



Heritage Resources Centre
Centre des ressources du patrimoine

Local Economies of the Long Point Area



Long Point Environmental Folio
Publication Series

Working Paper 5

Long Point Environmental Folio Publication Series
Managing Editors: J. Gordon Nelson and Patrick L. Lawrence

A study team at the Heritage Resources Centre is developing an Environmental Folio for the Long Point Biosphere to assist management agencies and local citizens in understanding the human and natural components of the ecosystem. The folio will consist of a series of maps and text that would outline current major management issues and areas of concern. A series of project publications is being prepared to accompany the folio. These reports will consist of supplementary information collected during the study. This project is supported by the Royal Canadian Geographic Society and the Social Sciences and Humanities Research Council of Canada.

LOCAL ECONOMIES OF THE LONG POINT AREA

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Publication Series**

**Managing Editors:
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ABSTRACT

The first objective of this working paper is to develop an approach for conveying economic knowledge about the Long Point area in a manner that allows it to be integrated with geologic, biologic, land use and other knowledge about the environment for the purposes of planning and resource management. The second objective is to identify areas and issues of economic concern in the Long Point area that require additional research. The method that is used in this study is a spatial and broadly ecological approach utilising the ABC resource assessment system. This system involves a series of steps. The first step requires the identification, mapping and interpretation of an array of economic aspects or issues in the area including fishing, tourism and the like. The second step requires identification of especially significant economic activities and the constraints upon them in terms of sustainability and future economic use of the area. This step is only partially completed in this report which is released for discussion, use and criticism.

The Long Point Community, Marsh Areas (including Big Creek, Long Point Crown and Company and Turkey Point) and Inner Long Point Bay were identified as having high economic significance in terms of sustainability and future use. In regards to constraints, there were no explicit conflict areas, although the Long Point, North Shore, Turkey Point, Emergent Marshes and Inner Long Point Bay were all identified as tension areas. One of the major contributions of this working paper is the identification of sectors and areas of economic activities where there is insufficient information to make informed decisions about sustainable economic use. This lack of information should be the focus of additional research efforts. Areas of research should include: a resource-user group study, a marina/boating study, a cottage use study, and an agricultural study. It is suggested that the resource-user group study should be a high priority for future research, with a potential focus being on birders, since this user group has provided significant economic opportunities in other areas.

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THE LOCAL ECONOMIES OF THE LONG POINT AREA

1.0 INTRODUCTION

A study group from the Heritage Resources Centre at the University of Waterloo has been conducting research in the Long Point area during the past two years. This research will lead to the development of an Environmental Folio for the area, which will present geologic and hydrologic (or abiotic), plant and animal (or biotic) and land use, economic, institutional and other cultural or human information on the Long Point area. This report is primarily a contribution to knowledge of the cultural or human aspects of the area and deals with local economies.

Local economic activities in the Long Point area create an important set of processes that drive land use change and planning decisions. In a small area, such as Long Point, traditional economic studies have often excluded much of the detailed information on the nature and areal distribution of economic activities. This creates the potential for decisions to be made that do not recognize the links among various economic sectors and the underlying resources that support them. This report, therefore, has two main objectives: first, to develop an approach for conveying economic knowledge about the Long Point area in a manner that allows it to be integrated with knowledge about the biological, geomorphological and institutional structures and functions within the Long Point area; and second, to identify areas and issues of economic concern in the Long Point area that require additional research.

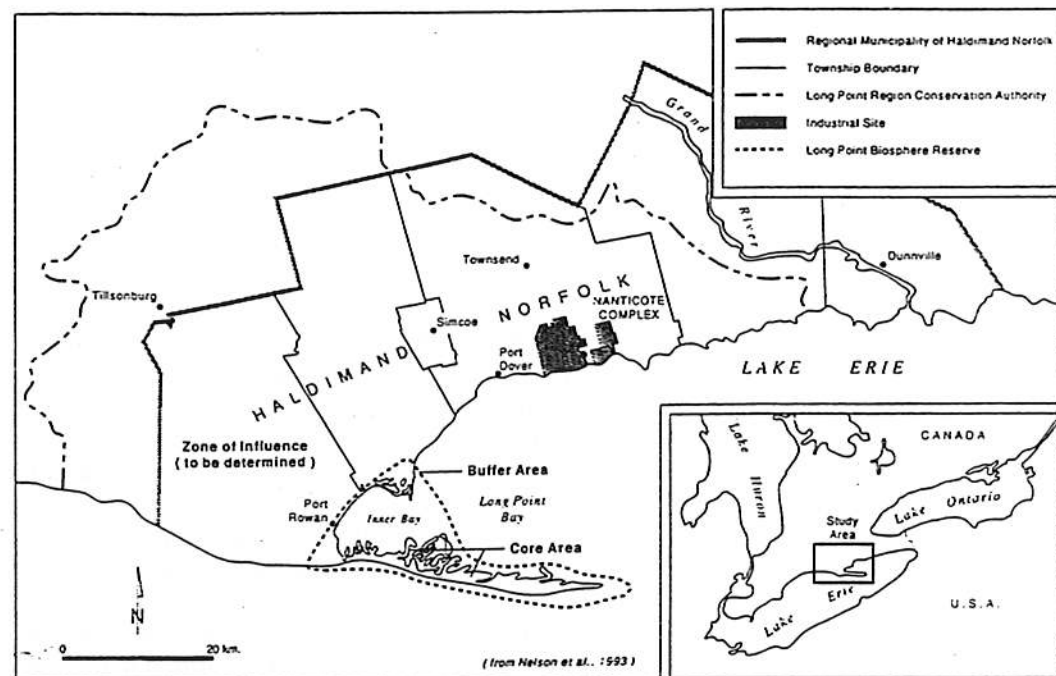
The study is based on the ABC resource assessment procedure (Nelson, Lawrence, Beazley, Stenson, Skibicki, Yeung, and Pauls 1993). Examples of past applications of this approach include research conducted in the Frenchman's Bay area along Lake Ontario (Nelson, Skibicki, Stenson and Yeung 1991), and in the Saugeen Valley Area (Nelson and Lawrence 1992). The first step in this approach involves the collection and presentation of data in theme maps. The second step involves the evaluation of this information against an established set of criteria to determine significance and constraints for planning and management. The criteria that are being used for this evaluation have been developed from principles for the sustainable use of the Long Point area. This section has only been completed in a preliminary form since data at a level that is detailed enough to construct useful indices were not yet available. The use of the terms important and significant, therefore, are only used in an indicative manner in this report.

2.0 METHODS

2.1 Study Area

The general study area for the Long Point Environmental Folio exists at two scales. The first is the core and the zone of cooperation of the Long Point Biosphere Reserve, and the second, at a broader scale, is the watershed boundary of the Long Point Conservation Authority (Figure 2.1). The core and zone of cooperation of the Long Point Biosphere will be focused upon for the purposes of this paper. Inner Long Point Bay, Long Point and Turkey Point sandspits, and nearby human communities are the primary focus of concern within the Long Point Region. A common theme expressed by participants at public work shops and meetings about the folio project, and the area in general, is the future of the ecological resources and economy of Long Point's Inner Bay and surrounding wetlands (Craig, Robinson and Langford 1993). As a result, this paper focuses upon the resources of the Long Point Biosphere, since they are of great concern for resource planning and management.

Figure 2.1 Study Area: Long Point Biosphere and Region



The study area has been subdivided into six sub-areas. Four of these sub-areas, Long Point, Port Rowan, North Shore, and Turkey Point Communities can be thought of as nodes or centers of economic activity. The remaining two can be thought of as terrestrial and aquatic hinterland areas where economic activities occur but are not concentrated (Figure 2.2). Terrestrial hinterland areas are generally comprised of two land types: natural, consisting of woodlands, stream corridors and wetlands; and, agricultural, consisting of cash crop, tobacco, market gardening and livestock operations. Aquatic hinterland areas are also comprised of two main types; first, emergent marsh at Big Creek, Long Point Crown and Company, and Turkey Point; and second, the open water of Inner Long Point Bay.

2.2 The ABC Approach and the Incorporation of Economic Aspects

The ABC resource assessment evolved out of the early work of Dorney (1976), in which he attempted to develop a conceptual approach for considering abiotic, biotic and cultural/historic components in the planning of subdivisions. Since its initial development, the ABC resource assessment method has developed into a multi-disciplinary method that recognizes three broad components of the environment and provides a method for classifying and mapping landscape features. Since the late 1970's this approach has been used in a number of studies including resource assessments in the Yukon Territory (Bastedo, Nelson and Theberge 1984) and more recently studies along the Great Lakes, e.g., Frenchman's Bay (Nelson, Skibicki, Stenson and Yeung 1991), Saugeen Valley (Lawrence and Nelson 1992), and internationally, e.g., the Segara Anakan Area of Java, Indonesia (Nelson, LeDrew, Dulbahri, Harris and Olive 1992). The current application of this approach to the Long Point Biosphere is outlined by Nelson, Lawrence, Beazley, Stenson, Skibicki, Yeung, and Pauls (1993).

When the ABC approach was developed in the late 1970's it was one of the first regional resource assessment methods that used a multi-disciplinary or "systems" approach. Since that time, the concept of considering linkages among natural resources and diverse interests and values has become more common. In this respect, Downs, Gregory and Brookes (1991) note that the terms comprehensive, integrated, ecosystem, and holistic are all, to some extent, used interchangeably to describe the same approach. In support of this observation, recent publications regarding the ABC approach have described it as both an ecosystem approach (Lawrence, Nelson, and Peach 1993), and as a comprehensive approach (Lawrence and Nelson 1993).

Initially the ABC approach was primarily concerned with the abiotic and biotic environments, with the cultural/historic component being given only cursory treatment. As the method developed, however, the cultural component became increasingly important and during recent studies a number of different approaches have been used to incorporate economic activities into the cultural part of the ABC method. The theory for incorporating economic aspects into this resource assessment method, however, is very much in a developmental stage.

2.2.1 Economics and Previous ABC Resource Assessments

The developing nature of the incorporation of economics into the ABC approach is reflected by previous ABC resource surveys. In the study of Frenchman's Bay, Ontario (Nelson *et al.* 1991), significant economic processes and functions were not explicitly considered, with economic components being implicitly dealt with through discussions about land use patterns and processes. During preparation of a shoreline management plan for the Saugeen Valley Conservation Authority, the economic-component of the ABC approach was elaborated in a more explicit way:

"Assessment of significant features is based upon review of current mapping and location of areas and sites where important economic and other human activities occur. Areas selected as significant are nodes of concentration of key cultural and economic features and processes, such as urban areas, industrial development [Bruce Nuclear Power Development] and agricultural land" (Lawrence and Nelson 1992: 36).

Figure 2.2 Study Sub-Areas Within the Long Point Area



But again, other than identifying nodes of economic concentrations, this resource assessment did not dwell upon the economic processes and functions of the local economy.

The application of the ABC resource assessment approach to the Segara Anakan region of Indonesia represents the first concerted effort to incorporate economic aspects into the cultural component of the ABC resource assessment approach. In this assessment, the economic aspects of culture in the ABC approach were presented in terms of the Anthropological and the Whole Economy Models (Harris and Nelson 1993). The Anthropological Model, which is based on Geertz's (1963) analysis of the economy of a Javanese Village, was used because it presented an opportunity for a better understanding of non-modern cultures. The Whole Economy Model was used as an approach for incorporating activities that are not currently a part of the economy even though they are a source of welfare.

2.2.2 Economics and the Long Point ABC Resource Assessment

The basic challenge of this paper was the incorporation of economic aspects into the cultural component of the ABC resource assessment of the Long Point area. In meeting this challenge, the research for this report has not adopted either the Anthropological Model or the Whole Economy Model. The Anthropological Model, lends itself primarily to the analysis of barter economies. Although there may be a well developed barter economy in the Long Point area, activities related to this economy would not be readily apparent, and time and resources were not sufficient to do the work necessary to identify and understand them. The application of the Whole Economy Model to the Long Point area may also be possible, but the usefulness of the results may be limited, especially in a strategic study like this one, where the focus is on general description and understanding of the market economy.

The approach adopted in this report, therefore, is an exploratory attempt to map, describe and interpret economic information, largely relevant to the market economy, using the ABC format, or method. As outlined in Nelson *et al.* (1993) and Grigoriew, Theberge, and Nelson (1985), the first stage (Level I) of an ABC approach involves the collection, synthesis, interpretation and mapping of available data on the abiotic, biotic and cultural forms and processes in the study area. This Level I information is presented in what are called theme maps. The second stage (Level II) involves interpreting level I data into a more meaningful form using two sets of indices, one for assessing the significance of areas, and the other for assessing constraints acting upon these areas.

The first step in completing Level I of the ABC approach from an economic perspective involved the collection and organization of economic information in the Long Point area into four general classes or themes: natural resources, cottaging/tourism/retail, agriculture and manufacturing (Figure 2.3), with the cottaging/tourism/retail sector including service activities such as marinas. It is important to note that these categories or themes are not mutually exclusive. For example, the natural resources and cottaging/tourism sectors are interrelated in a number of respects, e.g., angling activities.

The second step involved mapping this sectoral information. In previous studies, Level I mapping has involved both structural and functional or process information. These two types of information have been defined in the cultural context by Grigoriew *et al.* (1985: 22, 25) as follows:

"structural information includes features related to past and present land use, including archaeological sites, historic sites, transportation and communication facilities, settlements, land alterations such as clearings, stream diversion for a variety of purposes, and also various land use designations"

"functional information includes corridors and activity nodes which indicate spatial and temporal patterns of land use and associated cultural processes".

A specific aspect of culture, namely economic activities, is focused upon in this paper. As a result, structural and functional definitions need to be clearly defined from an economic perspective. For the

purpose of this report, **structural information** includes features related to current economic land/water uses, such as important commercial and recreational fishing sites, hunting sites, naturalist sites, cottage and trailer park communities, marinas, beaches and agricultural sites. **Functional or Process information** includes corridors and activity nodes that describe economic land/water uses distributed in space and time. Both structural and functional (processes) information can be mapped in historical and/or temporal as well as spatial terms, although no historic mapping was done for this report. As indicated in Figure 2.3, structural and functional information are the first two components outlined in each of the economic sector analyses and comprise Level I of the ABC resource assessment approach.

The evaluation and interpretation or highlighting of the foregoing level I information into a more focused form for planning is accomplished using two sets of indices, one for assessing **significance** and the other for assessing **constraints**. This comprises the second stage (Level II) of the ABC resource assessment method, one with very few precedents in the economic sphere upon which this study can build. To assess information for significance and constraints requires criteria for evaluation, which are outlined as follows.

Figure 2.3 Organizational Framework for Incorporating Economics into the ABC Resource Assessment of Long Point

ABC Analysis	Economic Analysis	Natural Resources			Cottaging/ Tourism	Agriculture	Manufacturing
		Fishing	Hunting/ Trapping	Naturalist Activities			
Level I	Structural						
	Functional						
Level II	Essential Processes						
	Productivity						
	Diversity						
	Equity						

Significance

The criteria used for assessing significance are usually based upon the goals of the study. In previous studies they have often been derived from a combination of ecological theory and human values (Grigoriew *et al.* 1985). For this study, however, one of the key objectives is to foster the sustainable use of the Long Point area's resources. Thus, the selection of criteria for assessing significance is based upon the concept of sustainability.

The concept of sustainability has been brought forward by several United Nations studies highlighting the need to achieve a balance between development and conservation (IUCN 1980; World Commission on Environment and Development 1987). In these studies, a set of principles was developed that explain and support the sustainability concept. These principles include the need to protect biological diversity, preserve essential processes, maintain productivity, and to provide for equitable access to resources for present and future generations (Nelson *et al.* 1993).

In completing the economic analysis of this ABC resource assessment, it is necessary to think of the above principles in an economic context. Specifically, the foregoing principles can be conceptualized and defined in economic terms as follows:

Maintenance of essential economic processes: activities that have brought income or capital into the Long Point area. For example, the continued use of the Long Point area by tourists and cottagers can be thought of as an essential economic process.

Maintenance of economic productivity: the amount of income or capital being brought into the area, the amount of a resource that is being harvested, or the number of employers / employees that the Long Point area supports.

Protection of economic diversity: the protection of economic diversity within and among each of the sectors can be thought of in two ways: first, from the perspective of the diversity of business operations, user groups and land uses, and second from a spatial perspective of the diversity of locations within the Long Point area where that particular economic activity occurs.

Provision of equity: refers to equal access to economic well-being for present and future generations. The development of the operational meaning of this concept and its application is very difficult for a study of this strategic type. It has therefore been used only in a general way, mainly with reference to loss of access to essential resources or the environmental need for an economic activity.

Two other criteria that have been used for assessing significance are rarity and representativeness. These two criteria do not easily lend themselves to an economic analysis and thus are not addressed in detail here.

In order to organize the information so that it may eventually be mapped, each of the study sub-areas within the Long Point study area has been value rated based on contribution to these criteria, with values of high, medium or low importance being assigned. To aid in this rating, the information collected during the first stage of the ABC resource assessment has been organized according to the above mentioned principles (Figure 2.3).

From a theoretical standpoint, the above approach has conceptual ties with the literature dealing with bioregionalism. Specifically, Sale's (1985) view of the economy in terms of a bioregional paradigm advocates conservation, stability, self-sufficiency, and co-operation. These components are generally conceptually similar to the four criteria of level II of the ABC/economic analysis as used in this study.

Constraints

Criteria for comparing constraints are derived from practical management considerations. Constraint maps are usually formulated using a spectrum of land use or resource use compatible-conflict-tension zones. These three zones were defined by Grigoriev *et al.* (1985: 32) as follows:

"compatible zones, the various land uses generally do not conflict with one another because no significant changes are occurring in criteria such as policy, technology, spatial extent, population growth or others, or because these changes have occurred but have stabilized"

"conflict zones, changes significant for the environmental quality of the area are occurring and the relationships between uses and the environment are likewise changing"

"tension zones represent an intermediate degree of change and conflict".

To operationalize this compatibility - tension - constraint continuum for the Long Point study, a simplifying assumption was made that the majority of the economic constraints would occur as a result of conflicts between different sectors or user groups, e.g., between anglers and recreational boaters. The evaluation procedure then involved assessing each sector against the other sectors for each of the study areas to determine the level of constraint.

The foregoing economic analysis is somewhat unique in a number of ways. A traditional study of a regional economy would generally focus on such things as the size and rate of growth of regional gross domestic product (GDP), employment, enterprises, available labour, population, and similar factors

associated with the view of a market or conventional economy. Although the economic analysis that is conducted in this paper addressed these aspects, it does not follow the same framework for two reasons. First, at a sub-regional scale, such as the Long Point study area, the data are not as readily available to complete such an analysis. And second, one of the main objectives of this report is to develop an approach for conveying economic knowledge about the Long Point area in a manner that allows it to be integrated with knowledge about the biological, geomorphological and institutional structures and functions within the Long Point area for the purposes of planning and resource management. This integration is built upon a spatial and broadly ecological approach that is not readily done in a standard economic study; this being one basic reason for the utilisation of the ABC approach. In other words, a standard economic approach leaves out much of the detailed information on the nature and distribution of economic activities, especially in smaller regions or local areas such as Long Point.

2.3 Information Collection in the Long Point Area

The collection of data for this report has followed a two-stage process. The first stage involved re-contacting various agencies that were dealt with during research for the report on the historical economies of the Long Point Area (Wilcox 1993), i.e., the Haldimand-Norfolk Regional Municipality, Ministry of Natural Resources, Long Point Bird Observatory, and so forth, and obtaining any additional available information. In general, the economic information that is currently available for the Long Point area is based on census data with the lowest level of readily available detail being the township unit, e.g., Norfolk. This is too "coarse" a scale to be useful for resource planning and management in a smaller, local area like the Long Point Biosphere. Thus, the second stage involved conducting a local business survey in the summer of 1993 to address some information gaps and obtain a better understanding of the economy and in particular tourism, primarily because of its rapid growth in Inner Long Point Bay.

The survey focused on the length and period of the operating season and the user groups that were present during these periods. Before administering the survey, it was reviewed by the study director Dr. Gordon Nelson, two external reviewers, Dr. Sally Learner and Dr. Bruce Mitchell of the University of Waterloo, and approved by the University of Waterloo's office of research. The area that was surveyed consisted of four study sub-areas: the Long Point community, Port Rowan, the north shore of Inner Long Point Bay, and Turkey Point (Figure 2.2). The survey method involved visiting the local businesses and asking their cooperation in completing the survey. If necessary a visit was made the following day to retrieve the survey. This approach was chosen over a mail-out survey because of expectations that it would yield a higher return rate.

The survey of the local businesses in the Long Point area was conducted during the last week of July and the first week of August, 1993. A total of 55 businesses were visited with 42 surveys being completed. The survey results were entered into a database and analyzed using the Statistical Package for the Social Sciences (SPSS). The data that was obtained allowed for a number of graphs to be developed for the entire area (n = 42) and for the four study sub-areas: Long Point (n = 14), Port Rowan (n = 10), North Shore (n = 5) and Turkey Point (n = 13). These graphs include:

- Primary focus of businesses
- Importance of User Groups during the entire Year
- Importance of User Groups during the Spring
- Importance of User Groups during the Summer
- Importance of User Groups during the Fall
- Length of operating season
- Number of people employed

Some limitations exist in regards to the survey. Firstly, it assumes that the business owner can identify the "nature" of his/her customers, i.e., the type of user group, and categorize them according to the various user groups that were outlined in the business survey. Secondly, the survey was developed so that it could be applied to the entire Long Point area as defined in this paper. In some situations this resulted in difficulties due to the heterogeneous nature of businesses in various study sub-areas.

3.0 ECONOMIC ACTIVITIES WITHIN THE LONG POINT AREA

This section provides a sectoral analysis of economic activities in the Long Point area, using the ABC resource assessment method. To complete this analysis, economic activities in the Long Point study area have been organized into four general sectors: natural resources, cottaging/tourism/retail, agriculture, and manufacturing. These sectors have not been organized in any order of importance and thus the use of the terms important and significant are only used in a tentative manner. As outlined in Figure 2.3, the first two components of each of the sectoral analyses involve structural and functional or process information (Level I of the ABC method), while the other components involve factors relevant to significance such as essential processes, productivity, diversity and equity (see section 2.2.2 for operational definitions). These last four components enable Level II of the ABC method to be completed. This general framework is followed for each of the sectors, except in situations where information is unavailable.

3.1 Natural Resource Use

In the Long Point area, natural resource use can be subdivided into five sectors: fishing (sport and commercial), waterfowl hunting, naturalist activities, extractive industries and forestry. This paper focuses on the first three sectors, and does not discuss extractive industries and forestry in a detailed manner because they are perceived as having relatively little effect on the core of the Long Point area (Wilcox 1993).

Extractive industries in the core and zone of influence or region of Long Point consist of activities associated with three major minerals: gypsum, natural gas, and aggregates (sand, gravel and stone). As outlined in Wilcox (1993), gypsum mines are located at the extreme edge of the Long Point Project study area (Hagersville and Caledonia), and do not have a large affect upon the economy of the immediate Long Point area. With respect to natural gas, although the Haldimand-Norfolk area has large reserves and produces significant quantities (Stenson 1993; Wilcox 1993) the majority of the proceeds from the extracted gas leave the local area and do not directly affect the local economy. Likewise, the aggregate industry is not predominate in the Long Point core area, with the closest "pits" being in the Delhi area.

With respect to forestry, the only sawmill in the local area is a small operation located near Forestville. Although a number of landowners in the Long Point area may be practicing forestry in their woodlots, it is difficult to determine the economic significance of these activities since the wood may be used by the landowner, or transported out of the area. The other component of forestry that is significant in the Long Point study area in terms of employment is the St Williams Forestry Station. Although it is located at the edge of the core study area a number of residents in the Long Point area work at this location.

For the three natural resource sectors that are being addressed in-detail: fishing, waterfowl hunting, and naturalist activities, data from the local business survey can be used to outline perceived importance of these activities to local businesses. This information is organized according to user group importance for the entire year and for the spring, summer and fall seasons (Figure 3.1). In addition, data from the survey also outlines the perceived importance of these natural resource sectors relative to the four study sub-areas in the Long Point study area. This information will be drawn upon as required.

3.1.1 Fisheries

The Inner Long Point Bay fishery is an important component of the Long Point area economy. The extensive sport and commercial fisheries both directly contribute to the economy, with the sport fishery also indirectly affecting the economy through the cottaging sector. For example, one of the amenities of owning a cottage in the Long Point area is the sport fishery. The following sections outline

the economic importance of both the sport and commercial fishery. For a detailed outline of the fisheries of Lake Erie, past and present, see Craig (1994).

Sport Fishery

Structural

The summer sport fishery of Inner Long Point Bay has expanded considerably since the Second World War. Long Point Bay is one of the few areas on Lake Erie that is suitable for a small-boat recreational fishery and as such, the Ministry of Natural Resources (1976) indicated that it has the potential for 383,000 angler-days per year, 318,000 in the Inner and 65,000 in the Outer Bay. More recently, Sztramko (1991; 1992) indicated that 35 and 42 percent of the angling effort for Lake Erie in 1990 and 1991 was concentrated in Long Point waters. In addition, there is a summer fishery for Salmonoids and Walleye (scientific names are present in Appendix 1) in the deep water of, and to the west and east of, the Long Point tip, which is serviced by marinas in Inner Long Point Bay, and at Turkey Point. Sport fishing occurs throughout Inner Long Point Bay (Figure 3.2), with Northern Pike and Largemouth Bass often being caught in the weed beds along the emergent marshes, and Smallmouth Bass being caught in the channel and along sandbars. When winter conditions result in Inner Long Point Bay being ice covered, ice fishing occurs along the entire north shore and in the channels. Yellow Perch and Crappie are the primary species caught with some Northern Pike also being taken.

Functional

As outlined in Wilcox (1993), before the turn of the century there appears to have been very little recreational fishing in Inner Long Point Bay. Whillans (1979) discovered references indicating that in 1916 fewer than 100 summer anglers were on the bay daily, with 50 to 200 fish per rod being regular catch estimates. Ice fishing at that time attracted no more than 12 people per day. By 1930, summer recreational fishing had intensified with upwards of 900 people fishing in Inner Long Point Bay during a busy day. The summer sport fishery expanded considerably after the Second World War. By the late 1950's about 7000 anglers could be seen on Inner Long Point Bay when bass season opened (Whillans 1979). Ice fishing also increased considerably in the late 1950's when commercial huts became available, with between 500 and 1000 people fishing on a normal weekend (Whillans, 1979).

Essential Processes

More recently, the data from the local business survey of the Long Point area suggest that local business owners perceive the sport fishery as being fourth in importance behind cottagers, local residents and campers for business during the entire year and third in importance behind local residents and cottagers during the spring and fall seasons (Figure 3.1). In certain areas, however, such as on the Long Point sandspit and along the North shore of Inner Long Point Bay, the sport fishery is perceived as being more important (Figure 3.3). Along the North Shore of Inner Long Point Bay, anglers are perceived as being the most important user group. While on the Long Point sandspit, anglers are identified as third in overall importance to business during the entire year, but are most often ranked as being the most important user group. Annual fishing effort declined sharply from 1978 to 1991 and rose by about 50% in 1992 (Figure 3.4).

Productivity/Diversity/Equity

The economic impact of anglers can be calculated by dividing the number of angler hours by the number of angler days. In general, it is assumed that a typical angler day is 4.7 to 5.0 hours long. The number of angler days is then multiplied by an assumed expenditure of \$25.00 per day to determine the economic impact of anglers in the area (Stramko Pers. Comm.). Using this method, in 1992 the estimated expenditure by anglers using the Inner Bay was \$844,927. This value excludes expenditures on boats/equipment and the like. A more general estimate for the entire Long Point area was provided by Meleski (1972), with the value being estimated at approximately 3.7 million dollars.

Figure 3.1 User Groups Providing the Greatest Percentage of Business During Various Periods of the Year

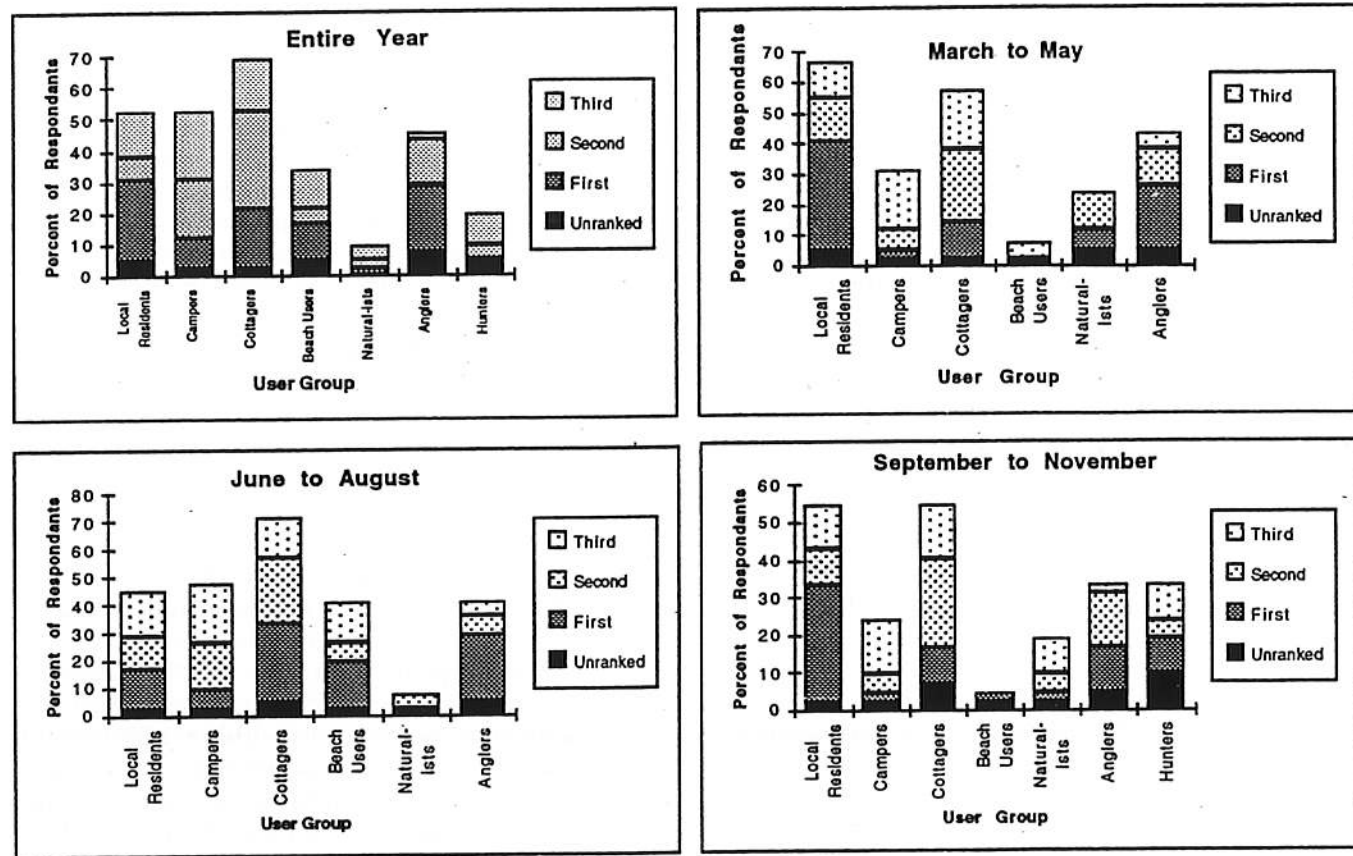
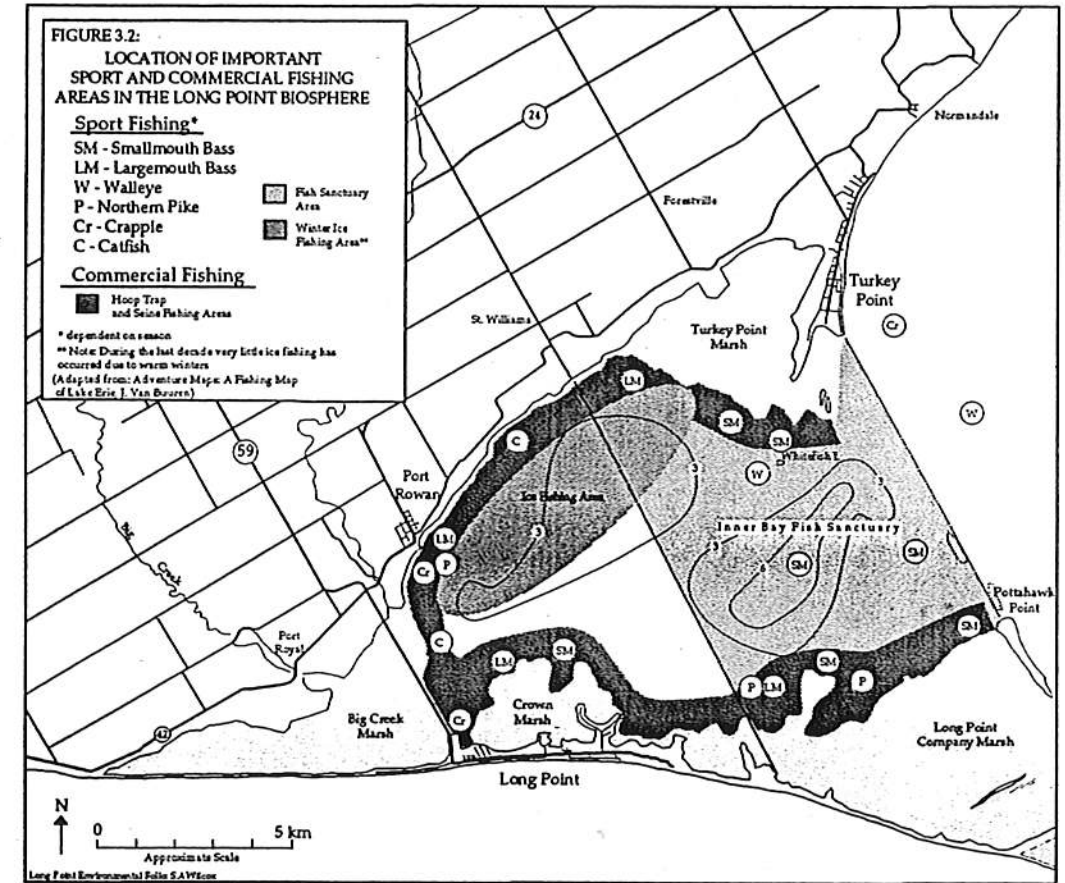


Figure 3.2 Location of Important Sport and Commercial Fishing Areas in the Long Point Area (adapted from Adventure Maps: A Fishing Map of Lake Erie, J. Van Buuren)



Craig (1994) indicated that largemouth bass, smallmouth bass and yellow perch catch success rates have generally improved from 1980 to 1992, while northern pike and rock bass catch success rates have remained generally steady. The recent increase in Smallmouth Bass may be attributed to the 1984 re-establishment of a fishing sanctuary during the spawning season (Figure 3.2). Sztramko (1985) indicated that although angling for Smallmouth Bass had been prohibited in various areas and time periods since 1950, the elimination of the sanctuary from 1968 to 1984 resulted in a noticeable decline in angler success rate.

Commercial Fishery
 Structural/Functional

Inner Long Point Bay has an active commercial fishery with 19 licenses being held to operate hoop traps and seine nets during the early spring and fall (Howe 1993). The license area surrounds the Inner Long Point Bay (Figure 3.2). Craig (1994) indicated that this fishery has operated in Inner Long Point Bay for at least 120 years. Whillans (1979) indicated that seine operations peaked between 1896 and 1905, with 15 to 17 seines being licensed in 1894, and 27 in 1906.

Figure 3.3 User Groups Providing the Greatest Percentage of Business Along the North Shore of Inner Long Point Bay and on the Long Point Sandspit

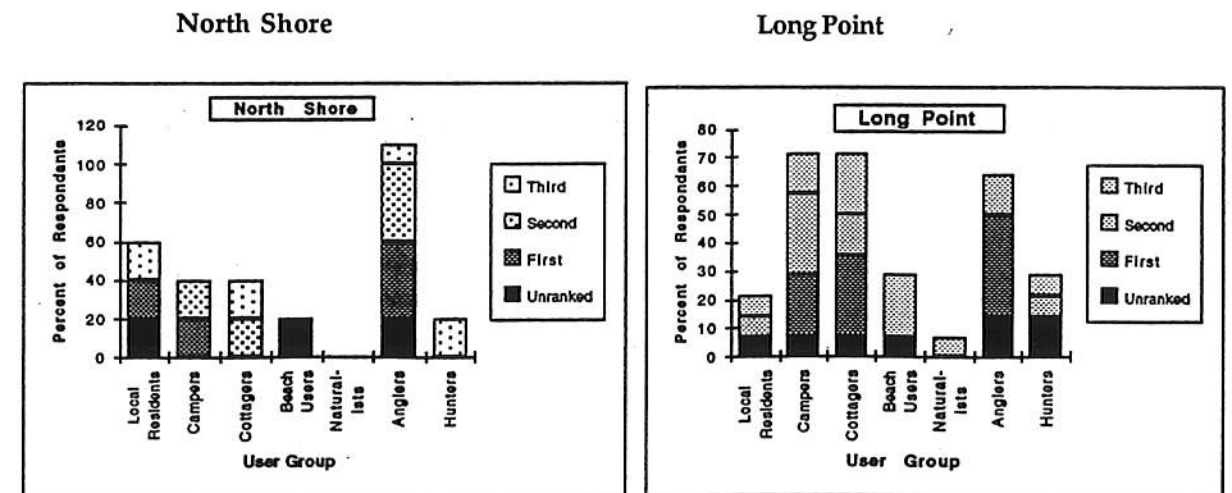


Figure 3.4 Annual Fishing Effort in Inner Long Point Bay

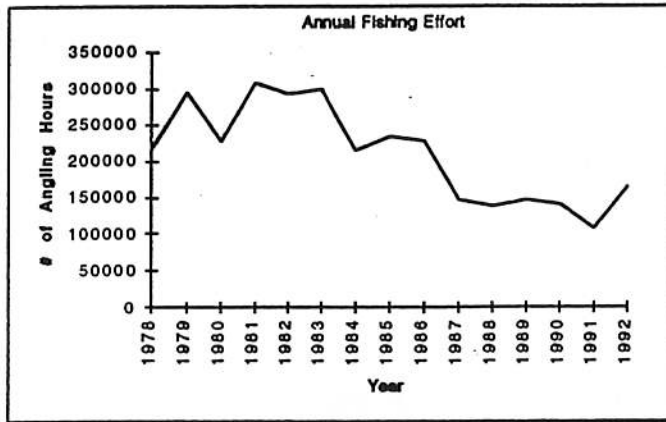
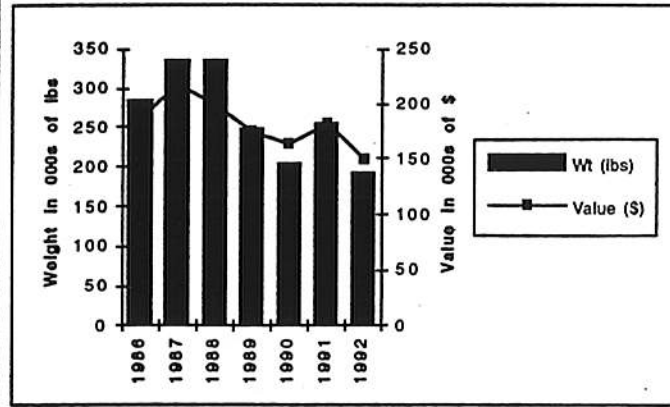


Figure 3.5 Weight and Value of Commercial Fish Catch from 1986 to 1992



Source: Ministry of Natural Resources, Pers. Comm.

Source: Howe 1993

Table 3.1 Species Harvested by Commercial Fishermen in Inner Long Point Bay in Order of Importance by Average Value and Average Weight from 1986 to 1992

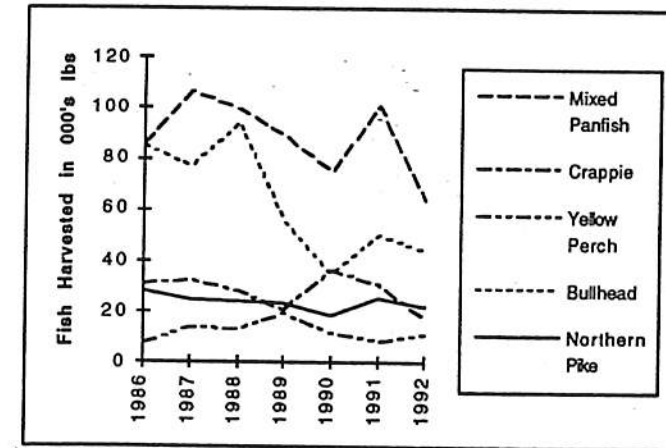
In order of Importance by Value		In order of Importance by Weight	
Mixed Panfish	56415	Mixed Panfish	88699
Crappie	40430	Bullhead	63035
Bullhead	20838	Crappie	28341
Yellow Perch	21018	Bowfin (Dogfish)	20374
Northern Pike	18771	Northern Pike	19963
Bowfin (Dogfish)	7204	Sheepshead	11687
Catfish	2028	Yellow Perch	11102
Sheepshead	1790	Carp	10793
Carp	1500	Catfish	3160
Rockbass	1230	Rockbass	1230
Eel	418	Quillback	1282
White Perch	349	Suckers	915
Quillback	318	White Perch	754
Suckers	129	Eel	573
Turtles	82	Turtles	139
Mudpuppy	56	Mudpuppy	127

(adapted from Howe, 1993)

Essential Processes/Productivity/Diversity

Currently, commercial fishermen are permitted to fish 16 hoop nets and/or 400 yards of seine net per license (Craig 1994). Figure 3.5 outlines the weight and value of the commercial fishery catch from 1986 to 1992, while Table 3.1 outlines species harvested in order of average value and average weight from 1986 to 1992. Figure 3.6 outlines trends in total weights harvested over the last five years for the five most important species and groups of fish. Caution must be exercised when considering these trends, however, since the levels of fish harvested is directly related to the level of effort exerted by commercial fishermen, which in turn is externally influenced by such factors as price changes and/or weather conditions. Craig (1994: 26) indicated that about eighty percent of the total harvest is sold on the live market. "Bowfin, bullhead, carp, suckers, pumpkinseed, bluegill and sometimes black crappie, rock bass and yellow perch are transported live to pay-per-fish ponds in Michigan, Ohio, Indiana, Virginia and Kentucky States, with the remaining 20 percent being sold to local fish processors or American fish wholesalers". As indicated in Figure 3.5, the value of the Inner Long Point Bay commercial fishery has fluctuated during the last 7 years from \$149,000 to \$217,000 (Howe 1993). This fishery, however, pales in comparison to the total annual commercial fish harvest landed in Norfolk county. For example, in 1988 the hoop and seine net fishery contributed less than 1.7 percent of the Norfolk total (Craig 1994). From Table 3.1 it is readily apparent that the majority of the value from the Inner Long Point Bay commercial fishery is derived from one group and four species of fish: Mixed Panfish, Crappie, Bullhead, Yellow Perch and Northern Pike.

Figure 3.6 Trends in Weights of Important Commercial Fish Species Harvested from 1986 to 1992



(adapted from Howe 1993)

3.1.2 Waterfowl Hunting

Structural/Functional

Since the mid 1800's the Long Point area has been renowned as one of the better waterfowl hunting locations in southwestern Ontario. Although some deer hunting has occurred on the Long Point Peninsula, by far the majority of the hunting is for waterfowl. Concern for the quality of waterfowl hunting at Long Point prompted a group of individuals to form the Long Point Company, which bought the majority of the Point in 1866 and controlled the lands in its possession as a private hunting area. Since that time, a number of other groups and organizations have gained control of marsh property in the Long Point Biosphere area and maintain it for private hunting clubs. In addition to the private hunting clubs, a number of areas are open to the public for hunting. Most significant of these areas is the Long Point Waterfowl Management Unit Crown Marsh, with others including the Big Creek Marsh, Lee Brown Marsh and the Hahn Marsh. The current locations of waterfowl hunt clubs and hunting areas in the Long Point Biosphere are outlined in Figure 3.7.

Essential Processes

The Long Point Waterfowl Management Unit is jointly operated by the Ministry of Natural Resources and the Ontario Federation of Anglers and Hunters. They maintain a number of blinds in the marsh and during the last 14 years have accommodated from 2458 to 3810 hunters, with an average of 3015 annually (Wilcox 1993). The results from the local economic business survey suggests that hunters, as a user group, are perceived as being sixth in importance as a major source of business during the entire year for the entire Long Point area (Figure 3.1). The survey suggest that cottagers, local residents, campers and anglers provide greater percentages of business. From September until the end of November, hunters are considered to be third in importance behind local residents and cottagers as providers of the greatest percentage of business.

Productivity

Information regarding the economic importance of waterfowl hunting in the Long Point Area is limited. Kreutzweiser (1979) included hunters with anglers, bird watchers and other wetland users to determine the recreation significance of Long Point's marshes. He determined that these uses derived recreational value from the Long Point marsh in excess of \$122,000 and spent \$76,000 in the local area on gas, food, lodging and other items. A more up-to-date estimate of the economic importance of only hunters can be determined using the sport fishing estimation method and the number of hunters who visit the Long Point Waterfowl Management unit. If we assume that each hunter spends a "hunting-day" in the Long Point area and multiply the number of hunting-days by the same expenditure that is assumed for angling days, an estimate of \$75,375 spent during 1992 can be determined for hunters visiting the Crown Marsh.

Diversity

Mallards appear to be the species of duck most often harvested by waterfowl hunters at the Long Point Crown marsh, with the average number harvested annually from 1986 to 1992 being 2007 (Table 3.2). Other species that are often harvested include Green-winged Teal, American Widgeon, American Black Duck and Ring-necked Duck (Note: the Ministry of Natural Resources has set a bag limit of one American Black Duck per hunter per day). During this time period the numbers of ducks harvested has remained relatively constant (Figure 3.8).

Trapping

In the Long Point area, the majority of animals harvested are muskrats, with occasional mink and raccoons being taken. Numbers of muskrats harvested during the last 20 years are illustrated in Figure 3.9, with the fluctuations in numbers of muskrats harvested being readily apparent. These fluctuations may be due to a number of factors: the amount of trapping effort; water levels in the marsh; severity of past winters, and the like. As a result, trapping has probably never been a major source of income in the Long Point area due to its seasonal nature and lack of consistency. The Ministry of Natural Resources

(pers. comm. 1993) indicate that traplines are present in the Crown Marsh as well as Big Creek Marsh, and suggest that agreements between trappers and a number of hunt clubs in the Long Point area were also reached.

The fur industry has experienced a severe downturn in prices during the last five years, with muskrat pelt prices dropping from averages of \$6.00 to \$7.00 each in 1984-85 to \$1.00 - \$2.00 a piece in recent years. As a result the number of trappers during the last few years has shown a steady decrease (Figure 3.10) from numbers ranging between 20 to 30 individuals in the 1970's and early 1980's, to a total of 13 individuals in 1992-93. At current harvest levels and market prices trapping probably brings no more than \$10,000 annually into the Long Point area economy.

Figure 3.7 Location of Waterfowl Hunt Clubs and Hunting Areas in the Long Point Biosphere

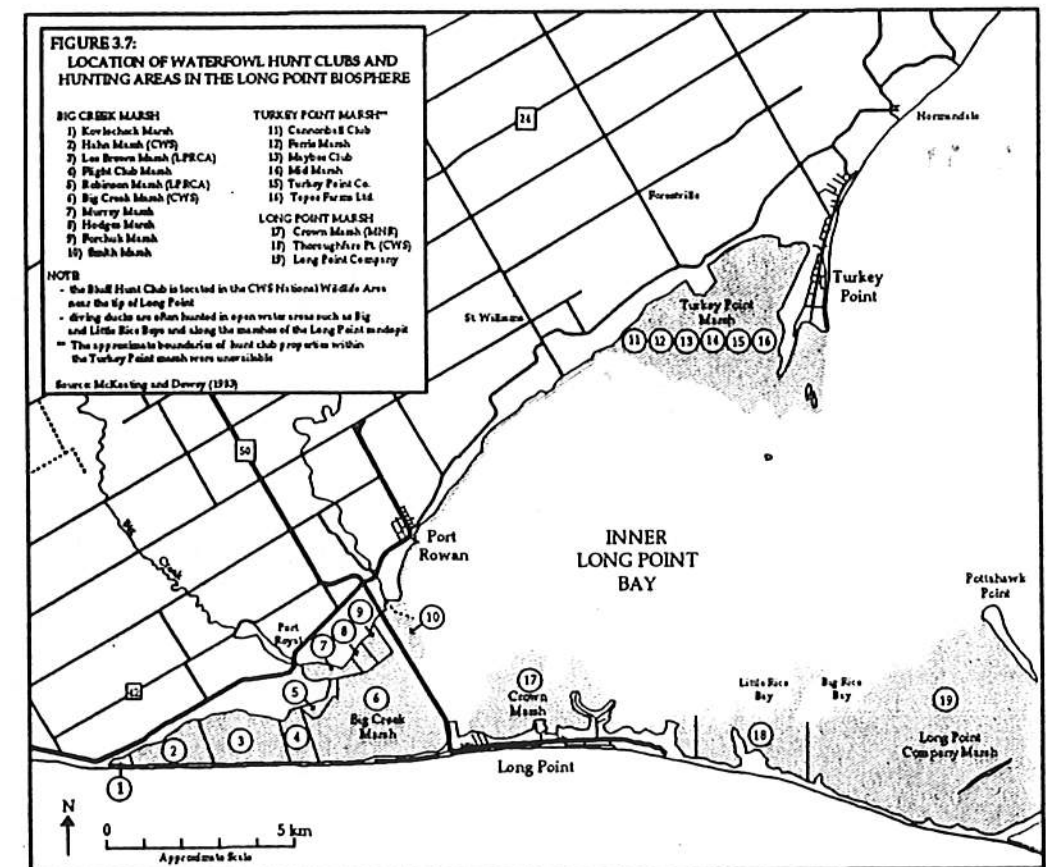


Table 3.2 Species of Ducks Harvested by Waterfowl Hunters at the Long Point Crown Marsh in Order of Average Abundance, 1986 to 1992

Species of waterfowl	Avg. # Harvested
Mallard	2007
Green-winged Teal	539
American Widgeon	537
American Black Duck	298
Ring-necked Duck	196
Canvasback	165
Redhead Duck	139
Gadwall	123
Lesser Scaup	97
Northern Pintail	92

Source: Ministry of Natural Resources Pers. Comm.

Figure 3.8 Trends in Numbers of the Five Most Commonly Harvested Ducks in Long Point Crown Marsh 1986 to 1992

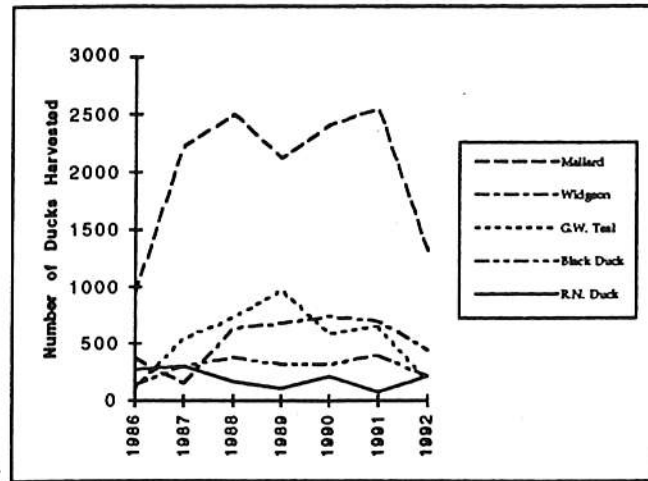


Figure 3.9 Number of Muskrats Harvested in Long Point Marshes, 1973 to 1993

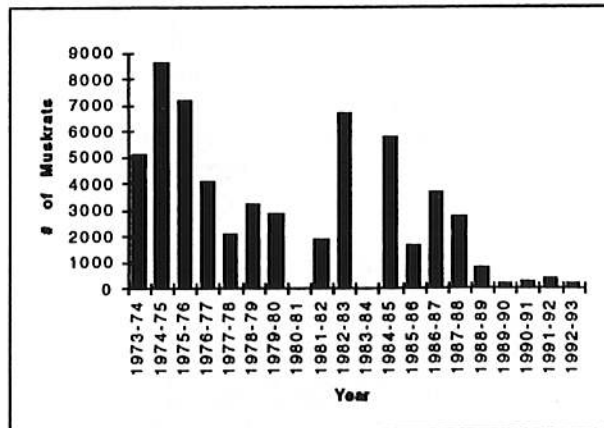
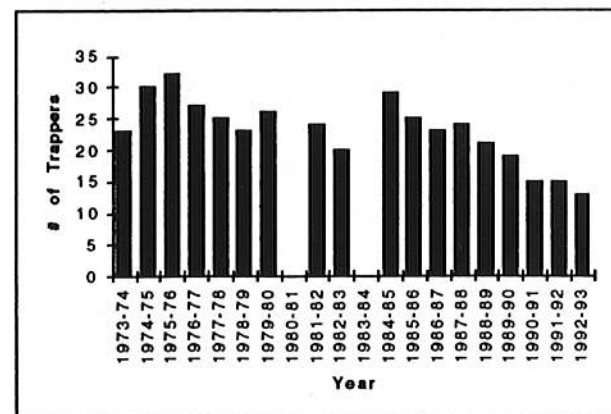


Figure 3.10 Number of Trappers Harvesting Muskrats in Long Point Marshes, 1973 to 1993



Source: Ministry of Natural Resources Pers. Comm. 1993 (Data was unavailable for 1980 to 1981 and 1983 to 1984)

3.1.3 Naturalist Activities

Structural/Functional

The Long Point area is internationally renowned as an area for nature viewing and natural history excursions, with activities including birding, botany, and the viewing of butterflies, amphibians and reptiles. Significant nature viewing areas are spread throughout the Long Point area (Figure 3.11). Of these areas, some, such as the Long Point Bird Observatory (LPBO) Old Cut field station, Wilson/Coppens Tract, Backus Woods, and Spooky Hollow are more frequently visited than others.

In the Long Point area, the spring waterfowl and songbird migration and the fall waterfowl, hawk and songbird migration are of particular importance. During these time periods there are a number of nodes and corridors where birds concentrate, and as a result, are important for nature viewers visiting the Long Point Area (Figure 3.11). Most significant of these nodes for nature viewing is the Old Cut field station, and the Wilson/Coppens Tract.

Essential Processes

The number of naturalists that visit Long Point during the entire year is only roughly estimated. During the past four years volunteers at the LPBO Old Cut field station have estimated the number of people that have visited their facilities and moved through the adjacent woodlot looking for migrating birds. The estimated number of visitors are as follows:

- 1989 - 2000
- 1990 - 4416
- 1991 - 3560
- 1992 - 3550

(Long Point Bird Observatory Pers. Comm.)

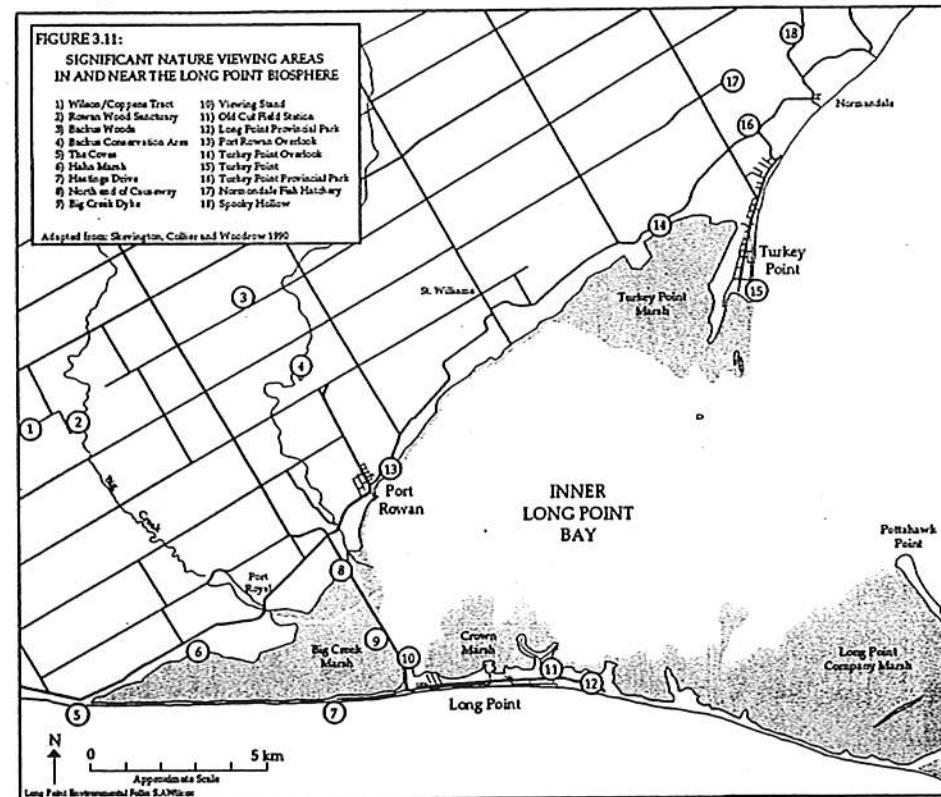
In addition to individuals traveling to the area to undertake naturalistic activities, a number of organized tours are also conducted. For example, the Toronto Entomologists Association conducted a trip in 1993 with 20 people collecting butterflies; birding bus trips have been organized by the Royal Ontario Museum during May; the Field Biologists of Ontario held their 1993 annual meeting at Long Point, and the Federation of Ontario Naturalist have annual warbler and swan walks with 20 to 25 people.

The business survey indicated that local business owners perceived naturalists as having an impact on their business during the spring and fall seasons (Figure 3.1), but not to any great extent. In a way, this is surprising considering the importance of naturalistic activities in similar areas such as Point Pelee (Hvenegaard, Butler and Krystofiak 1989). Regarding the results from the local business survey, one of the limitations that has already been acknowledged is the assumption that business owners are able to determine what type of user is frequenting their establishment. A failure to recognize naturalists may result in their importance being underestimated and this in turn could affect exploitation of economic opportunities.

Productivity

The importance of naturalist activities within the Long Point Biosphere and Region is poorly understood. With the exception of Kreutzwiser (1979), there have been no significant studies of the recreational significance of naturalist activities in the area. Kreutzwiser's study, which focused on the marsh as a resource base for nature viewers, i.e., viewing and photographing waterfowl, wildlife and flora, anglers, waterfowl hunters and other wetland users, indicated that a recreational value (in 1978 dollars) in excess of \$122,000 was derived from the marshes, of which \$76,000 was spent in the local area on items such as gas, food, and lodging. There is no doubt that the significance of naturalist activities has increased since the time of Kreutzwiser's study. Bird watching has become one of the fastest growing hobbies in North America (Kerlinger and Wiedner, 1992).

Figure 3.11 Significant Nature Viewing Areas in and Near the Long Point Biosphere



An indication of the Long Point's significance to naturalists is provided by the operations of the Long Point Bird Observatory (LPBO). LPBO is a non-profit organization that operates largely through the efforts of volunteers. This organization has grown considerably over the years in terms of its professional reputation and economic impact on the local economy. The observatory is internationally renowned for its operations and in 1991 and 1992 had cash flows of \$741,920 and \$637,182 respectively.

If the assumption were made that the majority of the naturalists visiting the Long Point Area visit the Old Cut field station during their trip, and that each of these visitors spent a "birding-day" in the Long Point area, the number of birding days could then be multiplied by the same expenditure as assumed for an angling day, i.e., \$25.00 per day. This would result in a preliminary estimate of \$88,750 dollars being spent in the local area by birders during 1992. Of course this expenditure estimate is open to debate. Some might argue that it is lower, while others might argue that it is higher. For example, Hvenegaard *et al.* (1989) suggested that visitors to Point Pelee National Park on birding trips spent an average of \$37.00 per day spent birding. Using this figure, birders visiting the Long Point area may have spent upwards of \$131,350 during 1992.

Diversity

Opportunities for nature viewers are diverse in the Long Point Area, both at a landscape level and at a species or species grouping level. At a landscape level, the Long Point area has extensive coastal wetlands, the interesting environments of the Long Point sand spit and one of the largest concentrations of Carolinian Canada woodland sites in Southern Ontario, with over 55 significant natural areas in the Haldimand-Norfolk Region (Beazley 1993). Supported by these environments are a diversity of flora and fauna. One of the most visible spectacles is the spring and fall migration of waterfowl, songbirds and raptors, which are attracted to the habitats of the region and concentrated by the geomorphological features of the area. In addition, to migrating birds there are a variety of "Carolinian" bird species that breed in the area, and diverse assemblages of amphibians and reptiles, mammals, butterflies, trees and wildflowers.

3.2 Cottaging/Tourism/Retail

Structural

The Cottaging/Tourism/Retail sector is probably the most important sector of the economy in the Long Point study area based on the number of people it employs/supports. In 1992 there were 1232 cottages within the study area. Of this number of cottages, approximately half are located directly fronting a body of water, i.e., first tier, and half are at least one cottage back from the water, i.e., second tier. The majority of these cottages are located in the Long Point study sub-area (632), and in the Turkey Point study sub-area (521), with a few cottages located in the North Shore study sub-area (24) (Figure 3.12 and Table 3.3).

The most important factor that draws cottagers to the Long Point area is the natural resources that are present. In particular, Inner and Outer Long Point Bay are heavily used by anglers and recreational boaters. To service this recreational activity a number of marinas and trailer parks have been developed around Inner Long Point Bay and on the Turkey Point sandspit. Lawrence (1994) indicated that there are 2800 boat slips in the area with 13 marina facilities, 20 boat launching facilities and approximately 1500 trailer and campsites within 3 km of the shoreline. Another important component of the local economy is the Turkey Point and Long Point provincial parks. These two parks offer camping, beach use and nature viewing opportunities. Currently there are 268 campsites at Long Point Provincial Park (MNR 1989a) and 195 at Turkey Point Provincial Park (MNR 1989b).

Functional

As outlined in Wilcox (1993), by 1956 there were about 450 cottages and a half dozen permanent residences. By 1961, this had increased to 600 cottages and 30 permanent residences. And by 1970 the number of cottages had risen to 900. Since 1977, the number of cottages in the entire Long Point study area has increased slightly from 1139 cottages to 1232.

The number of marinas has also increased over the last few years (RMHN 1993, Pers. Comm.). In 1977 there were 8 marinas surrounding Inner Long Point Bay, with this number increasing to 11 in 1982 and remaining at 12 since 1987. The majority of the new marinas have been established in the North Shore study sub-area. Associated with the increase in marinas is the establishment of trailer parks.

Cottagers and trailer park users support a large amount of the retail activity in the entire Long Point study area. This is reflected by the nodes of economic activity that have developed in the Long Point area. To identify these nodes, a reconnaissance survey of business operations oriented towards tourism was conducted on June 3, 1993. A business was defined as a visible operation that appeared to be a separate entity. It should be noted that this does not rule out the possibility of one owner controlling several businesses.

The survey revealed 106 business operations concentrated in 14 nodes (Table 3.4, Figure 3.13). These 106 business can be further subdivided into the following 7 areas of service:

- Boating; a business whose survival depends on recreational boating,
- Fishing; a business that focuses on Long Point's sport fishery,
- Groceries/supplies; businesses selling unprepared food and/or other household supplies,
- Restaurants/Food Stands; business that prepare and sell food,
- Tourist retail; a retail store that focuses on seasonal customers,
- Retail; a store that sells primarily to local consumers,
- Accommodations; either motel/hotels or bed and breakfast establishments.

These sectors are not mutually exclusive. For example, a business with a focus towards boating may also be heavily reliant on sport fishing.

Figure 3.12 Location of Cottage and Trailer Park Communities, Marina and Beaches in the Long Point Area

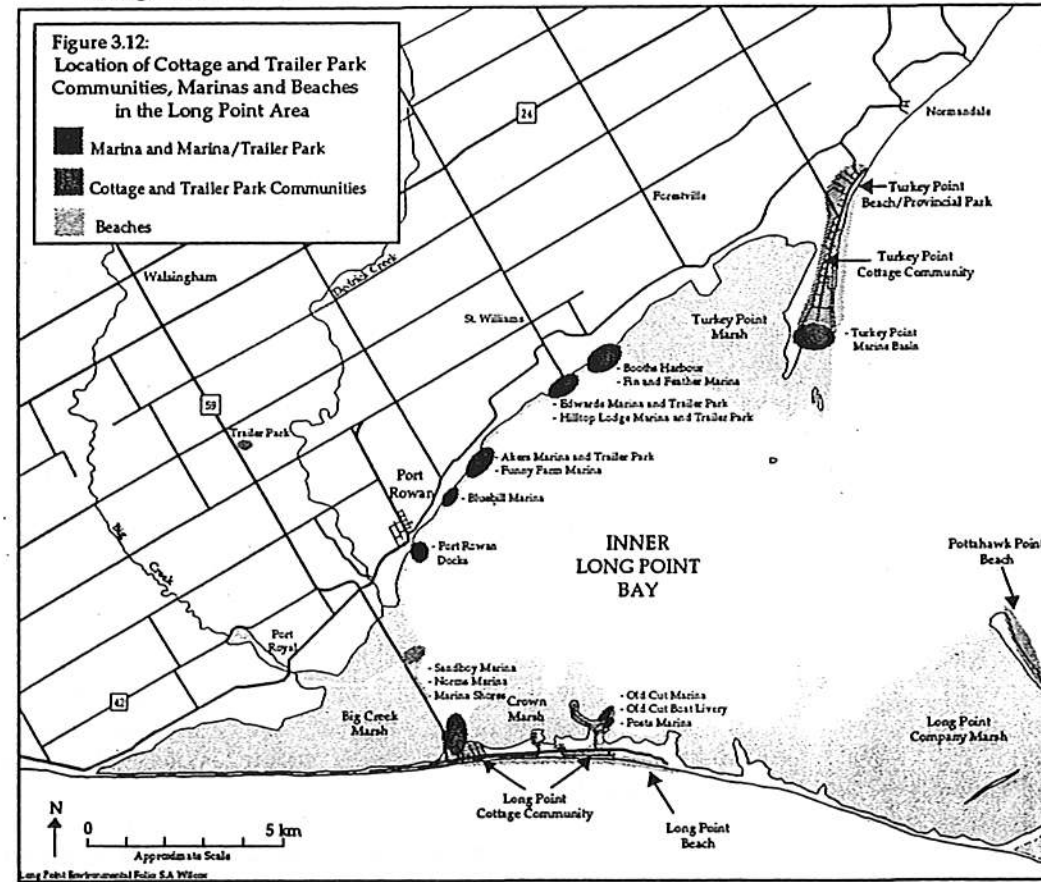


Table 3:3 Cottage and Permanent Residential Development in Study Sub-Areas

Development Type	Long Point	Port Rowan	Northshore	Turkey Point
COTTAGE DEVELOPMENT				
First Tier	391	0	10	194
Second Tier	241	0	14	327
PERMANENT RESIDENTIAL DEVELOPMENT				
single family	97	243	109	155
farm	7	0	22	0
retail with residence	10	27	2	5
Multi-residence	0	17	0	0
Total	746	287	157	681

Source: Ontario Ministry of Finance, Ontario Assessment System, 1992 and RMHN

Table 3.4 Business Operations in Study Sub-Areas

	Long Pt Spit	Port Rowan	North Shore	Turkey Pt.	Total
Boating	7	2	7	2	18
Fishing	1	2	3	1	7
Groceries/Supplies	2	8	3	1	14
Restaurants/Food Stands	5	9	2	9	25
Tourist Retail	1	5		2	8
Retail		4	3		7
Accommodations	2	1		4	7
Recreational Facilities	1	4		2	7
Light Manufacturing		4	1		5
Service Industries		8			8
Total	19	47	19	21	106

Figure 3.13 Nodes of Retail Activity Surrounding Inner Long Point Bay and Travel Corridors Throughout the Long Point Area

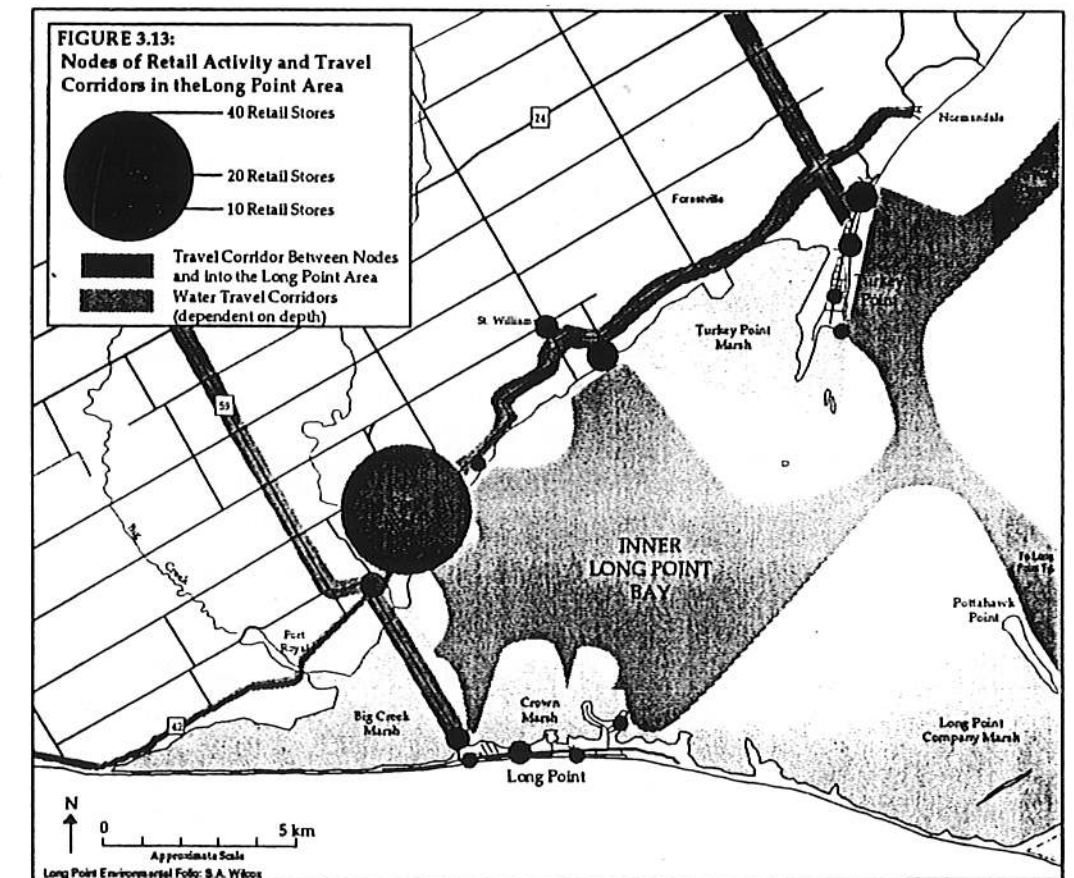
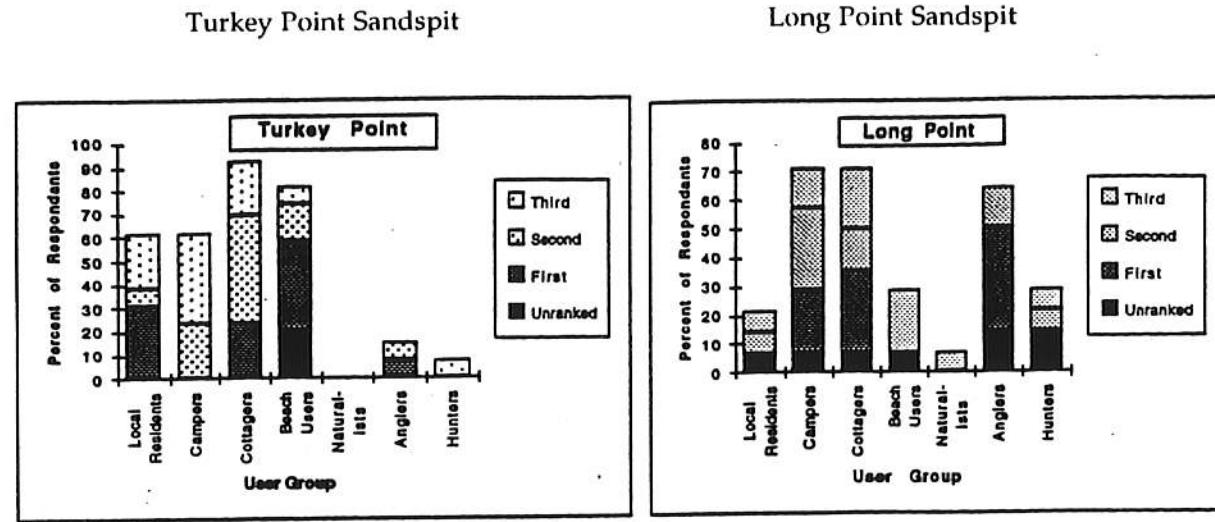


Figure 3.14 User Groups Providing the Greatest Percentage of Business on the Turkey Point and Long Point Sandspits During the Entire Year



In addition to the nodes of economic activity that are present within the Long Point area, a number of corridors link these nodes together. In general these corridors are located along the major traffic highways throughout the entire study area. There are, however, a number of travel corridors through Inner Long Point Bay that connect the different marinas (Figure 3.13).

Essential Processes

The data from the survey of local businesses in the Long Point area indicate that cottagers, and campers were perceived by the local business owners as being the most important customers during the entire year (Figure 3.1) and also during the summer and fall seasons (Figure 3.3 and 3.4 respectively). This opinion was especially apparent in the Turkey Point and Long Point sandspits (Figure 3.14), a result which was expected due to the large number of cottages in these areas.

Productivity

Phillips (1988) indicated that \$48 million dollars are spent in the Regional Municipality of Haldimand-Norfolk, with individual tourists spending an average of \$58.50 per day. Although it is expected that a great many of these tourists visit the Long Point area, Phillip's study did not indicate the relative importance of different tourist related activities and did not indicate how areas within the Region differed, (i.e., the Long Point Area as compared to the Delhi area). Nonetheless, tourists are an important user group that contribute to economic productivity in the area. Another component of economic productivity is the number of building permits that are issued. Lawrence (1994) indicated that in the period 1980 - 1987, 734 building permit applications were issued for Long Point and Turkey Point (Warner 1988). During this period the annual nominal value of these building permits increased from \$133,000 (1980) to a peak of \$536,000 (1986) at Turkey Point and \$213,000 to \$426,000 at Long Point. The greatest portion of this economic activity involved the construction of new cottages, \$1.2 million from 1980 to 1987 at Turkey Point, and the construction and repair of cottages at Long Point, \$870,000 and \$1.1 million respectively. A third indicator of productivity is employment opportunities in the Long Point area. Figure 3.15 and Figure 3.16 respectively show the levels of full-time employment and part-time employment indicated by the 1993 business survey respondents. These figures indicate that businesses in the Port Rowan, and Turkey Point study sub-areas employ relatively larger numbers of full-time staff, with the Long Point and North Shore sub-areas being relatively similar. In regards to part-time employees, Port Rowan and Turkey Point again hire relatively larger numbers of part-time employees, followed by Long Point and finally the North Shore.

Diversity

In regards to the cottaging/tourism/retail sector one measure of diversity is the range of services offered by the businesses. Figure 3.17 outlines the types of businesses that were identified by the survey respondents in the four study sub-areas. From these results, it is apparent that the Long Point and Turkey Point Communities have the greatest diversity in the primary focuses of their businesses, while the North shore had the lowest diversity of businesses.

Figure 3.15 Number of Part time Employees in Various Long Point Area Study Areas
The graphs of the study sub-areas have been organized in a clockwise manner; Long Point, Port Rowan, North Shore and Turkey Point.

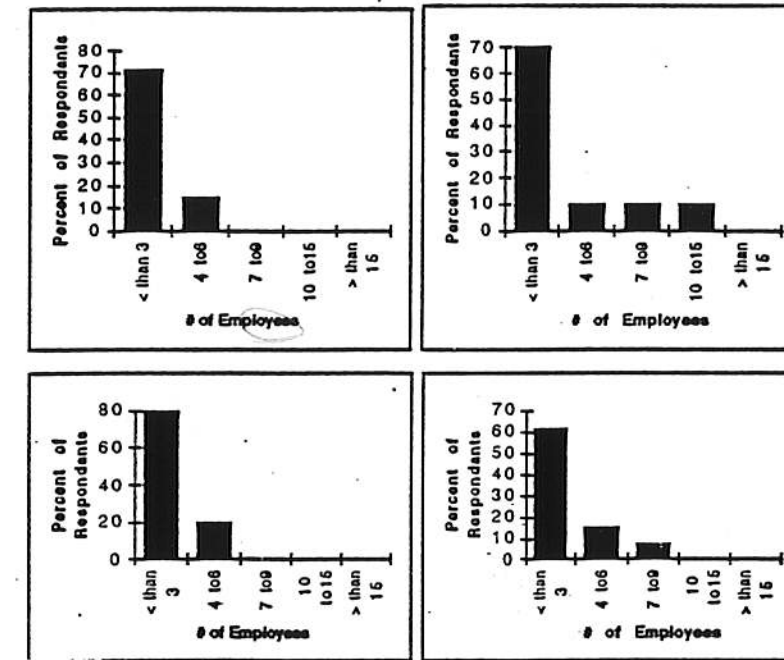


Figure 3.16 Number of full Time Employees in Tourism/Marina Oriented Businesses
The graphs of the study sub-areas have been organized in a clockwise manner; Long Point, Port Rowan, North Shore and Turkey Point.

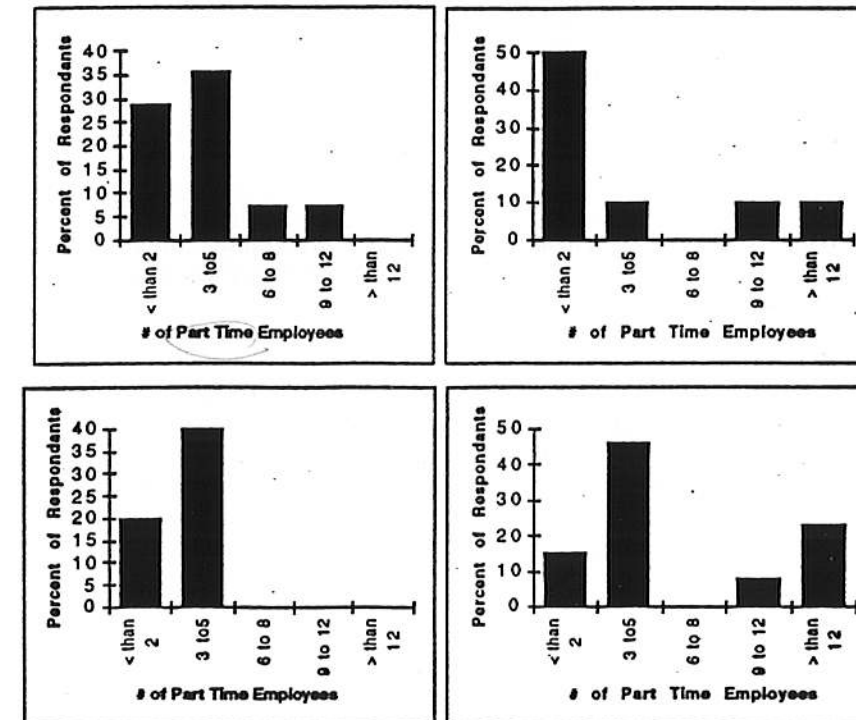
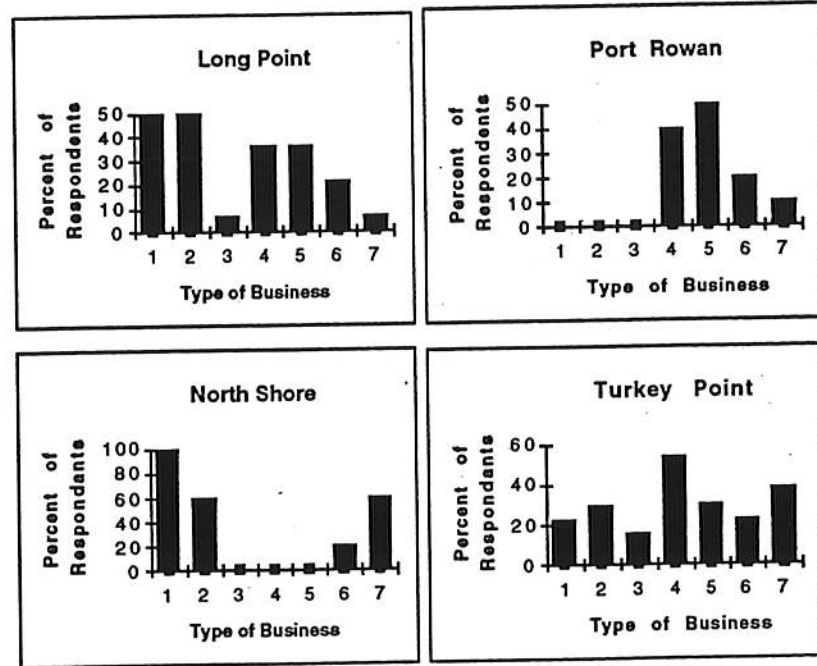


Figure 3.17 Diversity of Business Operations in the Long Point Area.
 Business operations have been sub-divided into seven categories: (1) marina or boating related, (2) fishing oriented, (3) groceries, supplies or hardware, (4) restaurants/food stands, (5) retail, (6) accommodations, and (7) recreational facilities.



- total farmland area in the region declined by 101,594 acres from 623,799 in 1951 to 522,205 in 1986. By 1986 total farmland area represented only 72.7% of the Region's total area whereas in 1951 it represented 87%;
- average farm size increased from 103.5 acres in 1951 to 158 acres in 1986, an increase of 52.9%.
- total farm population decreased from 40,256 in 1951 to 10,675 in 1986, a decline of 73.5%;
- persons per farm decreased from 6.7% to 3.2%.

The trends in average farm size can be shown more clearly in Table 3.6, with the number of farms smaller than 240 acres decreasing and the number of farms larger than 240 increasing. The percentage change is greatest for farms with acreages between 560 and 760 acres (+ 106%). There have also been some changes in the distribution of farms by product type between 1971 and 1986. Dairy, cattle and other livestock, wheat, fruits and vegetables and other field crops have remained relatively constant, while small grains have increased in distribution and tobacco has decreased in distribution (Table 3.5). In recent years tobacco may have increased in distribution, with the market regaining some of its strength, although it remains variable from year to year.

Essential Processes

In the immediate or core Long Point area, tobacco appears to be a relatively unimportant crop with the only tobacco farms being located immediately north of Turkey Point and along Highway 24. Although tobacco is not a predominant crop in the immediate Long Point area, its status is very important for the area, since the Long Point Region is very much supported by a "Tobacco Economy". As outlined in Wilcox (1993), Ontario's tobacco industry experienced a substantial decline in the early 1980's. From a peak production of nearly 230 million pounds in 1978, production fell to a low of 110 million pounds in 1987. More recently, market production has increased to 167 million pound in 1993, although not in a steady manner, reflected the volatility of the market (Tobacco Exchange Centre Pers. Comm) (Figure 3.18). Initial indications for the 1994 season is that production will be decreased once again due to poor sales.

During the past decade, the tobacco industry in Ontario has undergone a complete rationalization. Small farms, and farms in areas with soils less suitable for growing tobacco throughout Ontario were forced out of the industry. As a result, the amount of tobacco grown in areas such as Norfolk County has actually increased relative to the production of tobacco throughout Ontario.

There is no doubt that agricultural activities are of primary importance to the hinterland areas of the Long Point study area. As of 1992 there were 135 farms with residences in the core Long Point study area (Figure 2.2) (RMHN Pers. Comm.). It is expected that the majority of these farms market their products through conventional channels such as marketing boards and grain elevators, although several of the market gardening operations operate road side stands, especially along highways 24, 59 and the lake shore road.

3.3 Agriculture

Structural

At a regional scale, one of the predominant economic activities in the Long Point area is agriculture. The crops grown in the Haldimand-Norfolk region are mostly tobacco and small grains (RMHN 1989) with other crops and farm activities including dairy, cattle and other livestock, and fruits and vegetables. In the immediate area to the north of Inner Long Point Bay and Big Creek marsh land uses are predominately agriculture in nature (Yeung 1993).

During the 1980's the tobacco economy in the Haldimand-Norfolk region went through a period of rationalization. During this time a number of alternative or "exotic" crops were considered as possible substitutes for tobacco farmers. Some of these "exotic" crops included ginseng, garlic, chick peas, evening primrose, peppermint, artichokes, iokra, celeriac, oriental vegetables, collards, broccoli, peanuts and greenhouse crops (DPA Group 1987). Although some of these crops, i.e., ginseng, offer exciting potential, they operate in niche markets and will not likely develop to a scale comparable to tobacco or other small grains.

Functional

Until quite recently, the Haldimand-Norfolk region and the core Long Point area were strictly agricultural areas, with the DPA Group (1987) indicating that sixty percent of the region's population lived on farms in 1951. Over the last forty years there have been a number of agricultural land use trends in the Haldimand Norfolk Region. The RMHN (1989) identified these regional trends as follows:

- number of farms declined by 45.2%;

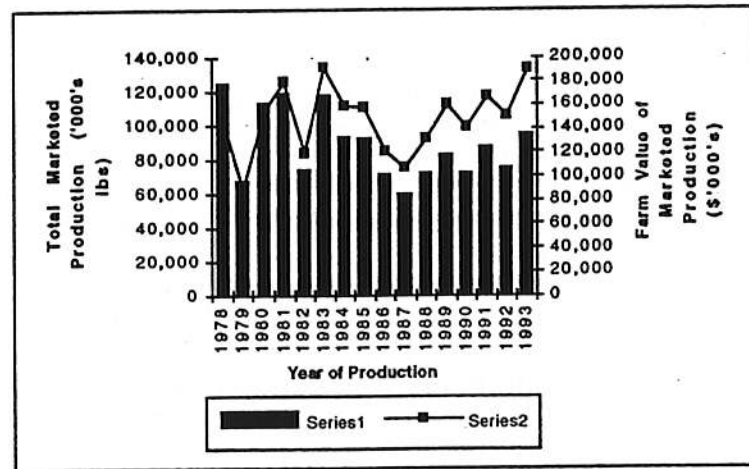
Table 3.5 Changes in Distribution of Farms by Product Type, Haldimand-Norfolk, 1971 to 1986

Product Type (%)	1971	1976	1981	1986	% change 1971-1986
Dairy	16.5	14.2	9.0	9.4	-7.1
Cattle & Other Livestock	21.5	14.6	15.0	18.3	-3.2
Wheat	0.6	2.9	2.0	2.3	+1.7
Small Grains	4.2	11.3	20.7	22.8	+18.6
Tobacco	45.5	39.2	36.3	29.9	-15.6
Fruits & Vegetables	6.6	5.8	7.4	8.6	+2.0
Other Field Crops	1.3	4.2	4.4	5.4	+4.1
Mixed Farms	3.7	7.8	5.2	3.3	-0.3

Table 3.6 Changes in Number of Farms Classified by Size, Haldimand-Norfolk, 1971 to 1986

	1951	1961	1971	1976	1981	1986	%Change (1951-1986)
Number of Farms	6,027	5,381	4,480	4,019	3,899	3,300	-45.2
Total Farm Area (acres)	623,799	607,663	575,675	552,467	557,477	522,205	-16.3
Average Farm Size (acres)	103.5	112.9	128.5	137.5	143.0	158.0	+52.9
Total Farm Population	40,256	23,701	18,850	-	13,554	10,675	-73.5
Persons/Farm	6.7	4.4	4.2	-	3.5	3.2	-52.2

Figure 3.18 Flue-Cured Tobacco Production and Farm Value, Norfolk County, 1978 to 1992



Productivity

Research by the author is on-going in the core Long Point study area to determine the number of people employed in the agricultural sector, the annual income of farm operations and the productivity of the area with respect to the crops that are being harvested.

Other aspects of agricultural productivity that are important in the Long Point area are the spin-off effects. Agricultural activities help to support retail activities in the village of Port Rowan during periods when cottaging and tourism are not prevalent. In addition, Port Rowan's annual Tomato Fest is a cultural event that is centered around an agricultural activity. Although the tomatoes are no longer a common crop in the area the late summer festival attracts large numbers of visitors.

Diversity

The Core Long Point area has a wide variety of crops that support a farm economy that may be more diversified than some areas of Haldimand-Norfolk where crops are predominantly tobacco or small grains. Crops consist primarily of corn, soybeans, mixed grains, vegetables tobacco and occasional orchards, with the type of crops being influenced by the nature of the soils that are present. As outlined in Stenson (1993) the soils immediately north of Inner Long Point Bay and Big Creek are clay loam, while the soils immediately north of Turkey Point marsh and along Highway 24 are sandy. This diversity of soil types supports the diversity of the crops that are being grown.

3.4 Manufacturing

Structural/Functional

As outlined in Wilcox (1993), the manufacturing sector in Haldimand-Norfolk consists of a small number of externally controlled firms and a much larger number of locally controlled firms. These locally controlled firms are extremely important to local economies. The majority of the manufacturing industries within the Region are small in size, employing between one and nineteen people (RMHN 1989). A study by the Ministry of Industry, Trade and Technology (1987) suggested that locally-controlled firms typically contribute 60 to 90% of the net employment growth, but go unnoticed due to small increments in employment gain. Externally controlled firms, however, come and go with greater impact. For this reason, the DPA Group (1987) suggested that the best prospect for achieving a higher rate of economic growth is in stimulating the start up and expansion of locally controlled firms.

Table 3.7 Employment in Manufacturing, Haldimand-Norfolk, 1989

Municipality	# of Establishments		Full-Time Employment		Part-Time Employment		Seasonal Employment		Total	
	1984	1989	1984	1989	1984	1989	1984	1989	1984	1989
Dunnville	28	27	900	398	61	62	435	401	1396	861
Haldimand	39	46	962	1148	68	53	68	116	1098	1317
- Caledonia	11	20	429	599	18	25	41	62	488	686
- Cayuga & Area	17	15	159	116	19	16	23	29	201	161
- Hagersville	11	11	374	433	31	12	4	25	409	470
Nanticoke	54	59	3224	3760	147	232	195	439	3,566	4431
- Jarvis & Area	15	15	2612	843	16	162	81	70	2709	1075
- Port Dover	19	28	425	2775	109	42	28	242	562	3059
- Waterford	20	16	187	142	22	28	86	127	295	297
Simcoe	43	42	2391	1947	73	111	348	443	2812	2501
Delhi	21	29	470	797	32	13	418	207	920	1017
Norfolk	16	13	287	457	36	37	159	237	482	731
Region of Haldimand Norfolk	201	216	8234	8507	417	508	1623	1843	10274	10858

Essential Processes

In the immediate Long Point area only a handful of manufacturing establishments are present, with the majority of these businesses being located in Port Rowan. In 1992, only eight industrial properties were present and in previous years such as 1977, 1982 and 1987 there were only 7 industrial properties (RMHN Pers. Comm.). Due to the limited number of manufacturing establishments in the Long Point area no structural or functional maps have been developed.

Productivity

Manufacturing industries do not appear to have a major impact upon Long Point's local economy relative to other activities such as tourism and recreational activities. It is important to note that manufacturing never appears to have been a major component in the local economies of the Long Point area, especially during recent years, although there is some evidence that suggests that it may have been slightly more important historically (Wilcox, 1993). Although manufacturing activities do not appear to affect the local Long Point area economy directly, there is potential for indirect affects through increased numbers of people working in areas such the Nanticoke Industrial area, located 20 km to the east (Figure 1.1), and using the core Long Point area for recreation. The Nanticoke industrial complex consists of several industries including the Stelco Steel mill, Ontario Hydro Generating Station and Texaco Oil Refinery, which in 1988 respectively employed 1437, 597 and 322 people (Serafin 1989). In addition to the Nanticoke Industrial area, there are ten acres of vacant industrial land with water and sewer services in Port Rowan (RMHN, 1991) whose future development may affect the local economy.

Diversity

The RMHN (1989) indicated that approximately 22% of the Regional Municipality of Haldimand-Norfolk's employment base was engaged in manufacturing at the time of the 1986 Federal Census. By 1989 this number had risen to almost 24% of the regions employment base (Wilcox, 1993). It is important to realize, however, that very little manufacturing activity occurs in the immediate vicinity of the core Long Point area. The Township of Norfolk, for example, has the smallest number of manufacturing establishments and the lowest number of people employed in manufacturing of any of the Towns or Townships that make up the Regional Municipality of Haldimand-Norfolk (Table 3.7).

4.0 PRELIMINARY AREAS OF ECONOMIC SIGNIFICANCE AND CONSTRAINT WITHIN THE LONG POINT BIOSPHERE AND REGION

In section 2.2 it was indicated that areas of economic significance would be assessed relative to the criteria of: maintenance of essential economic processes, maintenance of economic productivity, and protection of economic diversity; while areas of economic constraints would be assessed relative to a compatibility, tension, conflict continuum. This section identifies preliminary areas of economic significance and constraints, and provides preliminary results from the analysis. The results put forward in this working paper should be considered as indicative of areas of economic significance and constraint in the Long Point area.

4.1 Economic Significance

The identification of areas of economic significance is based on a set of criteria that reflect the principles of sustainability. In section 3.0, thematic or sectoral information was collected and organized generally around these principles/criteria. The next step in terms of significance involves considering the information relative to the various study sub-areas so that it can be portrayed through maps, providing an opportunity for integration with other biological geomorphological, and institutional information present in other Long Point Folio studies and reports.

The identification of areas of economic significance by incorporating a spatial component with the sectoral information is an initiative that has not been undertaken in any other studies that we are aware of. As a result, there are no previous initiatives to follow. One approach to this problem involves the development of indices to simplify and organize the thematic information. This, of course, requires consideration of the theory of measurement.

4.1.1 Theory of Measurement

The use of composite indices to simplify complex data systems to gain better insight has become common practice in a number of disciplines. For example, in economics gross national product and consumer price indices are used, in psychology IQ and other test scores are used, and in environmental planning and resource management indices for identifying significant areas have been used. As such, the development of indices of economic significance for application to the Long Point area may yield useful information for planning and resource management purposes.

The use of indices to determine areas of economic significance in the Long Point, however, requires a substantial amount of data at a high level of detail. It also requires careful consideration of the theory of measurement. Smith and Theberge (1987; p. 448) indicated that there are three aspects that must be considered. First, there are four scales of measurement (nominal, ordinal, interval and ratio), which have properties that define the types of mathematical operations that may be applied to the values. Second, measurement may involve either measuring actual environmental variables, such as the quantity of fish caught by commercial fishermen, or measuring human perception of a variable. Third, any measurements that are taken are subject to a number of forms of uncertainty, which affect the confidence that can be placed in the value.

Based on Smith and Theberge (1987) the characteristics of the four scales of measurement can be summarized as follows. The nominal scale is qualitative, and refers to mutually exclusive categories such as whether a human is male or female. The ordinal scale, which is also generally thought of as being qualitative, allows the categories of the scale to be ordered or ranked, for example high, medium or low. It is important to note that mathematical operations such as addition and multiplication cannot be performed on these categories. With interval measurement, the numerical distance between the various categories, or the scale, can be specified. This allows a real number to be assigned to each item, although the scale may not have a real zero point or origin, e.g., altitude or time. All

mathematical operations can be applied to this scale. A ratio scale has the same characteristics as an interval scale, as well as a true origin or zero point.

Thus, during the development of an index for the evaluation of an area it is important to consider the level of data that are available. When a number of different factors, or criteria, are being assessed simultaneously, the process of characterizing or evaluating each one separately and then adding the values together holds intuitive appeal. This process, however, is not valid if the data are being considered at a nominal or ordinal scale.

The second aspect that has to be considered is whether actual environmental variables are being measured, or whether human perceptions of these variables are being measured. With respect to the measurement of subjective human perceptions, utility theory (Varian 1992) is often used to translate them into quantitative mathematical equations or utility functions. Utility functions quantitatively express the preferences of a particular decision-maker for different levels of a criterion. As such, the function may vary between people and over time. Therefore, if human perceptions of variables are to be used in the construction of an index it is important that a number of different individuals and/or groups are involved in the ranking of the various categories to ensure that the result is not biased towards a single individual or group. In addition, with respect to uncertainty in measurement, the variance in the preferences of different people and interest groups has the potential to affect the subjective scores and weights assigned to particular criteria, and thus affects the final ranking.

4.1.2 Preliminary Assessment

For this preliminary assessment, the available information from section 3.0 was manipulated into a spatial framework using a qualitative approach. For each of the criteria, the economic sectors that were operating in each of the study sub-areas (as identified in section 2.1) were systematically evaluated based on their contribution towards that criteria. Areas were qualitatively ranked by assigning a "3" to areas with high importance, a "2" to areas with medium importance and a "1" to areas with low importance. Areas with three or more ranks in any category were given a total rank of that scale. In situations where two ranks were at one level and a third rank was a higher level, the rank at the lower level would be given. In situations where two ranks were at one level and the third was at a lower level, the rank at the higher level would be given. When sufficient data becomes available, this evaluation could be repeated, with the classification being completed on a quantitative basis. One of the acknowledged drawbacks of the current approach is its inability to consider the relative importance of each sector with respect to the other sectors.

From an economic perspective, the maintenance of essential economic processes can be conceptualized as activities that bring income or capital into the Long Point area, i.e., activities essential for the well-being of the economic system. The maintenance of economic productivity refers to amounts of income or capital being brought into the area, amounts of resources that are being harvested or numbers of employers/employees that the Long Point area supports. And the protection of economic diversity within and among each of the sectors can be thought of from the perspective of the diversity of business operations, user groups and land uses.

Table 4.1 outlines a first attempt at ranking the importance of different areas for maintaining essential economic processes, economic productivity and protecting economic diversity in the Long Point area based on the assembled data in section 3.0. The results provide a first approximation of the importance of the different areas in meeting this criteria. In addition, the exercise has highlighted the need for additional data in order to make systematic distinctions between rankings of high, medium and low importance.

Table 4.1 Preliminary Significant Areas for Maintaining Essential Economic Processes

Study Sub-Areas	Natural Resources			Cottaging Tourism/Retail	Agri-Culture	Manu-facturing	Rank
	Fishing	Waterfowl Hunting	Naturalist Activities				
Long Point	3	2	3	3	-	-	High
Port Rowan	2	1	1	3	3	2	Med
North Shore	3	1	1	3	2	2	Med
Turkey Point	2	1	1	3	-	-	Low
Natural Areas	-	1	3	1	-	-	Low
Agricultural Areas	-	-	1	-	3	-	Low
Marsh Areas	3	3	3	2	-	-	High
Inner Long Point Bay	3	2	2	3	-	-	High

Table 4.2 Preliminary Significant Areas for Maintaining Economic Productivity

Study Sub-Areas	Natural Resources			Cottaging Tourism/Retail	Agri-Culture	Manu-facturing	Rank
	Fishing	Waterfowl Hunting	Naturalist Activities				
Long Point	3	3	3	3	-	-	High
Port Rowan	2	2	2	3	2	2	Med
North Shore	3	1	1	3	2	2	Med
Turkey Point	2	1	1	3	-	-	Med
Natural Areas	-	1	3	1	-	-	Low
Agricultural Areas	-	-	1	-	3	-	Low
Marsh Areas	2	3	3	2	-	-	High
Inner Long Point Bay	3	3	3	3	-	-	High

Table 4.3 Preliminary Significant Areas for Protecting Economic Diversity

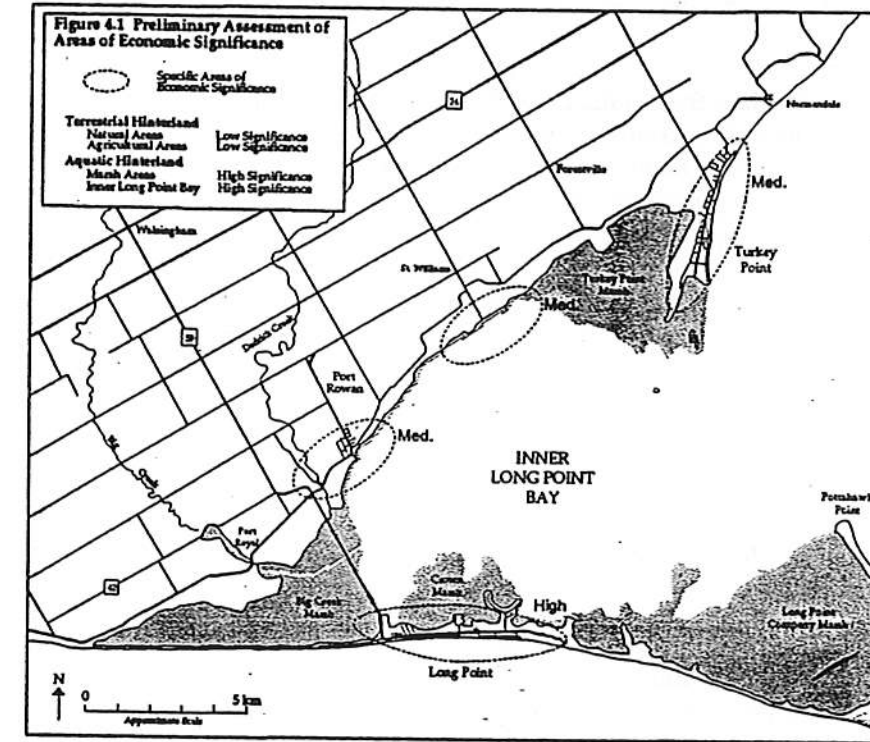
Study Sub-Areas	Natural Resources			Cottaging Tourism/ Retail	Agri- Culture	Manu- facturing	Rank
	Fishing	Waterfowl Hunting	Naturalist Activities				
Long Point	3	2	3	3	-	-	High
Port Rowan	2	2	1	3	1	2	Med
North Shore	3	1	1	2	-	-	Med
Turkey Point	2	1	2	3	-	-	Med
Natural Areas	-	1	3	2	-	-	Low
Agricultural Areas	-	1	2	1	3	-	Med
Marsh Areas	3	3	3	2	-	-	High
Inner Long Point Bay	3	3	2	2	-	-	High

From Table 4.1 it is apparent from this first attempt that the significant areas for maintaining essential economic processes based on the preliminary analysis are Long Point, Port Rowan, North Shore, Marsh and Inner Long Point Bay study sub-areas. With respect to maintaining economic productivity Table 4.2 indicates that Long Point, Port Rowan, Marsh and Inner Long Point Bay study sub-areas are significant. And Long Point, Marsh and Inner Long Point Bay study sub-areas are the most important for the protection of economic diversity (Table 4.3). With the collection of additional data it may be possible to make a more systematic distinction between rankings of high importance, medium importance and low importance and a more definitive answer with respect to the importance of different areas for protecting economic diversity relative to one another. Thus, upon considering the previous three criteria it is possible to develop a preliminary table of the overall economic significance of different Long Point study sub-areas (Table 4.4 and Figure 4.1). Based on this tentative assessment it appears that the Port Rowan, Long Point and North Shore communities are all areas of economic significance. In addition, Inner Long Point Bay and marsh study sub-areas were also identified as being areas of economic significance.

Table 4.4 Preliminary Areas of Economic Significance

Study Sub-Areas	Essential Processes	Productivity	Diversity	Overall Rank
Long Point	High	High	High	High
Port Rowan	Med.	Med.	Med.	Med.
North Shore	Med.	Med.	Med.	Med.
Turkey Point	Low	Med.	Med.	Med.
Natural Areas	Low	Med.	Low	Low
Agricultural Areas	Low	Low	Med.	Low
Marsh Areas	High	High	High	High
Inner Long Point Bay	High	High	High	High

Figure 4.1 Preliminary Areas of Economic Significance



4.2 Economic Constraints

In addition to determining areas of economic significance in the Long Point Biosphere and Region, in the second stage of the ABC resource assessment it is also necessary to identify areas of economic constraints. As outlined in section 2.2, areas of economic constraints can be tentatively determined and mapped using a conflict-tension-compatibility spectrum based upon the information provided in section 3.0. Conflict areas were identified as areas where economic activities in one sector were resulting in significant changes to other economic sectors and to the resource base and environmental quality. Tension areas were identified as zones representing an intermediate degree of change. And compatible areas were identified as areas where various economic sectors did not conflict with one another because no significant changes were occurring.

To incorporate a spatial component into the analysis a matrix approach was used, with the economic sectors comprising the vertical vectors, and study sub-areas comprising the horizontal vectors. To operationalize the compatibility-tension-conflict spectrum a simplifying assumption was made that the majority of the economic constraints would occur as a result of conflicts among different sectors or user groups, e.g., between cottaging/tourism/retail and nature viewers. The evaluation procedure that was followed involved assessing each sector against the other sectors for each of the study sub-areas. For example, cottaging/tourism/retail was assessed against fishing, hunting, naturalist viewing, agriculture and manufacturing in each of the study sub-areas. The ranking scheme that was used consisted of assigning a "3" for conflict areas, "2" for tension areas and a "1" for compatible areas. As was the case with determining the preliminary areas of economic significance one of the problems with this approach is dealing with the relative importance of the various economic constraints among the different sectors. Another aspect that is not directly incorporated into this analysis is the effects of

sector activities on the environmental/resource base of that sector. This reflects the sustainability debate, and the difficulties outlined in section 2.2.2 associated with incorporating equity, or intergenerational equity, into the analysis. Information is presented in other reports for the Environmental Folio which can be used to suggest conflict/tension, e.g., concern over certain species of waterfowl (Wilcox and Knapton 1994) and concern over the decline of fish species such as Yellow Perch (Craig 1993).

Table 4.5 and Figure 4.2 outline the results from this preliminary analysis. None of the study sub-areas can be identified as being purely conflict areas, although in the Turkey Point and in the North Shore areas conflict was present among some of the sectors. Generally, the Inner Long Point Bay was the area under the greatest tension, with marsh areas and the Long Point community also being under high tension.

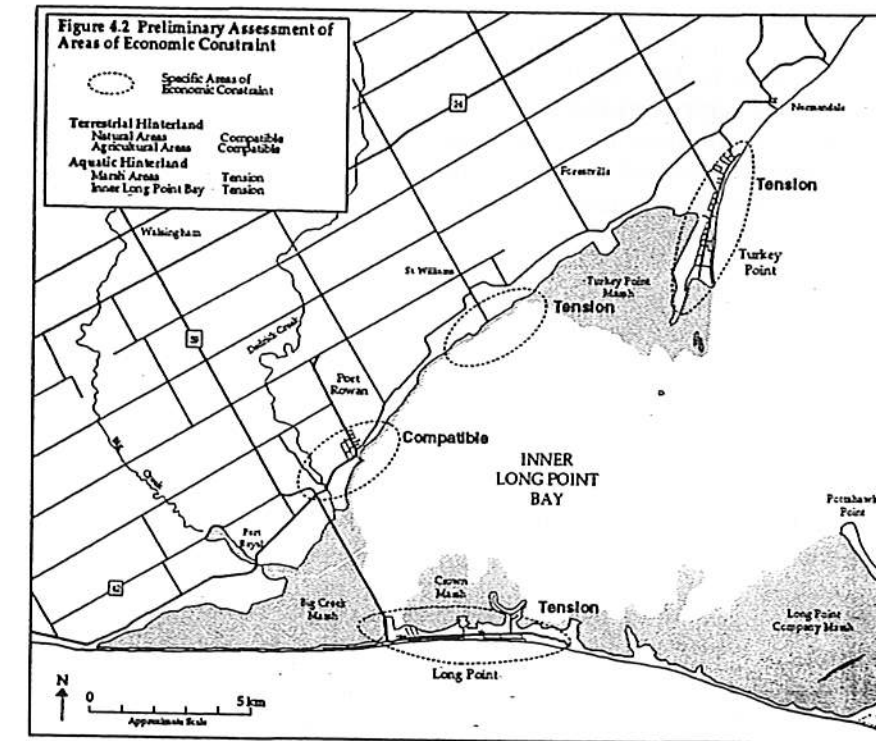
One of the conflict areas in the Long Point study area is the Turkey Point beach along Basin Street. The western portion of the Turkey Point Provincial Park beach section (parallel to Basin Street) has been classified as Class I wetland. As such, MNR is obligated under the wetland policy act to retain this section of beach wetland, i.e., sedge meadows, in a natural state. Local business owners in the Turkey Point community perceive their economic fortunes to be tied closely to number of beach users that occupy the area. Thus, the notion that a section of beach should be set aside and allowed to naturalize or remain in a natural state antagonizes some members of the local business community, and has resulted in this section of the beach becoming a high conflict zone with the unauthorized cutting of the wetland vegetation by local property owners occurring on a regular basis.

Another area of conflict occurs along the north shore of Inner Long Point Bay where the expansion of the cottaging and tourism sector is resulting in wetland loss. The different uses of this area have been highly contested with Ontario Municipal Board hearings having been conducted since the mid 1980's (Lawrence 1994). These hearings have resulted in various outcomes, with some approvals, other approvals with conditions attached, and some rejections.

Table 4.5 Preliminary Areas of Economic Constraint in the Long Point Study Area

Study Sub Areas	F	F	F	F	F	H	H	H	H	N	N	N	N	N	N	A	Rank
	H	N	T	A	M	N	T	A	M	T	A	M	A	M	M		
Long Point	1	1	2	--	--	2	2	--	--	2	--	--	--	--	--	--	Ten.
Port Rowan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Com.
North Shore	1	1	1	1	--	1	2	1	--	3	1	--	1	--	--	--	Ten.
Turkey Point	1	1	2	--	--	1	1	--	--	3	--	--	--	--	--	--	Ten.
Natural Areas	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	Com.
Agricultural Areas	--	--	--	--	--	--	--	1	--	--	1	--	1	--	--	--	Com.
Emergent Marshes	2	1	1	--	--	2	2	--	--	2	--	--	--	--	--	--	Ten.
Inner Long Point Bay	2	1	2	--	--	2	2	--	--	2	--	--	--	--	--	--	Ten.

Figure 4.2 Preliminary Areas of Economic Constraint



5.0 ISSUES FOR PLANNING AND FUTURE RESEARCH

The most important contribution of this working paper is the collection, analysis, synthesis and interpretation of available data on economic activities in the Long Point study area. The completion of the significance and constraints section in a finalized form was hindered because detailed data that would allow indices to be constructed were not yet available. Additional research should be conducted to address this issue. It is apparent that a strategic framework for conducting additional economic research and data collection should be developed, and that this framework should be developed in a manner that will allow it to evolve into a monitoring system for the Long Point area economy and its sustainability.

The approach applied in this working paper could be adapted to produce a suitable data collection and monitoring framework for strategic planning purposes in the Long Point area. The strong points of this framework are as follows: first, it provides an approach for conveying economic knowledge about the Long Point area in a manner that may allow it to be linked with knowledge about the biological, geomorphological and institutional structures and functions within the Long Point area for the purposes of strategic planning and resource management. The detailed development of such linkages requires further research, however. Second, the approach is straightforward and flexible, making its potential application by the local community possible, which in turn might foster an on-going understanding of the economic activities of the Long Point area.

In applying this strategic data collection and monitoring framework, two fundamental criteria are recommended. First, where possible, the data that is collected should be in a format that allows intra-sectoral comparisons to be made. This would effectively address the acknowledged criticism that the current analysis using matrices and indices fails to make an adequate distinction between different sectors when determining areas of economic significance and constraint. Second, the data that is collected should allow the importance of different study sub-areas affecting each of the sectors to be ranked in a systematic manner. This would address the other acknowledged criticism that the process used to distinguish areas of high, medium and low importance towards meeting specific sustainability criteria is not quantified or counted in a systematic way. If these criteria are utilised it should be possible to assess the significance and constraints of the different study sub-areas in a systematic and more defensible manner, allowing planning efforts to be focused on areas where sustainable use is of concern.

Based on our current understanding of economic activities within and between sectors in the Long Point area, it is apparent that varying degrees of additional research are required for each sector, with the possible exception of the manufacturing sector, due to its relative insignificance as compared to various forms of tourism. Issues and areas requiring additional research might include:

Marina/Boating Study

A study of marinas and boating related activities would yield useful information for determining the demand and supply of boating facilities in the Inner Long Point Bay, determining their net impact on the Long Point area economy, and determining the feasibility of increasing potential economic benefits from this sector.

Agricultural Economic Study

The magnitude and relative importance of the agricultural sector in the immediate Long Point area is poorly understood. The present number of farms are unknown, but the average size and gross annual income of these farms is not readily available.

Cottage-Use Study

It would be useful to complete a cottage-use survey to determine how the magnitude and duration of cottage activity varies during different periods of the year, and to determine what the economic impact of cottaging is relative to other forms of tourism. During most of the year cottagers are overwhelmingly perceived as being the most economically important user group in the Long Point area. It would be interesting to see if this perception is supported by use statistics, and to determine the net economic impact of cottagers on the Long Point area.

Resource-User Group Study

Very little is known about the expenditure patterns and demographics of different natural resource user-groups making use of the Long Point area. Anglers, due to their numbers, are perceived as having the greatest economic impact on the Long Point area by local businesses, followed by waterfowl hunters, with birders/naturalists being perceived as having minimal affects. Research in other areas, however, suggests that traditional stereotypes may not always be accurate. For example, a study in the Cape May area of New Jersey determined that hunters had an estimated expenditure of \$1 million, birders an estimated expenditure of \$10 million, and anglers an estimated expenditure of \$25 million (Kerlinger and Wiedner 1991). Thus, it would be useful if studies were conducted to determine the expenditure patterns and demographics of each of these user-groups in the Long Point area.

The scope and the detail of the proposed research projects outlined above varies. As such, it is necessary to rank strategically these recommendations against a set of criteria so that they are addressed in a time and cost effective manner. Proposed criteria for identifying priority research projects are as follows: first, the economic issue is of extreme interest or concern to the local community; second, the proposed research identifies significant economic opportunities in the Long Point study area; and third, the proposed research results in an increased understanding of economic activities in the Long

Point area, aiding planning and resource management decisions. Based on these criteria, the above studies have been assessed as high, medium or low priority, with the rationale for this ranking being provided.

Marina/Boating Study

The marina/boating study has been ranked as being a medium to high priority research project. This study would be of interest and concern to the Long Point area community and would also provide a better understanding of the need for additional marinas and marina expansions in the Inner Bay area. In addition, this type of a study would provide some indication of the net economic gains that would result from additional marina developments in the Long Point area.

Agricultural Economic Study

The agricultural economic study has been identified as a low priority research project in the Long Point area. This ranking is based on the expectation that it is unlikely that an economic study would result in the discover of any additional economic opportunities that are not already being exploited by the community. In addition, agricultural areas in the Long Point area are not perceived as being under any major threat. Regarding an increase in the understanding of economic activities in the Long Point area, on-going research by the Heritage Resources Centre will attempt to address some of the issues such as the average size and gross annual income.

Cottage-User Study

The cottage user study has been identified as having a medium priority. The Long Point community is not overly concerned about the magnitude and duration of cottage activity. There is, however, potential to discover economic opportunities for the local community through a greater understanding of the economic activities of this seasonal user group, and in addition a greater understanding will also benefit planning and resource management decisions.

Resource-User Group Study

The resource-user group study has been ranked as a high priority research project. The relative merits of different resource-user groups in the Long Point area are highly debated by the local community. There is the potential for significant economic opportunities to be realised through a better understanding of these groups. And an increased understanding of the relative importance of different resource user groups has obvious implications for improving planning and resource management decisions.

There are three main groups that use the ecological resources of the Long Point area: anglers, waterfowl hunters and birders. All three of these user groups are dependent on the continued ability of the Long Point area to attract, and support large and diverse numbers of wildlife. The majority of the institutional arrangements in the Long Point area are in some way or another acting to ensure that this ability is retained for the future (cf. Skibicki 1993). The relative economic impact that each of these user groups has upon the local Long Point Economy is important. With this knowledge it may be possible to manage the resources in a manner that fosters wise stewardship, increased satisfaction/ use and increased economic spending in the Long Point area.

Of the three resource-user group studies that need to be conducted i.e., the economic impact of anglers, hunters and birders, we feel that the initial focus should be on birders for the following reasons. First, the birding user group appears to be poorly understood by the local business community. This was also the case in the Point Pelee area during the early 1980's. The economic importance of birding to the local economies surrounding Point Pelee National Park, however, was confirmed by Hvenegaard *et al.* (1989). Their study estimated that bird watching trips to Point Pelee in May of 1987 resulted in total expenditures of over \$3.8 million, of which \$2.1 million was spent locally in the Leamington district. The average bird watcher spent \$126 locally on these trips, and an average of \$37 per day spent birding. Prior to Hvenegaard *et al.*'s (1989) study the local residents of the Point Pelee area had no

idea that birders injected this amount of money into the local economy. The same scenario may be occurring in the Long Point area.

Second, birders appear to be one of the fastest growing resource user groups in North America. The numbers of birders in North America has increased considerably over the last three decades with some estimates ranging as high as 60 million participants in the United States (Hall and O'Leary 1989, in Kerlinger and Brett 1994) although the number of "committed" or "active" birders is actually smaller. In Canada, the results of "The 1991 Importance of Wildlife to Canadians Survey" (Filion *et al.* 1993) indicated that nearly one in five Canadians (18.7 percent) took part in non-consumptive wildlife related activities and spent \$2.4 billion on travel expenses and special equipment for these voyages.

Third, economic studies on birders throughout North America have consistently illustrated that they have large economic impacts on surrounding communities. For example, birders visiting Cape May, New Jersey during 1988 were estimated as having a conservative impact of \$6 million per year (Kerlinger and Wiedner 1991) with this estimate being up-dated to \$10 million per year as of 1991-1992 (Kerlinger 1993). At Point Pelee, Ontario, birders were estimated to have had a \$2.1 million impact on the local economy during 1987 (Hvenegaard *et al.* 1989). At Hawk Mountain Sanctuary in Pennsylvania the impact of birders was \$2.4 million in 1990. And at High Island, along the upper Texas coast, birders were estimated to have had a \$2.5 million impact on the local economy (Eubanks, Kerlinger, and Payne 1993). All of these estimates are direct economic impacts with no economic multipliers being applied.

Fourth, the birding resource user group is probably under exploited in the Long Point area, and offers substantial economic opportunities. These same opportunities were probably realised by progressive business operations who catered to anglers during the 1940's and 1950's when sport fishing was becoming increasingly popular. With sport fishing and waterfowl hunting operations at, or operating close to peak "carrying capacity", additional marketing attempts directed towards these user groups will not result in significant economic returns. Marketing for the birding user group, however, may result in substantial economic returns being brought into the Long Point area since there is currently no marketing aimed at this user group. Butler and Fenton (1986) indicated that the little-old-lady-in-tennis-shoes caricature is a highly outdated image of the modern bird watcher. For example, in 1989, the New Jersey Audubon Society's Cape May Bird Observatory conducted a national survey in the United States. The results suggested that birders as a group spend large amounts of money: a conservative \$1,850 per person per year on a wide variety of products and services (Kerlinger and Wiedner, 1992). The local economy of the Long Point area could recognize this potential and develop its ability to take advantage of it.

Based on the above considerations, a study to determine the economic impact of birders on the Long Point area is currently being undertaken, with the results of this research expected to be complete in the fall of 1994. The objectives of this study are: first, to collect information on bird watcher recreational/demographic characteristics; second, to collect information on the expenditures of birders in the Long Point area; third, to collect information on the additional economic value of the Long Point area to birders; and fourth, to collect information to enable planning for the future use of the Long Point area by birders and associated economic benefits.

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Appendix 1 Common and Scientific Name of Species Identified in this Report

Common Name	Scientific Name
Fish	
Black Crappie	<i>Pomoxis nigromaculatus</i>
Brown Bullhead	<i>Ictalurus nebulosus</i>
Channel Catfish	<i>I. punctatus</i>
Yellow Perch	<i>Perca flavescens</i>
Walleye	<i>Stizostedion vitreum</i>
Largemouth Bass	<i>Micropterus salmoides</i>
Smallmouth Bass	<i>M. dolomieu</i>
Northern Pike	<i>Esox lucius</i>
Bowfin	<i>Amia calva</i>
Sheepshad	<i>Aplodinotus grunniens</i>
Carp	<i>Cyprinus carpio</i>
Rock Bass	<i>Ambloplites rupestris</i>
Pumpkinseed	<i>Lepomis gibbosus</i>
Bluegill	<i>L. macrochirus</i>
American Eel	<i>Anguilla rostrata</i>
White Perch	<i>Aplodinotus grunniens</i>
Quillback	<i>Carpoides cyprinus</i>
White Sucker	<i>Catostomus commersoni</i>
Birds	
Mallard	<i>Anas platyrhynchos</i>
American Wigeon	<i>A. americana</i>
American Black Duck	<i>A. rubripes</i>
Pintail	<i>A. acuta</i>
Gadwell	<i>A. strepera</i>
Green-winged Teal	<i>A. crecca</i>
Ring-necked Duck	<i>Athya collaris</i>
Canvasback	<i>A. valisneria</i>
Redhead Duck	<i>A. americana</i>
Lesser Scaup	<i>A. affinis</i>
Mammals	
Muskrats	<i>Ondatra zibethicus</i>
Mink	<i>Mustela vison</i>
Raccoon	<i>Procyon lotor</i>