types de problèmes pour la gestion de la zone protégée. Afin de mieux comprendre le biote de l'île et de constituer une base de renseignements adéquate pour la gestion de la zone, on a effectué, en 2005, un « bioblitz » de 4 jours regroupant 15 scientifiques et des étudiants. L'opération a pris la forme d'études biologiques dans diverses disciplines. Plus de 180 espèces ont ainsi pu être documentées, dont 8 qui n'avaient jamais été signalées auparavant en NouvelleÉcosse.

INTRODUCTION

Scatarie Island is approximately 1,500 hectares in size and lies off the eastern extreme of Cape Breton Island (Fig 1).

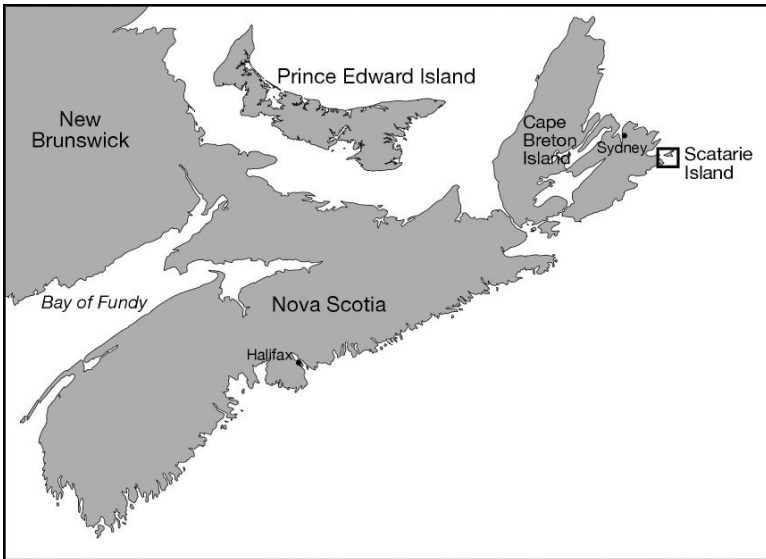


Fig 1 Location of Scatarie Island within Nova Scotia.

Exposure to harsh marine climatic conditions has combined with thin soils and a hilly, undulating terrain to create a patchwork of wetland and barren complexes interspersed with stunted coniferous forests of balsam fir and white and black spruce. A single, small freshwater lake is located on the eastern half of the island. Brackish ponds or lagoons are commonly found behind barrier beaches in many of the coves and inlets (Fig 2).

The island boasts a unique and rich diversity of plant and animal species, and the surrounding waters have historically supported lucrative fisheries. A host of coastal, marine and migratory bird species utilize the islands varied habitats and resources.

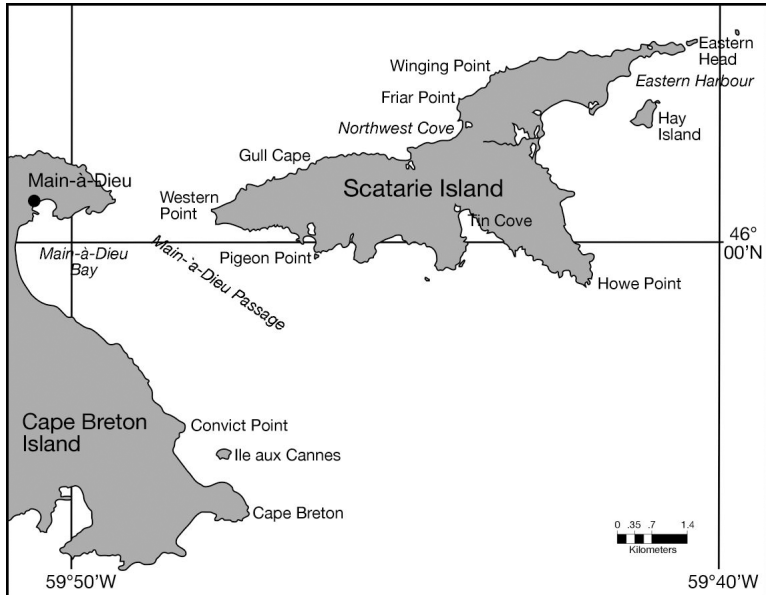


Fig 2 Scatarie Island, Nova Scotia.

RECENT HISTORY

In the early 1700's, French fishing fleets sought out the sheltered harbours and cobble beaches on the eastern end of the island to dry their catch of cod prior to exporting it to Europe. An abundance of fish soon led to the establishment of a small, permanent settlement in the area of Eastern Harbour. This community persisted until the capture and destruction of the French fortress at Louisbourg in 1758 (Chrestien 2001). Resettlement by several English and Irish families, primarily from communities in Newfoundland, soon followed the establishment of a manned lighthouse and marine life-saving stations on the island in the 1830's. Through the 19th and early 20th centuries, fishermen and their families continued to maintain homes on the island, processing their catches and often caring for a few livestock and a small vegetable garden. Although most building materials were imported from elsewhere, the local forests supplied fuel as well as wood and materials for their traps and drying racks. Diets were supplemented by ducks and other sea birds as well as seals in the spring. As the winters were long and difficult, and communities grew on nearby Cape Breton Island, settlements on Scatarie became seasonal residences. With the introduction of cold storage and centralized fish processing facilities, permanent

settlement was largely abandoned. The last permanent residents on record were the lighthouse keeper and his family. They left the island in 1987 when the light at Eastern Head was automated (The Nova Scotia Lighthouse Preservation Society 2006).

The former Nova Scotia Department of Lands and Forests introduced willow ptarmigan and arctic hare from Newfoundland in the 1970's (Godfrey 1971). Although small populations persisted on the island for some time, no confirmed sightings have been recorded since 1986. In 1976, Scatarie Island and those waters within one mile of its shoreline were designated as a provincial wildlife management area. This designation permitted hunting for deer and migratory waterfowl but all other forms of hunting and trapping were prohibited.

CURRENT STATUS

In 1998, the island classification was raised from a provincial wildlife management area to be the Scatarie Island Wilderness Area under the Wilderness Areas Protection Act administered by the Nova Scotia Department of Environment and Labour. This legislation prohibits industrial and commercial development. Disturbance to plant and animal communities is restricted to specific activities permitted under the Act such as scientific research and wilderness hiking trail development. The island's designation recognizes both its significant ecological values and wilderness recreation potential, including the following features:

- One of Nova Scotia's largest coastal islands displaying a relatively high level of ecological integrity despite past human use and settlement;
- Ecological representation of the Louisbourg Cliffs Natural Landscape;
- Large number of rare vascular plants including arctic / alpine species;
- Diversity of coastal and marine birds (breeding and / or frequent visitors) including whimbrel, Leach's storm petrel, great cormorant, common and arctic terns, ruddy turnstone and common eider;
- Home to one of Canada's rarest birds, the Bicknell's thrush;
- Provincially significant breeding colony of grey seals;
- Nesting colony of an estimated 70,000 Leach's storm petrel;

- Spectacular coastal scenic viewing opportunities combined with high-quality sea kayaking and coastal hiking / camping potential (see Godfrey 1971, White 2002, Cameron 2004, and Pronych & Wilson 1993).

BIOBLITZ 2005

Despite the status of the island and the significance of the flora and fauna found there, there has been little ecological research conducted previously. Protected Areas Branch of Nova Scotia Environment, invited 15 scientists and students in 7 disciplines to conduct inventories on the island between 8 and 11 August, 2005. Inventories took place over three days in as varied areas of study as vascular plants, fish and invertebrates. Four organizations took part: 2 universities and 2 governmental. The following papers are the results of these efforts and represent the most significant published ecological data for this remarkable island. Over 180 species have been documented during this survey and at least 8 species have not been reported previously for Nova Scotia.

The Scatarie Island bioblitz is the second of several bioblitzes conducted by the Protected Areas Branch of Nova Scotia Environment. A main objective of a bioblitz is to increase the knowledge of a little studied, protected area. The bioblitz concept provides the Protected Areas Branch with outside expertise and at the same time provides opportunities for specialists to interact. Volunteers and students participate and gain a variety of knowledge on a diverse array of species.

MANAGEMENT ISSUES

Suitable management strategies for the Scatarie Island Wilderness Area must give appropriate consideration to protecting those ecological values for which the island was originally designated. At the same time, they must recognize the importance of the islands cultural heritage and the strong community and family ties that still exist among residents of nearby towns and villages on Cape Breton Island. As an example of the latter, the fishermen of the village of Main-a-Dieu still ferry residents and visitors alike out to Northwest Cove every year for a community picnic and religious observances. These cultural links help to promote a stronger sense of community ownership or stewardship for the protected area, which in turn, can facilitate appropriate management and preservation of its resources. Even though much of the island is

owned and administered by the Province, there are six small land parcels (totalling some 17 hectares) owned by either the Federal government (2) or private individuals (4). The ownership rights of these landowners, including the right of access, must be recognized and accommodated in any management scenario.

The use of off-highway vehicles, particularly ATV's, has grown in popularity across the province, and unregulated use of these vehicles raises many questions related to their possible impacts on the island's ecosystems. During the bioblitz, several unauthorized ATV trails were noted, particularly in the area between Northwest Cove and Eastern Head. The trails were characterized by varying levels of damage to ground vegetation. In extreme cases, the vegetative cover was completely removed from the area of wheel tracks resulting in exposed humus layers, mineral soil or bedrock. The loss of vegetation from even moderate slopes of 10 percent was often accompanied by surface erosion of organic matter and finer soil particles. Concerns also exist over possible impacts to resident populations of nesting and migrating birds as well as sensitive wetlands. The situation is aggravated to some degree by the fact that active enforcement of existing restrictions on vehicle use and monitoring of compliance are severely limited by the difficulties faced in accessing the island. Fortunately, access issues are also a challenge for potential vehicle users – a possible contributing factor to the healthy state of many of those ecosystems visited during the bioblitz.

An increasing interest on the part of sea kayakers and the eco-tourism sector is leading to higher levels of human use on a limited number of suitable resting / camping sites along the coast. Consequently, the need is increasing for effective educational initiatives to raise the level of public awareness and adoption of low-impact recreational activities, as are the requirements for ongoing research and monitoring directed towards assessing actual levels of use and possible ecosystem degradation.

Scatarie Island faces many of the broader issues affecting coastal ecosystems throughout the world. Marine and coastal environments have suffered the event-specific as well as cumulative effects of pollution for many years (Niemi 2004). Indeed, lichenologists from the bioblitz have noted a significant lack of air pollution-sensitive lichens suggesting possible air pollution impacts on Scatarie's ecosystems. Of potentially greater threat to the island's ecological integrity is the current trend of global warming resulting in climatic changes. Rising air temperatures could have a significant, direct effect on the composition of terrestrial ecosystems, particularly where species are at the extreme limits of their natural ranges. For example, a

change from boreal ecosystems to more temperate ecosystems is predicted for Atlantic Canadian Parks (Suffling & Scott 2002). If such changes occur, rare arctic-alpine plants found on the island may be affected. While some native species face the possibility of being forced out by changing site conditions, non-native species may become established, possibly compromising the viability of native populations even more. Godfrey (1971) identified several species of non-native plants; given the island's history of human use, this is not surprising. Parks Canada has identified sea level rise as the greatest potential threat to Atlantic Canadian Parks (Suffling & Scott 2002). Warmer waters, combined with rising sea levels and possible changes in ocean currents, will likely affect marine ecosystems, resulting in changes to the numbers, distribution and migratory patterns of coastal and marine species. In order to assess the extent of these and the other changes that could occur, it is critical that research be undertaken to collect basic population data for existing plant and animal communities on Scatarie Island. Inventories like those conducted during the bioblitz give a better understanding of the number and species of plants at the southern extent of their known range and provide a baseline for measuring future climate change. The identification of rare or sensitive species also assists in the development of ecologically appropriate strategies for managing public use of the island for wilderness recreation and other outdoor pursuits.

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