



LAKE NIPIGON BASIN SIGNATURE SITE

ECOLOGICAL LAND USE AND RESOURCE MANAGEMENT STRATEGY

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*“Unless it is cherished, the glory of Nepigon may fade, and
the story of its marvellous attractions may become a tradition
of the past.”*

A.R. Macdonough
Scribner's Magazine
Volume 6, Issue 3, P.271-283,
September 1889

LAKE NIPIGON BASIN SIGNATURE SITE

CHAPTER 1

July 2003

APPROVAL STATEMENT:

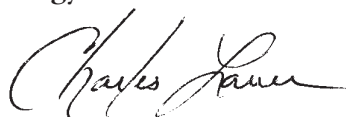
I am pleased to approve the Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy as the official land use policy for the Lake Nipigon Basin Signature Site.

This Strategy provides land use direction for the conservation, development and protection of the various natural resources and values within the land use areas that comprise the Lake Nipigon Basin Signature Site.

The Lake Nipigon Basin Signature Site is one of 9 such areas featured in the Ontario's Living Legacy Land Use Strategy (1999). Signature Sites are identified for their range of natural and recreational values and their potential to contribute to future recreation and tourism.

The Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy implements the recommendations of the OLL Land Use Strategy, provides overall guidance for resource management activities and development, and provides the context for management plans for provincial parks and conservation reserves and resource management guidelines for enhanced management areas in the Lake Nipigon Basin.

I wish to acknowledge the significant efforts of those involved in the development of Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy.



Charlie Lauer
Regional Director
Northwest Region



Adair Ireland-Smith
Managing Director
Ontario Parks

STATEMENT OF ENVIRONMENTAL VALUES AND THE ENVIRONMENTAL BILL OF RIGHTS

In accordance with the provisions of the *Environmental Bill of Rights*, the Ministry of Natural Resources prepared a *Statement of Environmental Values*. It describes how the purposes of the *Environmental Bill of Rights* are to be considered whenever decisions are to be made which might significantly affect the environment.

The primary purpose of the *Environmental Bill of Rights* is “to protect, conserve and wherever possible, restore the integrity of the environment.” From the Ministry’s perspective, that broad statement of purpose translates into four objectives in its *Statement of Environmental Values*:

- To ensure the long-term health of the ecosystems by protecting and conserving our valuable soil, aquatic resources, forest and wildlife resources as well as their biological foundations;
- To ensure the continuing availability of natural resources for the long-term benefit of the people of Ontario;
- To protect natural heritage and biological features of provincial significance; and,
- To protect human life, the resource base and the physical property from the threats of forest fires, floods and erosion.

The Ministry’s *Statement of Environmental Values* has been considered in the development of this strategy for the Lake Nipigon Basin Signature Site.

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1 CONTEXT

1.1 INTRODUCTION

The Lake Nipigon Basin was identified as one of nine Featured Areas (also known as Signature Sites) in the *Ontario's Living Legacy Land Use Strategy* (July 1999), and is recognized as having a range of highly significant natural and cultural values that warrant special strategies. The Lake Nipigon Basin also has very significant tourism and recreation potential that merits enhanced planning and management.

The Basin is composed of an array of land use designations, including existing provincial parks, as well as new parks, conservation reserves, forest reserves, enhanced management areas and general use areas designated through Ontario's Living Legacy land use planning process. The area is home to diverse communities (Aboriginal and non-Aboriginal), significant earth and life science features (dramatic landscapes, vulnerable, threatened and endangered species) and a variety of resource uses (commercial, recreational and traditional). The Lake Nipigon Basin Signature Site protects such values as plant communities, significant earth science features, wildlife, and cultural resources while providing a variety of recreational opportunities. The recreational and natural resources of the Basin support the economic base of many local communities.

1.2 GOAL AND PRINCIPLES

1.2.1 GOAL STATEMENT

In recognition of the significant earth, life, cultural and recreational values of the Lake Nipigon Basin and the overall importance of this area to the social and spiritual fabric of the surrounding communities, the following goal statement for the management of the Basin was developed.

To protect, enhance and where necessary, restore, the natural ecosystems, populations and wilderness qualities of the Lake Nipigon

Basin while allowing for tourism, recreational, and industrial development that will not compromise the integrity and environmental values of the Basin ecosystem.

1.2.2 STEWARDSHIP PRINCIPLES

The following Stewardship Principles from *Beyond 2000, Ministry of Natural Resources Strategic Direction*, guided the development of objectives, identification of options and establishment of management direction for the Nipigon Basin.

- Sustainable development relies on integrated management approaches which consider and systematically assess the full range of environmental, social and economic factors when decisions are made about the use of natural resources
- The pursuit of sustainable development means that we must manage resources on the basis of continuous improvement. This evolution must occur in a way that attempts to be fair to all those affected. Those affected by change must have access to information and opportunities to provide input to decisions which affect their lives
- The sustainable development of our natural resources, by definition, has limits. These limits are defined by the finite capacity of our natural systems
- From both a sound business and environmental perspective, it is less costly and more effective to anticipate and prevent negative environmental impacts before undertaking new activities than it is to correct environmental problems after the fact
- Rehabilitating degraded environments is an important aspect of resource stewardship. Where feasible, work will be undertaken to improve site conditions, foster ecosystem and natural population recoveries and bring to a more healthy state, sites, ecosystems and natural populations
- A sound understanding of natural and ecological systems and how our actions affect them is key to achieving sustainability

- Our understanding of the way the natural world works and how our actions affect it is often incomplete. This means that we exercise caution and special concern for natural values in the face of such uncertainty and respect the precautionary principle
- Applied research, exchanges and transfer of scientific and technological knowledge and innovative, appropriate technologies must be developed to further the sustainable development of natural resources
- In order to achieve sustainable development, environmental protection must be an integral part of the development process and cannot be considered in isolation

1.3 ABOUT THIS DOCUMENT

1.3.1 PURPOSE AND SCOPE

The *Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy* has been prepared to provide additional guidance and clarification of the land use direction contained in the *Ontario's Living Legacy Land Use Strategy* as it applies to the Lake Nipigon Basin Signature Site. The planning direction builds on the Area Specific Policies of Appendix A of the *Ontario's Living Legacy Land Use Strategy* and implements the policy direction found in other sections of the document.

All existing land use direction (e.g., from the *Ontario's Living Legacy Land Use Strategy*, Nipigon District Land Use Guidelines, Thunder Bay District Land Use Guidelines, etc.) that currently applies to the Lake Nipigon Basin will be replaced by the direction contained in this document. Public input from the consultation process used in the development of this strategy will also be used in the preparation of any proposed land use amendments required to implement the direction contained in this strategy.

In addition, this document will replace the Lake Nipigon Integrated Resource Management Plan, and may require

amendments to other resource management plans and strategies (e.g., forest management plans, district fisheries management plans, fire management strategies, etc).

All of the Ministry of Natural Resource's local land use direction will be incorporated into a Crown Land Use Atlas that consolidates direction from the Ontario's Living Legacy Land Use Strategy District Land Use Guidelines and other land use plans. This Atlas will be primarily maintained on an Internet site, so that up-to-date direction will be widely accessible. The local land use direction in the approved Lake Nipigon Basin Strategy will be included in this new Atlas.

1.3.2 ORGANIZATION AND CONTENT

The *Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy* is an all encompassing document that provides two levels of planning direction - the land use level and the resources management level. The document is divided up into twelve chapters:

- Chapter 1 provides introductory information, goals and principles, an overview of the various attributes of the Lake Nipigon Basin, a brief description of the planning process, objectives and issues, and land use direction for the natural resources within the signature site. The resource management documents found in Chapters 2 to 12 are consistent with this land use direction.
- Chapters 2 to 12 contain: three conservation reserve management plans (Nipigon Palisades, Nipigon River, and Lake Nipigon); two park management plans (Black Sturgeon River; and one plan for the five parks located along the shores of Lake Nipigon); and, six resource management guidelines for each of the enhanced management areas. Chapter 1, (which comprises the land use direction for the Lake Nipigon Basin), and each management plan and management guideline in Chapters 2 to 12 are considered to be 'stand alone' documents. This means that each chapter can be used independently of one another,

and may be reviewed or amended independently if required.

The content of Chapter 1, Sections 1 and 2 has largely been drawn from previously written or published material, some of which has been updated or expanded to make it current. Chapter 1, Section 3 is based on the planning options document. The identified direction has been selected and in some cases modified as a result of public input, advisory committee recommendations and government review.

Additional supporting and explanatory information on the planning process, public consultation, issues, background information and resource user guides can be found in Appendices A to E.

1.4 LANDS FOR LIFE AND ONTARIO'S LIVING LEGACY

The identification of the Lake Nipigon Basin as one of the nine Signature Sites under Ontario's Living Legacy is based on work carried out during the Lands for Life planning process. Three citizen's Round Tables established in the Boreal West, Boreal East and Great Lake-St. Lawrence planning regions (Lake Nipigon Basin is located within the Boreal West Planning Region) conducted the majority of this work. The Lands for Life Round Tables, each composed of 12 to 14 citizens drawn from diverse backgrounds, met from June 1997 to July 1998.

The Round Tables carried out extensive public consultation throughout their planning region and in southern Ontario. Thousands of people were provided with opportunities to participate through a variety of means including regular Round Table meetings, public meetings, community workshops, questionnaires, written submissions, and e-mail. As part of the consultation process, extensive information was made available to the public through publications, open houses and an Internet site.

In July 1998, the three Round Tables' draft recommendations were submitted to the

Minister of Natural Resources, and subsequently combined into a Consolidated Recommendations Report that was circulated for public comment in late 1998; over 12,000 responses were received. The provincial government and various other sectors met during the winter of 1999 to develop strategies for enhancing the recommendations from the Round Tables to better achieve the four objectives set out at the beginning of the Lands for Life planning process.

In March 1999, the Premier announced Ontario's Living Legacy and the release of the Forest Accord and the Draft Land Use Strategy. After a review period in which over 8,000 comments were received, the *Ontario's Living Legacy Land Use Strategy* was released to the public in July 1999. Four objectives are cited in the Land Use Strategy as follows:

- Completing Ontario's system of parks and protected areas
- Recognizing the land use needs of the resource based tourism industry
- Providing forest, mining and other resource industries with greater land and resource use certainty
- Enhancing angling, hunting and other Crown land recreation opportunities

There were nine Featured Areas (Signature Sites) identified in the province in the Ontario's Living Legacy Strategy. Signature Sites were selected for a special approach that focused on retaining and enhancing the special characteristics of each area. The Lake Nipigon Basin is one of these special areas.

The Boreal West Round Table's perspective about the Lake Nipigon Basin and its significance were supported by many public comments that were received during the Lands for Life project. It was this initial work of the Round Table and the input from the public that resulted in the Basin's status as a Signature Site with recognition for and protection of its special attributes.

The Land Use Strategy provides direction on land use designations, permitted uses and

future planning and consultation needs, all of which have guided the development of objectives and direction for the management of the Lake Nipigon Basin as outlined in this Strategy.

The *Ontario's Living Legacy Land Use Strategy* identifies the basic land use intent for each of the designated areas in the Lake Nipigon Basin Signature Site as well as providing general management direction.

Permitted uses in the recommended conservation reserves and parks are outlined in the Ontario's Living Legacy Strategy. General direction is provided for the following activities: timber harvesting, mineral exploration and mining, commercial hydro development, bait fishing, trapping, commercial fishing, hunting, angling, tourist operations, seasonal recreation camps, land disposition and road construction. Forestry, mining, hydroelectric development and sale of Crown land are not permitted uses in parks or conservation reserves. Other traditional activities such as angling, camping and hunting, are permitted as long as protected area values are not negatively impacted.

Enhanced management areas are a new land use category that evolved out of the Lands for Life process. They have been established to provide more detailed land use direction in areas of special features or values, while still allowing resource extraction activities to occur. The *Ontario's Living Legacy Land Use Strategy* further defines enhanced management areas and their intended management direction. There are six enhanced management areas within the Lake Nipigon Basin.

1.5 ABORIGINAL ASPECT OF THE LAKE NIPIGON BASIN

Archeological records of human presence in Northwestern Ontario date back to the Paleo-Indian period beginning about 9,000 years ago. The Paleo-Indians moved about in small nomadic groups using natural resources for food, clothing, and shelter. There is one known Paleo-Indian site within the Lake

Nipigon Basin in the Black Sturgeon Lake area (Danielson Collection, Ministry of Natural Resources 1987).

Three distinct pre-historic periods followed the Paleo-Indian period; the Archaic, Initial Woodland and Terminal Woodland Periods. During these prehistoric times, the Aboriginal developed extensive trade routes to transport trade materials for hundreds or even thousands of miles. These routes and the intimate knowledge the Aboriginal had of the landscape were the foundations upon which the historical fur trade was built.

Arrival of the Europeans in the 1600s and subsequent development of the Basin resulted in a change to the cultural landscape. Trading with Europeans and the interactions of the two cultures brought about changes in the Aboriginal nomadic lifestyle and led to the development of settled communities.

Currently, a number of Aboriginal groups/communities with a long history in the Lake Nipigon Basin, continue to pursue many of their traditional activities in the area. There are six First Nations; Biinjitiwaabik Zaaging Anishinaabek (Rocky Bay), Gull Bay, Animbiigoo Zaagi'igan Anishinaabek (Lake Nipigon Ojibway), Red Rock, Sand Point and Whitesand as well as two Aboriginal groups seeking official band status; Poplar Point and Poplar Point Ojibway, who live and/or carry out traditional activities in the Signature Site. Also within the Basin are three unpopulated reserves: MacIntyre Bay, Jackfish Island, and Parmacheene. The Aboriginal communities use these areas for cottaging and recreation. A portion of the Lake Nipigon Provincial Park has been deregulated to provide reserve lands for Sand Point First Nation.

The First Nations actively participate, to varying degrees, in resource-based industries including forestry, mineral exploration and mining, commercial fishing, hydroelectric power generation, and natural gas pipeline facilities within the Basin. Some First Nation and Aboriginal group members have developed proposals for tourism attractions in the Basin. Others are opposed to any further development in the study area.

Central to this Strategy is the recognition of the Aboriginal aspect of the Basin, the need to ensure protection of significant cultural sites, and the provision of economic opportunities to local Aboriginal communities. Nothing within this document is intended to affect Native land claims, Aboriginal or treaty rights.

1.6 PLANNING PROCESS

The *Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy* was developed through a standard planning process that consisted of the following steps and took approximately 2 1/2 years to complete starting in September 2000.

- Establishment of Terms of Reference
- Establishment of Objectives
- Collection of Background Data
- Invitation to Participate
- Analysis and Documentation of Background Information
- Public Review of Background Information and Objectives
- Preparation of Management Options
- Public Review of Management Options
- Analysis of Public Input on Management Options
- Preparation of a Preliminary Strategy
- Public Review of a Preliminary Strategy
- Review of Public Input and Production of Final Strategy
- Strategy Approval and Public Inspection

In addition to the steps listed above, numerous meetings with First Nations, tourist outfitters, anglers and hunters, municipalities, industry and the general public were held throughout the planning period to collect information, discuss ideas and resolve issues. A fifteen-member Project Team and eight-

member Steering Committee were established to carry out this project. The existing Nipigon Watershed Advisory Committee provided advice and input to the Project Team. Efforts to establish an Aboriginal Advisory Committee were unsuccessful, however, contact with First Nations was achieved through meetings, open houses, letters, phone calls and personal visits.

For a more detailed overview of the planning process and public consultation efforts, please refer to Appendix A.

1.7 PLANNING AREA DESCRIPTION

The Lake Nipigon Basin Signature Site contains seventeen land use designations that were established to capture the special characteristics of the area (Tables 1 & 2). The three land use categories in the Basin (Provincial Park, conservation reserve and enhanced management area) cover approximately 370,663.85 hectares of land and water. These areas plus General Use Areas, most notably Lake Nipigon, make up the defined planning area addressed by this strategy (Figure 1).

Mining claims that are situated within recommended protected areas have been designated as forest reserves. Should the mining claims be retired through normal processes, their area will be added to the park or conservation reserve.

1.7.1 REGIONAL SETTING AND INFRASTRUCTURE

Lake Nipigon is located in the northwest part of the Province of Ontario, within the Nipigon and Thunder Bay administrative districts of the Ministry of Natural Resources. It is situated approximately 170 kilometers northeast of Thunder Bay and 50 kilometers north of the town of Nipigon between 88 and 89 degrees longitude and between 49 degrees 15 minutes and 50 degrees 15 minutes latitude (Figure 2).

The Lake Nipigon Basin Signature Site connects with Wabakimi Provincial Park to the north and with Lake Superior and the Great Lakes Heritage Coast Signature Site to the

south. Provincial parks nearby include Sleeping Giant, Ouimet Canyon, Ruby Lake and Rainbow Falls.

Highway 17 runs across the south end of the Basin, traversing the Nipigon River at Nipigon. Adjacent to the west side of the basin, Highway 527 provides access to the communities of Armstrong and Gull Bay.

Highway 580 links the community of Beardmore to the east shore of Lake Nipigon. Highway 585 runs north along the west side of the Nipigon River to Pine Portage. At the south end of the lake near Orient Bay, Highway 11 follows the shoreline within the Nipigon Palisades Conservation Reserve for several kilometers before heading northeast to Beardmore. The Black Sturgeon Road and Auden Road are primary forest access roads that also provide access to the Lake Nipigon Basin Signature Site.

The City of Thunder Bay has an international airport and is the largest service center in the region. There are nine communities within or very close to the Lake Nipigon Basin: Beardmore (as part of the newly created Municipality of Greenstone), Macdiarmid, Armstrong, Nipigon, Red Rock, Gull Bay, Biinjitiwaabik Zaaging Anishinaabek (Rocky Bay), Whitesand and Red Rock (Lake Helen). The hamlet of Orient Bay is located at the south end of Pijitawabik Bay, approximately 10 kilometers south of Macdiarmid. The tiny settlements of Ferland and Mud River are

located north of Lake Nipigon on the rail line. Many of these communities provide essential services such as gas, shopping, groceries, banking, restaurants, hotels, and medical care. Other population centers in this region of Northwestern Ontario include Rosspoint, Terrace Bay, Schreiber, Geraldton, Longlac, Jellicoe, Dorion, Hurkett and Pass Lake.

Gull Bay and Biinjitiwaabik Zaaging Anishinaabek are the only occupied Indian Reserves located within the Basin. The Red Rock First Nation community is located just south of the Basin. The Whitesand Reserve is located at Armstrong.

The Canadian National Railway (CNR) main line crosses the Basin north of Lake Nipigon. A CNR station at Armstrong offers a passenger drop off and pick up service. Pickup service is available upon request at isolated railway communities such as Mud River and Ferland at the north end of the lake. A second CNR Line travels through the southern portion of the Basin and crosses Pijitawabik Bay.

There are three hydroelectric power generating facilities on the Nipigon River; Cameron Falls Dam, Alexander Dam and Pine Portage Dam. There is also the Ogoki Diversion located on the Ogoki River, north of the Basin, which serves to divert waters normally flowing to Hudson Bay, south to the Great Lakes. Finally, there is the Namewaminikan Dam located on the Namewaminikan River, just outside the study area.

TABLE 1: LAKE NIPIGON BASIN – EXISTING PROTECTED AREAS

PARK NAME	CLASSIFICATION	AREA (ha)
Lake Nipigon	Natural Environment	918
Livingstone Point	Nature Reserve	1,800
Windigo Bay	Nature Reserve	8,378
West Bay	Nature Reserve	1,120
Kabitotikwia River	Nature Reserve	1,965
TOTAL EXISTING PROVINCIAL PARK AREA		14,181

TABLE 2: LAKE NIPIGON BASIN – NEW DESIGNATIONS

SITE NAME	CLASSIFICATION/CATEGORY	AREA (ha)
Conservation Reserves		
Lake Nipigon	N/A	177,228.6
Nipigon Palisades	N/A	11,582.1
Nipigon River	N/A	2,700.0
Total Area of Conservation Reserves		191,510.7
Enhanced Management Areas		
South Lake Nipigon	Remote Access	24,568.1
Orient Bay Peninsula	Recreation	16,166.2
Gull Bay	Recreation	209.2
West Lake Nipigon	Recreation	42,272.4
Pikitigushi	Wildlife	36,062.5
Lake Nipigon - Beardmore	Recreation	13,091.4
Total Area of Enhanced Management Areas		132,369.8
Provincial Parks		
Whitesand River	Waterway Class	11,353.4
Kopka River Addition	Waterway Class	11,324.8
Black Sturgeon River	Waterway Class	24,105.1
Total Area of New Provincial Parks		46,783.3
Total Area of Proposed New Designations		370,663.8 ha

Note: Area figures are calculated using the best current information, but should be considered estimates for planning and comparative purposes only. The area of Enhanced Management Areas may vary according to map scale. The area of proposed provincial parks and conservation reserves are subject to change depending on map scale, removal of forest reserves and private land, and other boundary adjustments required for regulation.

There is a gas pipeline operated by Trans Canada Pipe Lines, which traverses the Black Sturgeon River Provincial Park and the Nipigon River and Nipigon Palisades Conservation Reserves.

The islands and surrounding shorelands of Lake Nipigon, the Black Sturgeon and Nipigon River areas are almost all Crown-owned. Private land exists in the Lake Nipigon-Beardmore Enhanced Management Area, in the communities of Rocky Bay, Macdiarmid and Orient Bay. There are also 19 privately owned cottages along the Lake Nipigon

shoreline in Eva Township as well as some mining patents and leases. Private land can also be found in Ledger and Purdom Townships, close to and in some cases, within the boundaries of the Nipigon Palisades and Nipigon River Conservation Reserves. Other private land within the study area includes the Indian Reserves of Gull Bay, McIntyre Bay and Jackfish Island. Private cottage lots exist on McKenzie, Clearwater and Waweig Lakes. There is also a private land holding on the north shore of Lake Nipigon in Windigo Bay. A Hudson Bay trading post was once located here.

There are over 100 active mining claims within the study area. Many of these claims are grouped along major fault zones. On the west side of the lake, these claims are concentrated around Black Sturgeon Lake, Chief Bay, English Bay, Havoc Lake and Pillar Lake. On the east side of the Basin, claims are concentrated around the Beardmore-Geraldton Greenstone Belt.

1.7.2 ACCESS

The Nipigon River Conservation Reserve can be easily accessed via Highway 585 (Cameron Falls Road). Currently there are a total of 12 access points on Crown, private and leased land along the Nipigon River. Highway 11 runs right through the Nipigon Palisades Conservation Reserve, providing easy access. Lake Nipigon is best accessed on the southeast side at the municipally operated Poplar Lodge Campground or High Hill Harbour Marina; via private access points in Orient Bay; or at the South Bay public access point. Other access to Lake Nipigon includes the Poshkokagan River access, Chief Bay access, Kings Landing (Gull Bay), Pishidgi Lake via Wabinoosh River, Humboldt Bay and Ombabika access and river access from the rail line down the Pikitigushi, Little Jackfish and Whitesand Rivers. Black Sturgeon River is accessed at a number of locations from the Black Sturgeon road and associated secondary roads.

1.7.3 STUDY AREA HIGHLIGHTS

Lake Nipigon Basin can be described as a major natural crossroads, where geological, ecological, hydrological and recreational attributes come together in a hub of significant natural importance. Dominating this landscape is Lake Nipigon. At 484,800 hectares in size, it is the 38th largest lake in the world, the largest body of water wholly within the province of Ontario and the largest headwater to the Great Lakes St. Lawrence waterway.

The Lake Nipigon Basin represents the southern limit of the retreating range of woodland caribou in Ontario. This species is listed as threatened in Canada. The islands of

Lake Nipigon provide critical caribou calving habitat. Migration corridors pass through several portions of the Basin. Other wildlife of note includes the osprey and great grey owl as well as the American white pelican and bald eagle, both of which are endangered in Ontario.

Lake Nipigon supports 46 species of fish, two of which have been listed as threatened in Canada, the shortjaw cisco and the deepwater sculpin. Both the sport fishery and commercial fishery are considered to be world class. The Nipigon River also has a reputation for its outstanding brook trout fishery.

An impressive array of geological, landscape and vegetation assemblages can be found in the Basin. One of the most dramatic geological features are the diabase sills which form towering cliff faces along parts of the Lake Nipigon shoreline and islands and in the Nipigon Palisades Conservation Reserve. The north and south facing talus slopes of these cliff features harbour plant species more commonly found in arctic or more southerly environments.

A diversity of outdoor recreation activities can be enjoyed in the Lake Nipigon Basin including canoeing, kayaking, camping, angling, rock climbing, wildlife viewing, hiking, boating, hunting, cycling and more. The study area provides an exceptional wilderness environment, with dramatic scenery, ample fish and wildlife and clean, clear water.

Detailed background information relating to the Lake Nipigon Basin can be found in Appendix B.

2 LAND USE OBJECTIVES AND ISSUES

2.1 ESTABLISHING STRATEGY OBJECTIVES

The Project Team established the land use objectives for the Lake Nipigon Basin Signature Site early in the planning process and published them in the Lake Nipigon Basin Background Document and Lake Nipigon Basin Signature Site Management Options Document. These objectives have since been revised based on public review and input, new information and government direction. Objectives have been defined to address key topics, namely Aboriginal communities, access, Crown land use, cultural heritage, fisheries, wildlife, forestry, mining, tourism and recreation, vegetation, water resources and parks and protected areas. Each of these topics may have one or more objectives associated with it.

2.1.1 ABORIGINAL COMMUNITIES

- To ensure that Aboriginal and treaty rights, as identified under the Canadian Constitution, are recognized and respected throughout the planning process
- To ensure local Aboriginal communities benefit from economic opportunities generated through the planning and management of the Lake Nipigon Basin; and
- To encourage active involvement by the communities of Red Rock, Biinjitiwaabik Zaaging Anishinaabek (Rocky Bay), Gull Bay, Animibiigoo Zaagi'igan Anishinaabek (Lake Nipigon Ojibway), Sand Point, Poplar Point, Poplar Point Ojibway, and Whitesand throughout the planning process

2.1.2 ACCESS

- To maintain the remote and inaccessible character of the northern half of Lake Nipigon
- To recognize the Basin's scenic, ecological and land use values when considering the establishment of any access roads to existing or new development

- To work toward the establishment of a network of good quality, strategically located access points around the Lake Nipigon Basin to facilitate outdoor recreation, tourism and traditional use of the area; and
- To review current access points and roads to determine whether they should be removed, improved or left status quo

2.1.3 CROWN LAND USE

- To guide the development and wise use of Crown land within the Basin (e.g., remote camping, buildings, trail use)
- To encourage low impact camping; and
- To develop management strategies for Crown land use that ensure the protection and sustainability of the Basin's natural resources

2.1.4 FORESTRY AND MINING

- To manage forestry within the enhanced management areas to ensure there is no reduction in normal wood supply and only in exceptional cases will wood cost be affected
- To develop clear, defined land use and resource management direction for forestry activities within the six enhanced management areas, to protect identified aesthetic, recreational and ecological values and adjacent protected areas; and
- To encourage mineral exploration and development activities within the six enhanced management areas that recognize and maintain identified aesthetic, recreational and ecological values and adjacent protected areas

2.1.5 TOURISM AND RECREATION

- To consider the development of new tourism (e.g. cottage lots, lodge, interpretive signage) and recreation (e.g. trails, campsite development) opportunities in the southern portion of the Basin; and

- To ensure any tourism/recreation development and activities will occur such that the current capacity of the supporting natural resource base is not exceeded, and the current high quality of the Basin ecosystem is maintained (e.g. emphasizing non-consumptive tourism and recreation opportunities)

2.1.6 FISHERIES

- To protect, rehabilitate and sustain aquatic ecosystems and populations within the Basin, while allowing for the benefits of Aboriginal subsistence, sport, commercial and bait fishing
- To protect and rehabilitate fish habitat (e.g., spawning beds, upwellings, nursery areas) to ensure sustainability of healthy fish communities
- To assist in preventing additional species from becoming endangered or threatened in Ontario while actively improving, where applicable, the status of existing endangered or threatened species (e.g., cisco species, sculpin, northern brook lamprey)
- To manage for a sustainable, world-class sport fishery
- To manage for a sustainable, world-class commercial fishery; and
- To foster partnerships with Aboriginal and non-Aboriginal communities, Ontario Power Generation and interest groups for the achievement of fisheries habitat management, data collection and public education

2.1.7 WILDLIFE

- To protect and sustain wildlife habitat and populations within the Basin while allowing for the beneficial use of wildlife (e.g., viewing, photography, hunting, trapping)
- To seek to increase hunting opportunities in the Basin for example, hunting versus no hunting zones and primitive weapon versus modern weapon hunts

- To promote opportunities for non-consumptive uses of wildlife (nature appreciation, interpretation, education, scientific study)
- To assist in preventing additional species from becoming endangered or threatened in Ontario while actively improving, where applicable, the status of existing endangered or threatened species (e.g., woodland caribou, American white pelican and peregrine falcon)
- To protect, rehabilitate and create wildlife habitat to achieve sustainable and diverse wildlife populations and to ensure environmental quality and ecosystem integrity; and
- To promote partnerships with Aboriginal and non-Aboriginal communities, and interest groups for the achievement of wildlife habitat management, data collection and public education

2.1.8 VEGETATION

- To determine, using local knowledge, science and modeling tools, the appropriate means to maintain a natural variety of vegetative cover (e.g., diversity of age class, forest type, habitat type); and
- To identify and protect rare and disjunct plant species and communities

2.1.9 CULTURAL HERITAGE

- To identify, document and protect the cultural and historical values of the Lake Nipigon Basin; and
- To encourage the development and promotion of facilities, initiatives and partnerships that further the conservation, interpretation and understanding of the Lake Nipigon Basin's cultural heritage

2.1.10 WATER RESOURCES

- To improve water quality and ensure that no degradation of water quality occurs as a result of tourism, recreational or industrial development in the Basin

- To ensure that the Water Management Plan for Lake Nipigon and the Nipigon River is adhered to and if possible, improved; and
- To ensure that water management on the Nipigon watershed is conducted in concert with water management for the Great Lakes

2.1.11 PROVINCIAL PARKS AND CONSERVATION RESERVES

- To review existing parks within the Lake Nipigon Basin in terms of their classification and boundaries to ensure Ontario Parks objectives are being met; and
- To ensure that decisions regarding permitted uses/development/activities in existing and new provincial parks and conservation reserves comply with *Ontario's Living Legacy Land Use Strategy* and provincial policies for parks and conservation reserves

2.2 PLANNING ISSUES

Issues relating to the management of the Lake Nipigon Basin were compiled via a number of mechanisms. Some were identified as a result of ongoing management and regulation of resource use in the Lake Nipigon and Nipigon River area – e.g. sustaining the fish resource, protecting caribou and managing the impacts of Crown land use. Additional issues evolved out of Ontario's Living Legacy and the land use objectives identified for the Lake Nipigon Basin in the Ontario's Living Legacy Land Use Strategy. Finally, interest groups, advisory committees and members of the public brought forth other issues during the development of this document.

Issues that could not be addressed through this initiative may be recommended for future consideration. The identified issues (listed in the appendices) provided direction for the development of the strategy objectives, and opened the door to a broad range of management opportunities that will result in the improved management, protection and wise use of the Lake Nipigon Basin Signature Site.

The main issues are summarized below. For a detailed list of identified issues, please refer to Appendix C.

Aboriginal Interests

- Aboriginal and treaty rights
- Conflicting objectives among communities

Access to Lake Nipigon

- Northern remoteness
- Improved facilities versus status quo Crown Land Use
- Need for more information
- Environmental impacts
- Introduction of exotic species

Forest Management and Mining

- Operations in enhanced management areas

Wildlife

- Protecting species at risk
- Need for more information
- Caribou
- Hunting on islands

Fish and Fisheries

- Managing sport and commercial harvest
- Need for more information

Tourism

- Development versus no development
- Managing cruiser/day charter operations

Cottaging

- Development versus no development

Water Resources

- Impacts of draw-down
- Need for more information
- Degradation in Little Jackfish River
- Namewaminikan River Dam

3 LAND USE DIRECTION

3.1 LAND USE AND RESOURCE MANAGEMENT DIRECTION

The land use and resource management direction for the Lake Nipigon Basin Signature Site is outlined in Chapter 1, Section 3 and in Chapters 2 to 12. Public input, Government policy and mandate, information and science all played a part in determining the management direction that follows. The direction outlined within this strategy document is based on the various options presented in the *Lake Nipigon Basin Signature Site Management Options* document (Dec 2001), and strives to ensure the protection and sustainability of the Basin ecosystem while meeting the needs of the public and stakeholder groups. This approach has resulted in a combination of protection and development oriented direction. Protection policies are focused mainly on rare, threatened and endangered plant and animal species as well as ensuring sustainability of significant resources (e.g., fishery, wildlife, recreation, and tourism). Development direction encourages nodal development, focused access and low impact recreational development (e.g., trails, and campsites).

There are four land use categories addressed within this document: conservation reserves, provincial parks, enhanced management areas and general use areas. Conservation reserves and provincial parks are protected area designations and are regulated under the *Public Lands Act* and *Provincial Parks Act* respectively. These protected areas contribute to the overall objectives of Ontario's Parks and Protected Areas System. Enhanced management areas are a new land use category governed by the policy direction outlined in *Ontario's Living Legacy Land Use Strategy*. These areas have been established in order to provide more detailed land use direction in areas of special features or values. Commercial resource activities (e.g., forest management, mineral exploration, fur

harvesting) will continue within enhanced management areas.

Activities that occur in general use areas within and adjacent to the study area, may influence future land use and resource management activities that occur within the other designations. For example, fire management, forestry and mining activities adjacent to protected areas may have an impact on values within the protected areas. Lake Nipigon is the most significant general use area (except for McIntyre, Humboldt, West and South Bays which are part of the Lake Nipigon Conservation Reserve) within the Lake Nipigon Basin study area.

A fifth category of land use is forest reserve. These are mining claims or leases that were in existence prior to Ontario's Living Legacy, and are located within the boundaries of recommended parks or conservation reserves. Policies for forest reserves are similar to the policies for new conservation reserves except that mineral exploration, mining and related access is permitted. Forest reserves exist in the Black Sturgeon River Provincial Park, Kopka River Provincial Park Addition and the Lake Nipigon Conservation Reserve. When a claim or lease is retired through normal processes, the intent is to add that area to the park or conservation reserve. Land use direction for forest reserves will not be discussed separately in this document, as apart from the provisions for mineral exploration and mining, the land use intent will essentially be the same as for the protected area within which the mining tenure is located.

3.1.1 BOUNDARIES

Changes have been made to the boundaries of some of the conservation reserves, provincial parks and enhanced management areas within the Signature Site, from the boundaries originally identified in the *Ontario's Living Legacy Land Use Strategy*, to better capture environmental and recreational values. These proposed changes were presented to the public at open houses and in the *Lake Nipigon Basin Signature Site Management Options* document published in December

2001. Public input indicated that on average 49% of the public supported the boundary adjustments for the conservation reserves and enhanced management areas, 10% disagreed, 25% were unsure and 16% did not respond. With regard to the park boundary adjustments, 59% agreed with the Black Sturgeon Park boundary adjustment, and 80% agreed with the Kopka River boundary adjustments. The conservation reserve and provincial park boundaries are regulated under the *Public Lands Act* and *Provincial Parks Act* respectively. The enhanced management area boundaries form part of the land use policy direction for these areas. The land use and resource management direction presented in Chapter 1 Section 3 and Chapters 2 to 12 and the maps contained therein, reflect the boundary changes which are outlined below:

- a) Valuable caribou winter habitat has been added to the Pikitigushi Enhanced Management Area (a wildlife enhanced management area) and area that has lesser value as caribou winter habitat has been removed. This boundary adjustment helps to better meet the intent of this enhanced management area, which is to protect and enhance caribou habitat. The new area, 36,062.53 hectares, is smaller than that originally defined in the *Ontario's Living Legacy Land Use Strategy* by about 4,489 hectares.
- b) The boundary of the Nipigon Palisades Conservation Reserve has been extended to capture the entire Cash Creek Gorge, a prominent geological feature in the area. This addition is 197 hectares in size.
- c) A portion of the Lake Nipigon Waters Conservation Reserve including Humboldt, West, McIntyre and South Bays, has been amalgamated with the Lake Nipigon Conservation Reserve. This includes the Lake Nipigon islands and shore lands and is called the Lake Nipigon Conservation Reserve.
- d) A section of land on the northwest side of the Nipigon River has been added into the Nipigon River Conservation Reserve to

capture wetland features and to protect scenic landscapes. This adjustment adds approximately 167 hectares to the protected area.

- e) The boundary of the South Lake Nipigon Enhanced Management Area has been adjusted to exclude the Black Sturgeon Road, (a primary forest access road) since the intent is to manage this area for remote access. In addition, the Orient Bay Peninsula has been established as a separate recreation category enhanced management area to reflect the intent for recreation rather than remote access.
- f) The northern boundaries of Black Sturgeon River Provincial Park have been adjusted to include the mouth of the river and a portion of Black Sturgeon Bay in Lake Nipigon. This boundary change will include the glacial spillway of Glacial Lake Kelvin and surround the portage along the popular canoe route connecting Black Sturgeon Lake to Lake Nipigon (798.68 hectares). This change will mean converting what has already been designated as conservation reserve to a provincial park designation
- g) Wabinoash Bay shoreline (200 metres) and the bed of the bay, the east shore watershed of Wabinoash Lake and the Prisoner of War camp area, have all been added to the Kopka River Provincial Park Addition. This addition involves converting conservation reserve designation to park designation. Incorporation of the Prisoner of War Camp will involve converting enhanced management area to park. These additions include 7,446 hectares of new park area.
- h) A section of the Lake Nipigon – Beardmore Enhanced Management Area, approximately 2,323 hectares in size and located adjacent to the Rocky Bay Indian Reserve, has been removed as it is separated from the lake shoreline by the Indian reserve and contributes little to the recreational objectives for the enhanced management area.

3.1.2 LEVELS OF MANAGEMENT DIRECTION

The *Ecological Land Use and Resource Management Strategy* is a planning document that provides management direction for land and resource use on Crown lands in the planning area. This direction is provided at two levels. Chapter 1, Section 3 deals with the overall policy and land use direction for the Lake Nipigon Basin with regard to specific subject areas such as access, fisheries, tourism, etc., and is intended to provide a context for the more detailed management direction found in Chapters 2 to 12. Not all designated areas have received the same level of detail in this section. For example, the 5 existing provincial parks on Lake Nipigon, which have been subject to previous planning initiatives (e.g., interim management statements, park management plans) are usually referenced only when new land use direction is being proposed for those areas.

Chapters 2 to 12 provide additional, detailed resource management direction for each designated area (conservation reserve, park, enhanced management area) in the form of stand-alone resource management documents. Both levels of direction must be considered in making management decisions for the planning area. Direction respecting general use areas will be referenced in relation to the specific resource area or designation to which such direction might apply.

3.1.3 IMPLEMENTATION

The *Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy* has been developed within the context and policy direction of the *Ontario's Living Legacy Land Use Strategy* and incorporates up-to-date background information (e.g., life science studies, geological inventories) and public consultation. The land use direction outlined in this strategy provides overall intent and direction for land use, resource management and operational activities on Crown lands within the Lake Nipigon Basin Signature Site.

This strategy replaces the *Lake Nipigon Integrated Resource Management Plan* and

will result in refinements to the area specific policies in the *Ontario's Living Legacy Land Use Strategy*. Local land use direction from the Nipigon District Land Use Guidelines and the Thunder Bay District Land Use Guidelines is also replaced by the strategy.

Any new or revised resource or land use plans for Crown lands and Crown resources must be consistent with the Strategy direction. The strategy may also require modifications to the direction contained in existing resource management documents such as fisheries management plans and fire management strategies. These documents will be amended where required to incorporate the new direction. Direction provided herein regarding resource management in the enhanced management areas will be incorporated into forest management plans during the next planning cycle. Where required, the Nipigon District and Thunder Bay District Compliance Plans will be amended to meet the objectives of this strategy (e.g., increased enforcement of the 21-day Crown land camping rule).

Planning is an iterative and adaptive process. There is no intent to carry out a comprehensive review of the *Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy* at any prescribed interval. Using adaptive management, the land use and resource management policies in this document will be kept current through periodic amendments resulting from changes in government policy, new resource information or in response to public need. Future reviews of the park management plans contained within this strategy will occur as necessary.

Activities carried out or sanctioned by the Ministry of Natural Resources as a result of the direction contained within this Strategy document will be subject to the requirements of the *Environmental Assessment Act* and other applicable legislation.

3.1.4 STRATEGY AMENDMENT

Circumstances may change which could require that this strategy document be amended. Proposed amendments must not alter the overall intent of the *Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy*. An amendment to the strategy may be requested at any time and the Northwest Regional Director and Managing Director of Ontario Parks will decide whether or not to consider it. Requests for amendments must have a basis in fact, demonstrably relate to the scope of the strategy, and respond to changing resource conditions, new information, changing government policies or public need. The Ministry of Natural Resources also has the authority to initiate amendments in response to new information or changed conditions.

Amendments will be classified as either minor or major. Minor amendments are those changes that do not have a negative effect on the public, adjacent landowners or the environment and are generally administrative in nature. Minor amendments will be approved by the Nipigon and Thunder Bay District Managers and Ontario Parks Northwest Zone Manager and will not normally be subject to public consultation.

Major amendments have a significant social, economic and/or environmental impact. Major amendments will be reviewed by the Ministry of Natural Resources District Manager and submitted to the Regional Director and Managing Director of Ontario Parks for approval. Public consultation will occur for all major amendments and notice of all major amendments will be posted on the *Environmental Bill of Rights* electronic registry.

3.2 LAND USE DIRECTION

The land use direction for the Lake Nipigon Basin Signature Site is presented by topic, in Section 3.2.1 to Section 3.2.9. The management direction for each subject area is defined as it pertains to the conservation

reserves, provincial parks and enhanced management areas within the Signature Site.

3.2.1 ACCESS

Existing access on Lake Nipigon is a combination of municipal, private, official and unofficial public sites. Some sites are well developed with boat ramps, parking, docks and garbage facilities, while others are nothing more than a rough bush road to a clearing at the water's edge. The northern half of Lake Nipigon has remained relatively remote, which has contributed to the retention of its pristine, wilderness attributes.

The long-term land use intent is to consolidate access to a fewer number of good quality access points in locations that can support human use. Sites suffering from environmental degradation due to impacts from human use will be closed. Other existing sites will remain open with the intent of maintaining or improving certain access points while others will be allowed to abandon naturally. Use of existing private and municipal access facilities will be promoted.

3.2.1.1 Direction

Lake Nipigon Conservation Reserve, Provincial Parks and Enhanced Management Areas

The remote and inaccessible nature of the northern half of Lake Nipigon will be actively maintained. No new access to the shore of Lake Nipigon will be permitted north of Mungo Park Point on the east shore and north of Nazoteka Point on the west shore. Existing access at Ombabika and Humboldt Bays will not be promoted or maintained and will be left to deteriorate naturally to support the remote and inaccessible nature of the northern half of Lake Nipigon. Existing access to the north end of the lake via water routes (Pikitigushi River, Little Jackfish River, Pishidgi-Kopka Rivers, Whitesand River) will be permitted. The access road to the Healing Lodge in Windigo Bay Provincial Park will not be permitted to extend within 1000 metres of the water's edge. No improvements will be

permitted to the old tramway trail leading from Ferland to the north shore of Lake Nipigon.

As identified in *Ontario's Living Legacy Land Use Strategy*, shoreline facilities and access will be encouraged in the Gull Bay Enhanced Management Area. A partnership opportunity with Gull Bay First Nation will be pursued for the development of access facilities in the Gull Bay Enhanced Management Area. This facility could include docking, boat launching, garbage, washroom and camping facilities and would be promoted as the prime access to western Lake Nipigon. West shore access to Lake Nipigon via the Pishidgi Lake access point located in Kopka River Provincial Park will be permitted to continue subject to future park management planning. It is recommended that partnership opportunities for improvements at Pishidgi access, such as docking, boat launch and campsites be investigated during future park management planning for Kopka River Provincial Park.

Access will be promoted in a balanced fashion around the southern half of Lake Nipigon (south of Mungo Park and Nazoteka Points) with the intent of focusing access to a fewer number of good quality access points. Well-developed access already exists on the east side of the lake in the Lake Nipigon - Beardmore Enhanced Management Area at the municipally operated High Hill Harbour and Poplar Lodge Campground. These access points will continue to be supported and promoted in information brochures, maps and signage that is developed for the signature site. In addition, private access exists in Orient Bay at a number of tourist facilities, and in Pijitawabik Bay at the Biinjitiwaabik Zaaging Anishinaabek and Sand Point First Nation Reserves. Use of these existing, private access points to Lake Nipigon will also be promoted.

The old South Bay access point, located at the bottom tip of South Bay, will be physically closed and the site restored to protect sensitive fish habitat. The newly established South Bay access point will be promoted as the key access point to the south end of the lake. Partnership opportunities for the

improvement and expansion of this facility will be investigated. Possible improvement features could include washroom and garbage facilities, improved docking and parking. The Pine Portage access facility located on the Ontario Power Generation Lease will be permitted to continue provided the leaseholder is in agreement, but will not be promoted.

In the short term, the Poshkokagan River access into Chief Bay will remain open but will not be maintained. Biological information will be collected and analyzed to determine the need for a no wake zone or access closure to protect sensitive wetland features. If research findings indicate that the site can remain open with a no wake zone/speed limit/horsepower limit in place, then the site will remain open and facilities may be put in place through partnerships to ensure environmental and health concerns are addressed (e.g. vault toilets, garbage receptacle). Should the site be closed in the future, consideration will be given to improving the Chief Bay access at the northern end of the bay. Future developments at Chief Bay access could include road improvements, boat launch, parking and docking facilities.

Road development will be limited in the West Lake Nipigon Enhanced Management Area and South Lake Nipigon Enhanced Management Area to protect headwater streams and wilderness values. Access for forestry and mineral exploration activity will be developed to minimum standards, closed to public travel and abandoned after use. No new permanent access will be permitted.

Longer-term access to the Orient Bay Peninsula Enhanced Management Area for forestry operations will be permitted. Vehicle access to the peninsula by authorized commercial users (e.g. prospectors, trappers, tourist outfitters) is permitted, but public access into the area will be restricted to the use of off-road vehicles (e.g., ATV's, snowmachines, etc).

Any future road development proposals to access existing or future tourism/recreation facilities in the Lake Nipigon - Beardmore

Enhanced Management Area will be subject to careful consideration of potential impacts on environmental, scenic and cultural values. Otherwise, access developed for forestry purposes within one kilometre of the shoreline, will be developed to minimum standards (not necessarily winter roads only) and will be abandoned after forest harvesting and renewal activities are complete. Closing roads or portions of roads to public travel may be considered, through the Forest Management Plan process, where required to stop potential undesirable access to the shoreline from occurring.

Road development in the Pikitigushi Enhanced Management Area will be governed by the need to protect caribou winter habitat and to enhance caribou movement between Lake Nipigon, Wabakimi Provincial Park and the Ogoki Lake area. This direction will be used to determine the location of permanent and temporary forest access roads as well as to identify the requirement to remove roads that may impact caribou.

There is no connecting road traversing the north end of Lake Nipigon to link western and eastern forest road systems. There is a concern that a road link across the north end of Lake Nipigon will compromise the long-term sustainability of the woodland caribou population, an already threatened species, as well as jeopardize the remoteness of northern Lake Nipigon.

The Lake Nipigon area is strategically important to long-term woodland caribou recovery due to its high quality and quantity of caribou habitat and its location near the southern limit of continuous caribou range.

The Ontario Woodland Caribou Recovery Team has identified that a connecting road link across this northern area will further fragment the Nipigon landscape and potentially isolate the Lake Nipigon forest-dwelling woodland caribou population. This may result in local extirpation and continued range loss for this species.

A precautionary approach must be taken. Any consideration of a future road link, (through

forest management planning or other management planning processes), will require a detailed analysis of all ecological, economic, environmental and social effects within the affected area. The results of such an analysis may require an amendment to the Crown Land Use Atlas. The input of the Ontario Woodland Caribou Recovery Team will be sought in any process (i.e., reviewing road proposals, providing input) and in developing related direction and guidelines for this area.

Nipigon River and Nipigon Palisades Conservation Reserves

The Nipigon River is easily accessed via Highway 585. There are currently 5 Ministry of Natural Resources access points and 7 private (Ontario Power Generation) access points along the Nipigon River. The intent is to promote the Nipigon River as mainly a day use area. This approach will address two issues 1) the environmental degradation resulting from multiple access points along the river and 2) the use of access points for camping by relatively few individuals to the exclusion of others who want to use them for access. The nearness of the river to the community of Nipigon, hotels and private campgrounds as well as the existence of other Crown land camping opportunities in close proximity to Nipigon make this a viable option. This also provides Red Rock First Nation with the opportunity of developing/promoting their lands at Parmacheene as an access facility and/or campground.

No new access will be created to the Nipigon River. Day use facilities will be improved at Birch Point and Alexander Landing through partnerships. Improvements may include vault toilets, picnic tables and garbage facilities. No overnight camping will be permitted along the roadside within the conservation reserve or at Birch Point or Alexander Landing access points. Crown land camping will continue to be permitted but not promoted or expanded at North and South Male Creek and the North end of Jessie Lake access points. Ontario Power Generation will be asked to support this land use approach on their leased and private lands on the Nipigon River.

One or more safe public parking lots with associated interpretative facilities and hiking trails will be developed within the Nipigon Palisades Conservation Reserve to facilitate ice/rock climbing, hiking and viewing opportunities. The Ministry of Transportation will be consulted in the planning phase and partners will be required to ensure long term maintenance. In addition, improved access to allow for increased fishing opportunities in the Nipigon Palisades Conservation Reserve will be investigated.

3.2.2 CROWN LAND USE

Crown land use includes the array of outdoor activities undertaken on Crown land such as camping, hiking, berry picking, swimming, picnicking, boating, hunting, angling and snowmobiling. Crown land use also includes construction of facilities on Crown land for certain purposes (e.g., trap cabins, commercial fish cabins, recreation camps) authorized through land use permit, lease or letters of authority. The Lake Nipigon Basin offers opportunities to enjoy all of these things in an area with exceptional scenic and wilderness qualities. Crown land use can have a negative impact on the environment if not managed properly. Some of these impacts include soil compaction, improper disposal of grey water and human waste, destruction of vegetation, litter, damage to sensitive habitats (e.g., spawning beds, shorebird-nesting sites), erosion of shorelines and disruption of critical fauna (e.g., caribou, nesting eagles, pelicans). The overall land use direction for the Lake Nipigon Basin is to allow for the continuation of Crown land use activities without negatively impacting the ecological, cultural or wilderness values of the Basin.

3.2.2.1 Direction

Lake Nipigon Conservation Reserve and Provincial Parks

Within the Lake Nipigon Conservation Reserve and the provincial parks, areas easily impacted by human use and activity (e.g., caribou calving islands, sensitive bird nesting sites, critical fish habitat, culturally significant areas) will be protected through specific zoning and

governed by a no-use or limited-use policy. In provincial parks, sensitive features are protected through nature reserve zones or wilderness zones. In conservation reserves, areas containing sensitive features will be zoned for limited or no use under the Public Lands Act. A public education initiative will be undertaken to inform the public of the need to use the lands and waters of the area in a sensitive manner and to advise users about any specific restrictions. This could include the development of brochures and educational signage at key access points. Private sector partners (e.g., naturalist groups, tourist operators, angling groups) and local municipalities will be approached to participate in this endeavor. Traditional Crown land activities are permitted in the conservation reserves except in identified sensitive areas. Provincial parks policy will apply in the parks with regard to permitted activities.

Structures associated with Crown land uses within Lake Nipigon Conservation Reserve (e.g., remote recreation camps, trapline cabins, commercial fish cabins, etc.) will be permitted to remain provided they are necessary, are being used for their designated purpose and are not negatively impacting on values. Owners of structures that do not meet these criteria will be required to remove or relocate them.

Crown land disposition for large tourism structures (e.g., lodge), remote recreation camps or outpost camps will not occur within the Lake Nipigon Conservation Reserve. Issuance of land use permits for a small number of low impact tourism developments with a Native cultural theme may be considered on islands south of Kelvin Island or on shore land south of Mungo Park Point to the east and Nazoteka Point to the west. Land use permits will only be considered for activities not in conflict with identified values (e.g., caribou calving island, eagle nest, pelican colony) or in conflict with traditional users.

Remote campsites on islands and shore lands within the Lake Nipigon Conservation Reserve, which can withstand repeated use

and are not in conflict with caribou calving or other significant natural features, will be identified and mapped. Partnerships will be sought with tourism and outdoor recreation groups to monitor use and maintain basic facilities at these locations, such as box privies, fire pits, tent pads and signage. Camping is not permitted within nature reserve zones in provincial parks.

An increase in the enforcement of the 21-day Crown land camping rule will be implemented to address current issues around extended Crown land camping at public access points to reduce related environmental impacts, and to ensure more people have an opportunity to enjoy the area. Means to achieve this include educational brochures, signage at strategic locations and increased enforcement efforts. To further promote responsible Crown land use, a Basin wide campsite and access point cleanup involving volunteers, local communities, and stakeholders will be instituted.

During the development of management options for the Lake Nipigon Basin, green zones (areas of Crown land where non-residents are prohibited from camping) were discussed as a possible management tool. Ministry of Natural Resources policy identifies that a green zone may be established through regulation where Crown land camping by non-residents creates or contributes significantly to: congested camping, competition for resources or conflict between residents and non-residents, and/or impacts on fisheries resources. Green zones may also be established in areas containing a high concentration of tourist facilities, which face significant competition from Crown land camping by non-residents, and it is apparent that there would be increased private sector benefits if non-resident camping were regulated. It has been determined that none of these problem situations currently exist in the Basin. There may be an option to implement green zones in the future, through amendment to the strategy, should the policy conditions be met.

Nipigon River and Nipigon Palisades Conservation Reserves

The Nipigon River and Nipigon Palisades are well-accessed areas (Highways 11 and 585), with many opportunities for Crown land recreation, such as canoeing, boating, picnicking, angling, hiking, nature appreciation and rock/ice climbing in the Palisades. These activities will be encouraged in a manner that does not jeopardize any significant earth, life or cultural values. Areas of high sensitivity will be identified and managed to prevent negative impact to these sites (e.g., no-use areas). Use will be directed to existing and future approved trail, access and viewing facilities. Current Crown land activities that are found to be negatively impacting the environment in specific locations will be discouraged through management action.

Birch Point and Alexander Landing access points along the Nipigon River will be managed for day use only, no Crown land camping will be permitted at these locations. This will reduce the environmental impacts resulting from Crown land camping activity occurring at multiple sites and will allow more people to enjoy the area. Crown land camping will continue to be permitted but not promoted or expanded at North and South Male Creek and North end of Jessie Lake Access Points. Remote tent camping (not road accessible) will be permitted within the Nipigon River Conservation Reserve. Crown land camping along the roadside within the conservation reserve will not be permitted.

Enhanced Management Areas

Non-consumptive tourism development within the West Lake Nipigon Enhanced Management Area will be encouraged such as canoeing, camping, hiking and nature appreciation. Potential for the development of canoe routes (e.g., campsites, fire rings, portages, box privies) or trails among the interconnecting lakes within the West Lake Nipigon Enhanced Management Area will be investigated depending on the availability of funding and potential for partnerships. Opportunities for the operation of non-

consumptive tourist facilities, in West Lake Nipigon Enhanced Management Area, can be considered as long as a strong business case and environmental sustainability can be demonstrated.

The Pikitigushi Enhanced Management Area has been established to ensure that woodland caribou habitat is protected and travel corridors are enhanced between Lake Nipigon and Wabakimi Provincial Park. As a result, Crown land activities will not be promoted and structures (i.e. trap cabins) will be discouraged.

The Gull Bay Enhanced Management Area was established primarily for the development of west shore access facilities. Crown land activities such as swimming, boating and camping are encouraged.

The South Lake Nipigon Enhanced Management Area has been established to ensure the protection of lake oriented values such as remoteness and lake tributaries. Remote Crown land recreation opportunities will be permitted such as canoeing, wilderness camping, hiking and angling.

The Lake Nipigon – Beardmore Enhanced Management Area has been identified for the promotion of outdoor recreation. A variety of Crown land recreation activities will be promoted including trail development and use (hiking, snowmobile, ATV), swimming, remote and road accessible camping, angling, hunting and nature appreciation. Crown land camping west of High Hill Harbour access road between Poplar Lodge Campground and High Hill Harbour Marina will not be permitted.

The intent for the Orient Bay Peninsula Enhanced Management Area is to promote backcountry recreation and to protect lake oriented values. Off road vehicles are the only permitted means of access to the peninsula, thus providing a large area for high quality backcountry recreation activities such as angling, hunting, hiking, camping, mountain biking and nature appreciation.

3.2.3 FORESTRY AND MINING

The enhanced management areas were established to recognize areas with special features or values (e.g., recreation values, wildlife values, remoteness) and provide a specific focus for the application of guidelines and other planning and management strategies.

Forestry and mining are permitted in enhanced management areas.

“Enhanced management areas may lead to modifications (e.g., timing, location, method, access) in resource management practices in order to recognize other land use values. These adjustments will be implemented with no impact on wood supply, and only in exceptional cases will wood costs be affected” (Ontario’s Living Legacy Land Use Strategy, 1999, page 25).

The intent of this strategy is to provide land use and resource management direction, further refined from that provided in the *Ontario’s Living Legacy Land Use Strategy*, for the Basin enhanced management areas.

3.2.3.1 Direction

Land use decisions within the recreation enhanced management areas, (West Lake Nipigon, Lake Nipigon-Beardmore, Orient Bay Peninsula and Gull Bay) will be based on maintaining recreation and tourism opportunities. Industrial activities will be carried out in a manner that protects backcountry recreation and tourism values (e.g., remoteness, scenic landscapes, wildlife viewing opportunities, etc.). Industrial activities will also need to be modified if recreation and tourism infrastructure is developed.

Within the Pikitigushi Enhanced Management Area, industrial activities will be adapted to protect critical caribou winter habitat and to enhance caribou travel routes between Wabakimi Provincial Park and Lake Nipigon as per the *Ontario’s Living Legacy Land Use Strategy*. More specifically, this means maintaining a linked network (temporally and spatially) of mature forest tracts between Lake

Nipigon and Wabakimi Provincial Park, and ensuring that a sufficient area of critical summer and winter habitat is always available within the enhanced management area to meet caribou needs.

In the South Lake Nipigon Enhanced Management Area no new permanent access will be permitted except where no other reasonable alternative exists and industrial activities will be modified to minimize resource access and its related impacts, especially with regard to Lake Nipigon tributaries.

Industrial activities in all six enhanced management areas will be planned so that all tributaries to Lake Nipigon are protected. As a general rule, industrial roads and trails in all enhanced management areas will be constructed to minimum standards (not necessarily winter roads only), with temporary bridges being required instead of culverts where feasible. Road use strategies described in the forest management plans will clearly define the expected operating life of the roads and the timing and manner in which abandonment will occur. A close liaison between the Ministry of Natural Resources biologist and the Sustainable Forest Licence holder will be maintained when carrying out construction/operations near tributaries.

A new code of best practices for mineral exploration activities within the enhanced management areas has been developed by the Ministry of Northern Development and Mines in conjunction with the Ministry of Natural Resources (Appendix D). The intent of this code of best practices is to promote the conservation of recreational and natural values in the enhanced management areas by the mining industry. The Ministry of Northern Development and Mines will facilitate promotion and transfer of these best practices to the prospecting community.

3.2.4 TOURISM AND RECREATION

Two of the four objectives set out in the *Ontario's Living Legacy Land Use Strategy* are to recognize the land use needs of the resource-based tourism industry; and to

enhance angling, hunting and other Crown land recreation opportunities. The *Ontario's Living Legacy Land Use Strategy* also recognizes the Basin as having “*extremely significant tourism and recreation potential that merits increased planning, management and promotion.*” In addition to this direction, the Project Team identified a number of key principles to help guide the development of land and resource management direction for tourism and recreation in the Basin:

- Ensure no negative impacts on the ecosystems or values of the Basin
- Encourage eco – tourism and low impact recreation opportunities
- Provide economic opportunities for the local Aboriginal population and surrounding communities
- Ensure protection of species at risk when making decisions on development and Crown land use

3.2.4.1 Direction

Gull Bay Enhanced Management Area

The land use intent for the Gull Bay Enhanced Management Area is to facilitate future shoreline access and development. Gull Bay First Nation will be approached to participate as a partner in the development of a lake-oriented access and campground facility within the enhanced management area. This type of facility would provide economic opportunities for the First Nation in terms of jobs and income. This development would provide similar recreational opportunities on the west side of the lake as are currently provided at the Poplar Lodge Campground (e.g., docks, boat ramp, fish cleaning hut, campsites, vault privies).

The location of the development will be in the southern portion of the enhanced management area, as the shoreline along the northern portion is largely comprised of sensitive wetland features. The majority of the shoreline in the southern portion has a stable boulder-type shoreline suitable for

development. The exact site location will be determined through thorough field investigation and inventory work to ensure protection of earth, life and cultural values.

West Lake Nipigon Enhanced Management Area

The West Lake Nipigon Enhanced Management Area offers excellent backcountry recreation opportunities. The landscape is rugged and scenic and the area is poorly accessed. Recreational water routes and circle route opportunities are advocated for this area. For example, potential exists for a circle route starting at Waweig Lake, up to Mackenzie and Machine Gun Lakes and back to Waweig. Canoe routes will be improved based on the availability of funding and opportunities for partnerships. Improvements could include fire pits and box privies at remote campsites, portage clearing, signage, and the development and publication of canoe route brochures. In addition, potential exists for an eco-tourism development somewhere off the Wabinoosh road. This idea will be investigated further, with the intent of providing opportunities for local First Nations.

Crown land may be made available to Gull Bay First Nation in the Lake Nipigon West Enhanced Management Area to develop a remote trail and lookout opportunity on the north shore of Gull Bay amid the spectacular scenery and cliff formations. This development would complement the campground operation proposed for the Gull Bay Enhanced Management Area, and could be offered as a day excursion by charter boat operators.

Lake Nipigon – Beardmore Enhanced Management Area

As directed in the *Ontario's Living Legacy Land Use Strategy*, some recreational/tourism development is encouraged in the Lake Nipigon – Beardmore Enhanced Management Area. Development will be nodal, will focus on areas already developed (Poplar Point and High Hill Harbour Areas) and will be carefully planned such that cultural, ecological and

social values are not impacted. A close liaison will be maintained with the First Nations in the area and the Regional Municipality of Greenstone regarding any development proposals.

A considerable amount of alienated land exists in the Lake Nipigon – Beardmore Enhanced Management Area including two Indian reserves, and private and leased land in proximity to Poplar Lodge Campground. The Crown land development opportunities identified below will be pursued in light of private sector development activities. The overall objective being to ensure that the capacity of the Basin ecosystem to support development is not exceeded; and that the development identified in this strategy is complementary to, not in competition with, private sector development.

The Ministry of Natural Resources, Nipigon District, will request private sector proposals for the development of one road accessible or remote eco-lodge. The road accessible eco-lodge could be located at High Hill Harbour or North High Hill Harbour; the remote eco-lodge could be located at South High Hill Harbour or Grant Point. Detailed field inventories would be required before a specific site location could be determined. Any development proposals must:

- Provide economic opportunities to local First Nations and communities
- Be aesthetically pleasing and blend in with the Basin landscape
- Promote non-consumptive, high quality tourism opportunities with an ecological and cultural theme; and
- Integrate operations in with existing tourism facilities in the area (harbour, charter boat operations, campground, etc.)

The Township of Beardmore, now part of the Regional Municipality of Greenstone, has had a longstanding interest in pursuing cottage lot development on Lake Nipigon to generate economic benefits for their community. A parcel of Crown land, proximate to the High Hill Harbour Marina, will be made available to

the Regional Municipality of Greenstone for cottage lot development. Cottages will be developed in a cluster format rather than the traditional linear shoreline format. Minimum setback for the cottage development will be 500 metres from the water's edge. Cottage owners will obtain access to the lake via the High Hill Harbour Marina. Number and size of lots will be determined after detailed field investigations to determine suitability of the terrain. No development will take place until inventory work ensures no negative impact on the environment including sensitive values (e.g., significant plant species), cultural features or water quality. The size of the Crown parcel to be sold to the municipality will be determined after site investigations.

Trail development originating from Poplar Lodge Campground or High Hill Harbour will be promoted through partnerships. Potential trail opportunities are as follows.

1. Develop a trail boardwalk along the Standingstone Creek/wetland at Poplar Lodge Campground, leading into a 1-2 kilometre looped trail. This type of development would afford an easily accessible recreational opportunity to campground visitors as well as providing a chance to view and learn about the local environment.
2. Develop a coastal trail (walking only, no vehicles) from High Hill Harbour or Poplar Lodge Campground south to Lake Nipigon Provincial Park. This could be tied in with the future eco-lodge development, providing a challenging hiking opportunity.
3. Take advantage of old logging roads north of Poplar Lodge Campground, to develop looped trails from the campground north to the Namewaminikan River and back to the campground. These trails could be used for hiking and mountain biking or for recreational vehicles (e.g. all terrain vehicles, snowmobiles).
4. MNR will seek partners to develop a lookout/highway rest stop in the Beardmore Enhanced Management Area,

near the microwave tower south of Macdiarmid that would allow for viewing of Pijitawabik Bay Lake Nipigon Conservation Reserve.

Tourism and recreation in the Lake Nipigon Conservation Reserve will focus on low impact pursuits. Development will be restricted to the improvement of remote campsites (see Section 3.2.2.1), establishment of canoe and kayak routes, and the promotion of boat tours to explore the lake and view wildlife.

Development of a backcountry canoe route or trail system in the Castle Lake Area (northwest shore of Lake Nipigon), will be considered. Access to this area can be obtained via a trail into Castle Lake from Castle Bay, a trail from Wabinoosh Road into Boswell Lake and then to Castle Lake or by floatplane into Castle Lake. There are a number of interconnecting lakes that would facilitate canoeing. This remote opportunity could be promoted in conjunction with a cruiser boat operation or a remote tourism operation out of Gull Bay, Whitesand Reserve and/or Armstrong. Tourist operators could outfit guests for backcountry excursions using their cruiser boat or existing tourist establishments (Armstrong area operators) as a home base or jump-off point.

Development of a small number of low impact tourist sites with a Native cultural theme, located in the southern half of Lake Nipigon and accessible by boat, will be permitted and authorized through land use permits (see Section 3.2.2.1). Examples include a sweat lodge or a replica of a pre-historic Native campsite. These sites could be incorporated into local tourist operations (e.g., cruiser operations, municipal adventure centre, lodge, First Nation ventures). Any development of this nature will be subject to detailed site inspections and land use permit conditions, to ensure no negative impacts to the Basin environment or conflict with existing use patterns.

Nipigon River and Nipigon Palisades Conservation Reserves

The Nipigon River and Nipigon Palisades provide outdoor recreation opportunities that are easily accessible. Further recreation/tourism development that could occur in these conservation reserves and adjacent general use areas include:

1. Improvements to the walking trail at Split Rock along the Nipigon River to address safety issues along this precipitous stretch of the river. A scenic look-out and educational brochures/signage could promote the natural and human history of the area.
2. The establishment of trails from the Palisades highway parking facility (noted in Section 3.2.1.1) to allow ice/rock climbers to access popular climbs and hikers to access scenic waterfalls and viewpoints.
3. A walking trail along the Tramway from Alexander Landing to South Bay to promote and explore the areas' railroad history.
4. A trail along the top of the palisades, traversing their full length and accessed from the highway or the Gorge Creek Road.

Educating the public in the rich history of the area would be a major feature of these trails. Partnerships with local trail associations, naturalist clubs, tourist operators, climbers clubs, municipalities, etc. will be instrumental in developing, promoting and maintaining these trails.

3.2.5 FISHERIES

Lake Nipigon is an aquatic resource of global significance, containing clean, clear water and a fish population that has changed little over the past one hundred years. The overall land use intent with regard to fisheries in the Lake Nipigon Basin is to ensure the maintenance of a healthy, world class, high-quality fishery. Commercial species such as lake whitefish will be managed to optimize the opportunity to

harvest marketable species. Pike, lake trout and brook trout will be managed with the goal of optimizing opportunities to catch a large, memorable-sized fish. The harvest from an existing Aboriginal subsistence fishery will be factored into the management equation when determining available sport and commercial fishing opportunities.

3.2.5.1 Direction

Lake Nipigon, Nipigon River and Black Sturgeon Waterway

Efforts will be made to work with local First Nations to develop a co-stewardship aspect to the management of the Lake Nipigon fishery. This type of arrangement could involve First Nation participation in ongoing fishery management activities, information gathering and analysis, enforcement and public education.

Given the objective to manage for a world class, high quality fishery, the annual allowable harvest levels for each game and commercial fish species in Lake Nipigon (based on stock status indicators) will be calculated. In determining the allocation of the allowable harvest, the first allocation will be to the resource (i.e., enough fish are left unharvested to ensure viable populations). The remaining allowable harvest will be allocated first to Aboriginal subsistence needs, and the remaining allowable harvest will be made available to the commercial and sport fishery. Allocation decisions for commercial and sport fishing will be based in part on an economic-benefit analysis of commercial and sport fishing on Lake Nipigon. Social factors will also be considered in determining the allocation of the fishery resource. Stock status indicators and a protocol for adjusting quotas will be developed for each species. Harvest quotas will be reviewed annually. The allocation process will include consultation with stakeholders.

Commercial fish management practices will be modified, in consultation with commercial fishing operators, to address the long-term health of the fish stocks. These modifications may include developing a commercial system

based on zone quotas over the long term (further study on stock discreteness and movement patterns is required), closing the commercial fishery for degraded species until populations recover and investigating the use of management strategies to reduce the frequency of incidental catch.

Sport fish management practices will also be modified to ensure the sustainability and continued world class status of the Lake Nipigon fishery. This will involve developing a direct harvest control system such that the total harvest by anglers does not exceed the sport fish allocation. This system will be developed in consultation with the public and by investigating the types and success rates of harvest control systems currently being used in various locations around the world. Other management options for Lake Nipigon that will be investigated include allowing only artificial lures year round, creating fish sanctuaries to protect sensitive spawning habitat and establishing a fisheries and wildlife management board for Lake Nipigon waters and shore lands.

The Nipigon River will be managed for a high quality brook trout fishery, with the intent of maximizing the opportunity to catch a memorable sized fish. With regard to the Nipigon River and Black Sturgeon Waterway, the implementation of a direct harvest control system and/or regulations to reduce harvest while still providing quality angling opportunities (e.g., reduced limits, single, barbless hooks year round) will be pursued.

Fishery enhancement efforts for Lake Nipigon, the Nipigon River and the Black Sturgeon waterway will focus on naturally occurring species. Fish habitat restoration projects could include restoring fish passage, repairing damage from log drives or stabilizing degraded shorelines near spawning areas. As set out in the Nipigon District Fisheries Management Plan for Lake Nipigon, sport fish management priorities will continue to focus on protection and rehabilitation of brook trout with secondary priority given to lake trout and walleye stocks. Increased priority will be given to the management of northern pike and lake sturgeon.

Collecting and analyzing information for the improved management of these three aquatic ecosystems is considered of paramount importance. Subject areas requiring study include:

- Collecting data on fish stock status, movement patterns, stock discreteness, spawning areas and time of spawn
- Impacts of smelt and trawling for smelt
- Determining an accurate estimate of Aboriginal subsistence harvest
- Dealing with exotics – prevention techniques, potential impacts
- Identifying barriers to fish migration; and
- Developing recovery plans for degraded species and fish species at risk (brook lamprey, cisco, walleye, lake sturgeon)

Partners will be approached to assist in research and analysis. The district will continue to work with Lake Nipigon Fisheries Assessment Unit to maintain and where possible, enhance programs to monitor and assess status of fish populations and habitat. The Anishinaabek Ontario Fisheries Resource Centre is seen to be a significant partner in this regard with the ability to contribute traditional knowledge as well as to participate in science and information gathering.

Enhanced Management Areas and the Nipigon Palisades

Future tourism facility development opportunities identified for enhanced management areas (Lake Nipigon – Beardmore, Gull Bay and West Lake Nipigon Enhanced Management Areas) will be non-consumptive in nature and not based on the utilization of the Lake Nipigon or inland lake fishery resource.

Streams entering Lake Nipigon provide critical spawning and nursery areas for many species. The maintenance of stream bank vegetation and detailed planning of road crossings will be important in ensuring these habitats are sustained. A systematic stream inventory will

identify human-made barriers to migration (e.g., culverts, dams). In cooperation with the Department of Fisheries and Oceans, site specific mitigation plans will be developed and corrective measures taken. This information will be communicated to the forest and railway companies and the Ministry of Transportation.

Lakes in the enhanced management areas currently being stocked will continue to be stocked. Efforts will be made to increase the fish stocking program in the EMAs by assessing the suitability of easily accessible, landlocked lakes not currently being stocked. The provincial fish stocking policy and guidelines will be followed in determining lake suitability.

3.2.6 WILDLIFE

Important wildlife habitat and populations exist throughout the Lake Nipigon Basin Signature Site. In recognition of the importance of wildlife resources in the area, the overall land use intent for the Lake Nipigon Basin is to ensure healthy wildlife populations, protect sensitive species at risk and maintain (or in some instances increase) the diversity and distribution of native wildlife species in the Basin.

3.2.6.1 Direction

Efforts will be made to work with local First Nations to develop a co-stewardship aspect to the management of the wildlife in the Lake Nipigon Basin. This type of arrangement could involve First Nation participation in ongoing wildlife management activities, information gathering and analysis, enforcement and public education.

Woodland Caribou

The Lake Nipigon Basin provides woodland caribou with critical habitat essential for their survival. The geographic location of the Basin allows for the connectivity between caribou populations in the Basin, along the north shore of Lake Superior, in Wabakimi Park and in the Ogoki Lake area.

Preliminary vegetation analysis of the Basin ecosystem indicates that active vegetation management on the Lake Nipigon islands and shoreline may be necessary to ensure maintenance of wildlife habitat, particularly with regard to woodland caribou. Further studies and analysis will be conducted to determine what the availability of caribou habitat will be over time and how prescribed burning or natural fires and fire suppression on the islands and shore lands may be used to generate/protect desired habitat types. In the interim, fire will be managed according to *Ontario's Forest Fire Management Strategy*, which allows fire to burn on the islands, with suppression occurring only when human safety or property values are at risk. The Ministry of Natural Resources and Sustainable Forest Licence holders will identify opportunities to achieve wildlife habitat and forest management objectives simultaneously in the enhanced management areas.

Based on studies conducted during strategy development, the recognized caribou distribution line has been adjusted to include all of the Lake Nipigon islands to better reflect the current caribou range distribution.

The boundary of the Pikitigushi Enhanced Management Area has been adjusted to accommodate new information gathered during the development of this strategy. It now captures more accurately, the critical caribou wintering habitat located north of Lake Nipigon. Further investigation of existing information as well as analysis of information gathered through future tracking studies will be used to determine if further boundary refinements are required.

Efforts to ensure the protection and continuation of the Lake Nipigon Basin caribou population will include restricting development on caribou summer grounds (islands and peninsulas), winter grounds and migration corridors, and limiting human use and activity on/near the calving islands during critical spring/summer calving periods.

Forestry activities in the Pikitigushi Enhanced Management Area will be conducted so as to ensure the protection of important summer

and winter caribou habitat and to maintain mature forest migration corridors between Lake Nipigon Basin and Wabakimi Provincial Park. Mineral exploration activities in this enhanced management area will be encouraged to follow a code of best practices to avoid impacts to caribou mainly through modified line cutting and scheduling of activities (see Appendix D).

Wildlife Population and Habitat Protection

Public education about species at risk in the Basin will be achieved through production of brochures to be distributed out of government offices, campgrounds, tourist information centres, etc. as well as through the placement of interpretive signs at access points, trails and campgrounds. Local businesses, corporations, municipalities, naturalist and outdoor groups will be invited to participate as partners in this endeavor.

Efforts will be made to locate a bat hibernaculum thought to exist in Pijitawabik Palisades. If discovered, assessments will be undertaken to learn more about this feature and to determine if any protective measures are necessary.

Research and education programs will be initiated (through partnerships where possible) with the intent of achieving long term monitoring stations for birds, small mammals and amphibians; and conducting inventories of wildlife habitat and species at risk.

Wildlife habitat and wildlife species sensitive to human disturbance/activity will be identified and protected from disturbance within Lake Nipigon, the Nipigon River and Nipigon Palisades Conservation Reserves and the provincial parks.

Hunting

Big game hunting will not be permitted on the islands of Lake Nipigon although small game hunting will be permitted. No hunting is permitted on Geikie Island, which is designated as a Crown Game Preserve. Hunting of big game for subsistence purposes

by Aboriginal peoples on Lake Nipigon islands is permitted, where the islands are part of their traditional lands.

Efforts to support the opening of Wildlife Management Unit 15B to white-tailed deer hunting will be initiated with the Provincial Deer Committee in an effort to provide new hunting opportunities in the area. The white tailed deer population is expanding northward which may have a negative impact on the Basin caribou population. Opening Unit 15B to deer hunting may help to control the spread of the deer population northward.

3.2.7 VEGETATION

Although a detailed vegetation inventory is not available for the entire Basin, the land use intent with regard to vegetation and vegetative communities is to ensure that the diversity and distribution of native vegetation is maintained and where possible, enhanced within the signature site.

3.2.7.1 Direction

Further fieldwork will be encouraged through partnerships to better map and define the vegetative communities within the Lake Nipigon, Nipigon River and Nipigon Palisades Conservation Reserves as well as the provincial parks. This information will increase knowledge of sensitive or unique vegetative communities as well as allowing for a better understanding of the number of habitat types and their availability. This information will also be used to improve the fire management direction for the Basin, providing a better indication of where prescribed burning may be needed and where fire should be suppressed. Rare or infrequent old growth areas will be identified and management direction developed to protect them.

Significant flora data collected to date is not complete for the Signature Site. Efforts will be made through literature research and fieldwork, to identify and locate regionally and provincially significant flora within the entire Lake Nipigon Basin Signature Site. This effort will likely be tied in with other

fieldwork ongoing in the Basin and will take advantage of any partnership possibilities. Efforts will focus on rare habitats such as wetlands, cliffs, talus slopes and exposed shorelines first. As new information becomes available, sites with flora sensitive to disturbance will be designated as no use or limited use zones.

3.2.8 CULTURAL HERITAGE

The protection and appreciation of cultural landscapes/resources is one of the objectives of the provincial parks system. Likewise, the procedure for conservation reserves indicates a requirement to identify and protect cultural heritage values in conservation reserves.

The Lake Nipigon Basin Signature Site represents a veritable mix of pre-historic and historic landscapes. The overall land use intent with regard to cultural heritage is to advocate further research and documentation of cultural sites, protect known sites, promote public education and encourage the tourism sector to incorporate cultural heritage interpretation into tourism ventures.

3.2.8.1 Direction

It is likely that much prehistoric and historic information is maintained by the oral tradition of the elder Aboriginal community. As such, local Aboriginal communities will be approached to partner in further identifying, locating and documenting prehistoric and historic archaeological sites and related information. Partnerships will also be sought with local/regional historical groups and the academic community to help improve the level of archaeological/cultural knowledge of the Basin.

Known sensitive archaeological sites will be appropriately zoned in provincial parks and identified as sensitive sites within the conservation reserves (see Section 3.2.2.1). As new information becomes available on archaeological sites within the Basin, management action will be taken to ensure their protection. Interpretive opportunities at access points, campgrounds and/or trails will include an element of cultural heritage

appreciation. Existing and future tourist operators in the Basin will be encouraged to incorporate cultural heritage appreciation into tourism programs. This might involve visitation to historical sites (e.g., trading posts, logging camps) that can withstand human visitation, provision of cultural heritage brochures, and re-creation of authentic prehistoric/historic experiences (e.g., authentic native camping/foods; traveling a fur trader route). As the majority of archaeological sites are vulnerable to destruction, the specific location and identity of most cultural sites will not be made public.

3.2.9 WATER RESOURCES

The waters of Lake Nipigon are a resource of international significance; a vast body of fresh water in near pristine condition. Maintenance of a healthy watershed will be the priority in all water management decisions pertaining to the Lake Nipigon Basin Signature Site. Water quality and quantity will be protected and where possible, improved.

3.2.9.1 Direction

Hydro development on the Nipigon River at Pine Portage, Alexander Falls and Cameron Falls and Ogoki Reservoir, will be managed with the health of the lake and rivers' water resources being the first priority. The Ministry in conjunction with Ontario Power Generation will refine and improve the existing water management plan for the Nipigon River and Lake Nipigon under the new Water Management Planning Guidelines. Regular auditing will occur to ensure all aspects of the Lake Nipigon and Nipigon River Water Management Plan are being followed, and plan objectives are being achieved.

Hydro development at the Namewaminikan River Dam is in disrepair and requires substantial investment to make it operational. The dam owner will be required to repair the facility and to operate it.

New hydroelectric development on rivers or lakes in the Nipigon Basin Signature Site (or tributaries to the lakes and rivers in the basin) will be planned to ensure the protection of

water, fish, wildlife, vegetation and habitat values. Hydroelectric development is not permitted in provincial parks or conservation reserves. The new Water Management Planning process will result in a revised Water Management Plan for Lake Nipigon and the Nipigon River. This document will provide detailed direction relating to current and future hydroelectric development and management.

In co-operation with other regulatory agencies, inventories and studies will be conducted to better assess the level of pollution occurring on Lake Nipigon from areas of high use and point source locations (access points, community developments, campgrounds, harbours). Where point source problems are identified, the nature of any required remedial action will be determined and management strategies put in place with the intent of achieving zero discharge.

Future infrastructure development will be located above the regulated flooding elevation for Lake Nipigon.

Aqua-culture operations will not be permitted on Lake Nipigon.

Sealed holding tanks for all boats with pressurized water systems is preferred to ensure waste-water (both grey water and sewage) is not discharged into Lake Nipigon. Consultation with the Department of Fisheries and Oceans, the Ministry of Tourism and the Regional Municipality of Greenstone will be required to determine the feasibility of this strategy and to ensure that shoreline facilities exist and are used to properly manage waste-water.

Efforts will be made to better collect, share and obtain information as follows:

- Solutions to current and possible future introductions of exotics (e.g., spiny water flea, zebra mussels, etc)
- Better inter-agency communications and data sharing (e.g., Department of Fisheries and Oceans, scientific community)
- Conducting field studies (water quality,

benthos) (e.g. Kitchigaming Field Fisheries Unit, Anishinaabek Ontario Fisheries Resource Center)

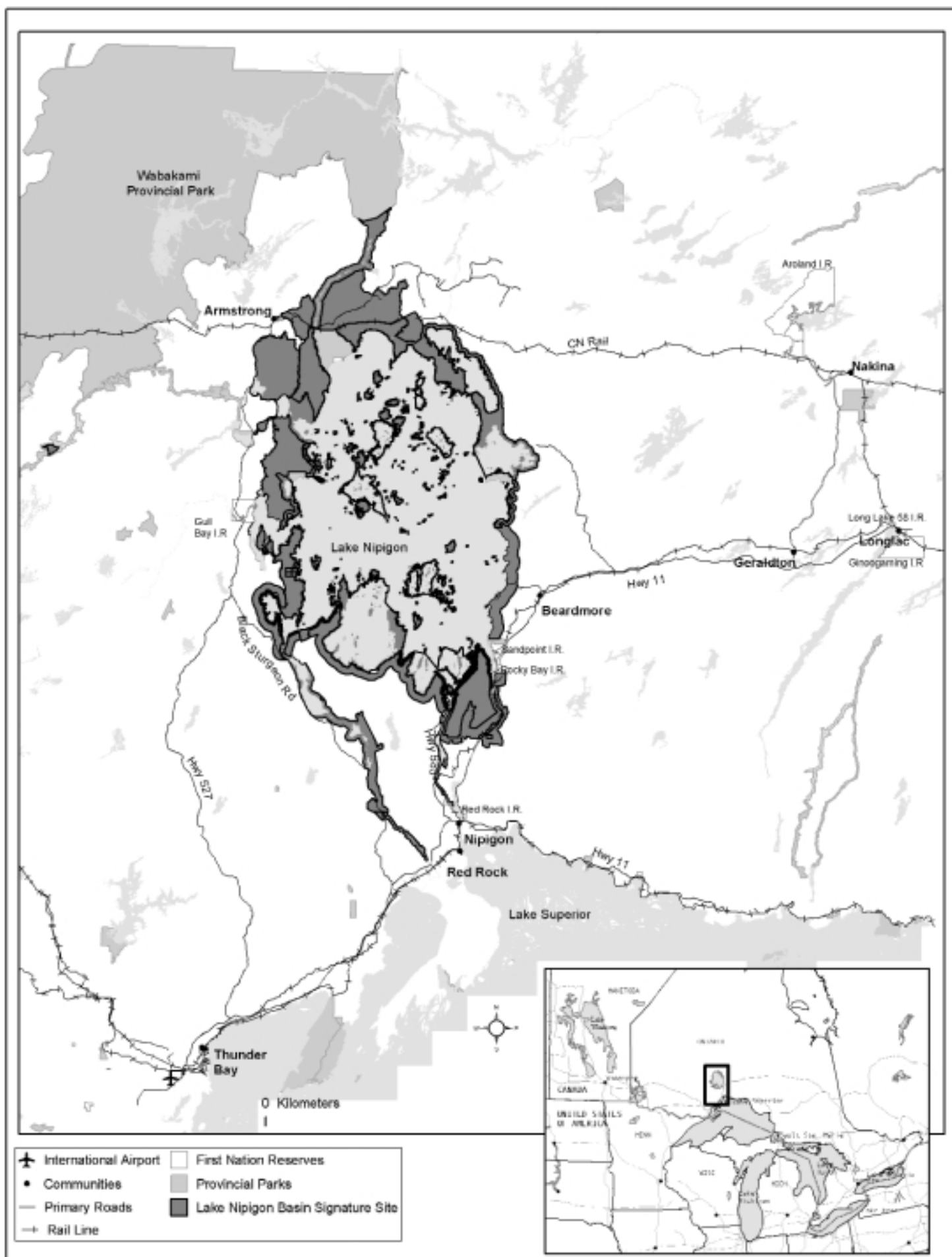
- Scientific collectors' permits (e.g., all data collected must be forwarded to Nipigon District Ministry of Natural Resources within a specified time limit) ; and
- Establishing trend-through-time monitoring stations for water quality

Signs will be posted at all access points educating the public about the importance of keeping exotics out of Lake Nipigon and the required steps to take before accessing the lake (e.g., no dumping of live bait buckets in the lake, or rinsing of live wells and bilge).

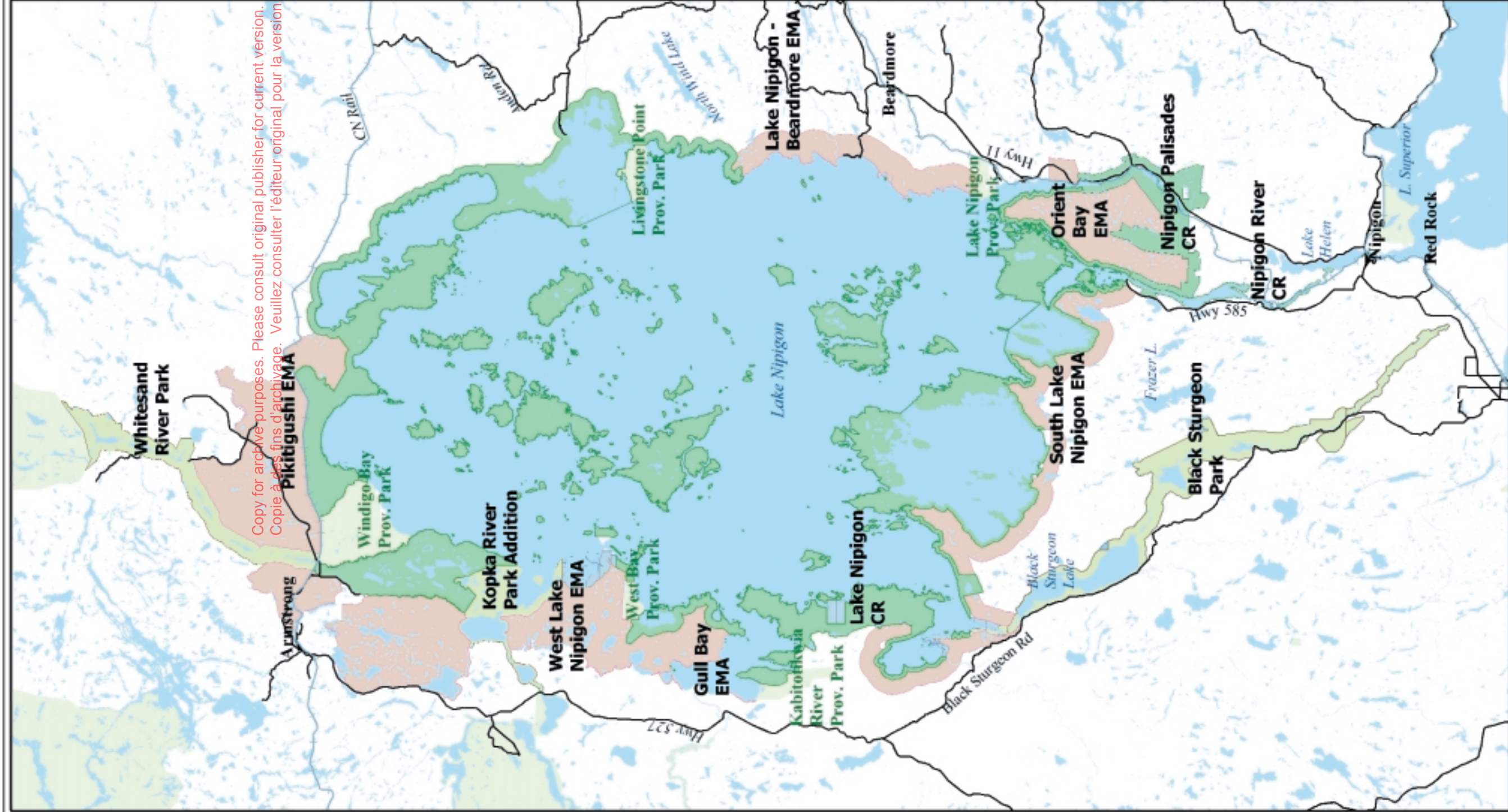
Contaminant levels in Lake Nipigon fish will be investigated and a public education effort initiated (signage, literature) in order to address potential public health risks from consuming Lake Nipigon fish. This is especially a concern for First Nation community women of child-bearing age and children whose diets may include a fair amount of fish.

Partners (e.g., Canadian Coast Guard, Transport Canada) will be sought for the development of improved communications facilities for Lake Nipigon to enable better search and rescue programs. Efforts will be made to also encourage and assist the Canadian Coast Guard to become more active in enforcing boating regulations on Lake Nipigon.

FIGURE 1: REGIONAL SETTING FOR THE LAKE NIPIGON BASIN



INSERT FIGURE 2
LAKE NIPIGON BASIN SIGNATURE SITE STUDY AREA



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Lake Nipigon Basin Signature Site Study Area

Legend

- Provincial Park
- Lakes
- Major Rivers - Double Line
- Primary Road
- Rail Line
- Conservation Reserves (CR)
- Enhanced Management Areas (EMA)
- OLL Parks
- Forest Reserves

Scale 1:750,000



Source: MNR NRVIS Data
 Datum: UTM, NAD83, Zone 16
 Date: October, 2002

This map is illustrative only. Do not rely on it as being a precise indicator of routes, location of features, nor as a guide to navigation.

This map was produced by the Nipigon District, Ministry of Natural Resources.

FIGURE 2: LAKE NIPIGON BASIN SIGNATURE SITE STUDY AREA

LAKE NIPIGON CONSERVATION RESERVE RESOURCE MANAGEMENT PLAN

CHAPTER 2

July 2003

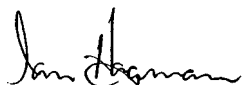
APPROVAL STATEMENT:

I am pleased to approve the Management Plan for the Lake Nipigon Conservation Reserve.

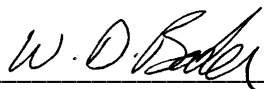
This Management Plan provides guidance for the management of the Conservation Reserve and the basis for ongoing monitoring activities.

The Lake Nipigon Conservation Reserve is located within the Lake Nipigon Basin Signature Site, one of 9 such areas featured in the *Ontario's Living Legacy Land Use Strategy* (1999). Signature Sites are identified for their range of natural and recreational values and their potential to contribute to future recreation and tourism.

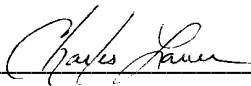
This Management Plan has been developed under the general direction of the Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy, which provides the overall context for land use and resource management activities in the basin.



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STATEMENT OF ENVIRONMENTAL VALUES AND THE ENVIRONMENTAL BILL OF RIGHTS

In accordance with the provisions of the *Environmental Bill of Rights*, the Ministry of Natural Resources prepared a *Statement of Environmental Values*. It describes how the purposes of the *Environmental Bill of Rights* are to be considered whenever decisions are to be made which might significantly affect the environment.

The primary purpose of the *Environmental Bill of Rights* is “to protect, conserve and wherever possible, restore the integrity of the environment.” From the Ministry’s perspective, that broad statement of purpose translates into four objectives in its *Statement of Environmental Values*:

- To ensure the long-term health of the ecosystems by protecting and conserving our valuable soil, aquatic resources, forest and wildlife resources as well as their biological foundations;
- To ensure the continuing availability of natural resources for the long-term benefit of the people of Ontario;
- To protect natural heritage and biological features of provincial significance; and,
- To protect human life, the resource base and the physical property from the threats of forest fires, floods and erosion.

The Ministry’s *Statement of Environmental Values* has been considered in the development of this resource management plan for the Lake Nipigon Conservation Reserve.

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1 INTRODUCTION

The Lake Nipigon Conservation Reserve was established as a result of the *Lands for Life* and Ontario's Living Legacy land use planning processes. It is recognized in the *Ontario's Living Legacy Land Use Strategy* (1999) as part of the Lake Nipigon Basin Featured Area (also known as a Signature Site), one of nine identified featured areas.

The Lake Nipigon Conservation Reserve is comprised of four Lake Nipigon bays (Humboldt, West, McIntyre and South), its islands and shore lands and is one of seventeen designated and existing protected areas and enhanced management areas that make up the Lake Nipigon Basin Signature Site. The designation of Conservation Reserve permits many traditional land uses to continue, including non-consumptive recreational activities as well as hunting, trapping and angling while at the same time excluding timber harvesting, mining, hydroelectric power development and sale of Crown land.

The planning process and public consultation required for the development of this resource management plan were integral parts of the overall planning process for the *Ecological Land Use and Resource Management Strategy* for the Lake Nipigon Basin. Detailed information relating to the process followed and the public input obtained can be found in Appendix A of the strategy document.

2 PLANNING AREA

2.1 BOUNDARY

As indicated in Figure 4, the boundary of the Lake Nipigon Conservation Reserve includes some of the bed of Lake Nipigon, the islands, 500 metres of the shoreline along the southern half of the lake and 1000 metres of the shoreline along the northern half of the lake (except for areas designated as enhanced management area). The Lake Nipigon Conservation Reserve boundary has been revised from that originally identified in the

Ontario's Living Legacy Land Use Strategy (1999) to include four of the five bays originally identified as the Lake Nipigon Waters Conservation Reserve. This amalgamation makes sense since the shoreline and aquatic ecosystems are closely connected ecologically. With the amalgamation, the total area of the Lake Nipigon Conservation Reserve is approximately 177,228.6 hectares.

Although all of the bed of Lake Nipigon is not included within the boundaries of the Lake Nipigon Conservation Reserve, this plan provides direction for fisheries and water resource management for all of Lake Nipigon. Given that the aquatic and shore land ecosystems are so inextricably linked, management direction is needed for both in order to ensure sustainability and protection of the conservation reserve.

The boundaries of the Lake Nipigon Conservation Reserve exclude patented land, mining claims and mining leases. Active mining claims, staked before the designation of the conservation reserve, are designated as forest reserves. Should these claims be retired, then these lands will be incorporated into the protected area. Currently, six forest reserves exist in English Bay, Chief Bay and Black Sturgeon Bay and adjacent to Lynx Harbour.

2.2 REGIONAL SETTING

The Lake Nipigon Conservation Reserve is located approximately 170 kilometres northeast of Thunder Bay and 50 kilometres north of the Town of Nipigon. It falls within the Thunder Bay and Nipigon Administrative Districts of the Ministry of Natural Resources and is situated between 88 and 89 degrees longitude and between 49 degrees 15 minutes and 50 degrees 15 minutes latitude (Figure 5).

The City of Thunder Bay has an international airport and is the largest service centre in the region. There are nine communities in close proximity to the Lake Nipigon Conservation Reserve: Beardmore, Macdiarmid (part of the newly created Municipality of Greenstone),

Armstrong, Nipigon, Red Rock, Gull Bay, Biinjitiwaabik Zaaging Anishinaabek (Rocky Bay), Whitesand Reserve and Red Rock Reserve (Lake Helen). The hamlet of Orient Bay, is located at the south end of Pijitawabik Bay, approximately 10 kilometres south of MacDiarmid. The tiny settlements of Mud River and Ferland are located on the rail line, north of Lake Nipigon. These communities provide essential services such as gas, shopping, groceries, banking, restaurants, hotels and medical care. Other population centres in this region of Northwestern Ontario include Terrace Bay, Schreiber, Manitouwadge, Geraldton, Nakina, Longlac, Jellicoe and Caramat.

At present the Indian Reserves of Gull Bay and Rocky Bay are the only occupied reserves on the shores of Lake Nipigon. The Jackfish Island Indian Reserve is currently unoccupied, while McIntyre Bay Indian Reserve has a small number of summer residents. The Whitesand Reserve is located next to the community of Armstrong. A portion of Lake Nipigon Provincial Park has been deregulated to provide reserve lands for Sand Point First Nation. Official reserve status for these lands has not yet been obtained and no community currently exists at this location. Other Aboriginal communities with traditional ties to Lake Nipigon but without established communities or reserve lands include Lake Nipigon Ojibway First Nation, and two Aboriginal groups seeking band status, Poplar Point Ojibway, and Poplar Point. The Red Rock First Nation community is located on the Nipigon River just south of the conservation reserve.

2.3 DESCRIPTION OF STUDY AREA

Lake Nipigon, the 38th largest lake in the world and the largest lake wholly within Ontario, and its surrounding shore lands, constitute a natural resource of global significance. Its clear, deep, unpolluted waters reach to a maximum depth of 166 metres (540 ft) and support a fish community that has remained basically unchanged since it was first studied almost a century ago. Although the Trans-Canada Highway runs just

south of its shoreline, Lake Nipigon has remained relatively undeveloped and remote, offering pristine landscapes and solitude to the outdoor enthusiast and refuge for a number of species at risk.

The Lake Nipigon Conservation Reserve is home to the woodland caribou, a threatened species in Canada. The islands of Lake Nipigon provide critical calving and summer habitat for the caribou. Migration corridors pass through the Mungo Park Point and Castle Lake areas. Other wildlife of note include the endangered American White Pelican, which has established a number of breeding colonies on the islands; the bald eagle, great gray owl and osprey (Figure 6).

Lake Nipigon supports a fish community of 46 species, two of which have been listed nationally as threatened, the shortjaw cisco and deepwater sculpin. The sport fishery is considered world class with the cold, clear waters of Lake Nipigon producing memorable sized lake trout and brook trout. The warmer bays produce walleye and exceptional sized northern pike. A quality commercial fishery also exists on Lake Nipigon. The primary commercial species is lake whitefish.

The Lake Nipigon Conservation Reserve has a rich heritage related to prehistoric Aboriginal cultures, the fur trade, early logging and railway construction. Numerous archaeological sites have been documented and many more are likely undiscovered.

One of the most striking characteristics of the area is the rugged topography. Along portions of the Lake Nipigon shoreline and islands, diabase cuestas form vertical cliff faces of up to 150 metres above the water's surface. These dramatic topographic features provide microclimates for arctic-alpine disjunct plant species. Areas in the conservation reserve with particularly scenic cliff landscapes include Outer Barn Island, Undercliff, Castle Bay and the Tchiatang Bluffs in Black Sturgeon Bay.

There are a fair number of access points to the conservation reserve, some located within the study area boundaries and some located

outside in the adjacent enhanced management areas and private land. Some sites are developed such as High Hill Harbour and South Bay access, whereas others are simply rough trails to a clearing by the water, such as North Chief Bay.

The Lake Nipigon Conservation Reserve provides an exceptional recreational landscape for outdoor enthusiasts, offering excellent backcountry recreation opportunities such as angling, wildlife viewing, sea kayaking, hunting and birding, to name a few. There are no tourism facilities within the boundaries of the conservation reserve other than a number of access points and Crown land campsites. Charter boat and cruiser boat operators provide single-day and multi-day trips on Lake Nipigon, catering to anglers, hunters and outdoor enthusiasts. Tourism, campground and marina facilities exist outside the conservation reserve in enhanced management areas and on private land located on Lake Nipigon's shores.

3 PLAN GOAL AND OBJECTIVES

Goal Statement: To protect, enhance and where necessary, restore the natural ecosystems, populations and wilderness qualities of the Lake Nipigon Conservation Reserve, while allowing for recreational development that will not compromise the integrity and environmental values of the conservation reserve ecosystem.

Objectives specific to the Lake Nipigon Conservation Reserve have been developed in light of the overall objectives for the Lake Nipigon Basin Signature Site. The intent is to implement strategies to achieve these objectives which in turn will further the objectives for the Basin.

3.1 ACCESS

- To manage access on Lake Nipigon so as to ensure the continued remote character of the north half of Lake Nipigon
- To work towards developing/maintaining (through potential partnerships) good

quality access points in a balanced fashion around the southern half of Lake Nipigon

- To ensure that existing and future access point activity/development on Lake Nipigon does not damage the lake environment

3.2 CROWN LAND USE

- To allow for Crown land use activities (camping, hiking, boating, hunting) within the Lake Nipigon Conservation Reserve, while ensuring the protection of sensitive features (nesting sites, calving grounds, significant plants, etc.)
- To ensure that existing structures on Crown land within the conservation reserve (trap cabins, commercial fish camps) are being used for their designated purpose; and to require their removal if they are not
- To encourage low impact camping and respect for the conservation reserve environment, its plants, fish and wildlife
- To seek partners for the mapping and improvement (fire pits, picnic tables, box privies) of remote campsites within the Lake Nipigon Conservation Reserve
- To enforce the 21-day Crown land camping rule within the conservation reserve to ensure fair and equal access to Crown land camping opportunities
- To allow no disposition of Crown land for recreation camps, tourist lodge or outpost camps in order to protect the pristine and undeveloped character of the conservation reserve

3.3 TOURISM AND RECREATION

- To promote the Lake Nipigon Conservation Reserve as a landscape offering exceptional backcountry recreational opportunities in the form of camping, sea kayaking, boating and nature appreciation
- To support and promote existing tourism developments/businesses in the enhanced management areas as facilities through

which the Lake Nipigon Conservation Reserve can be accessed and enjoyed

- To investigate the opportunity for canoe route/trail/look-out development in the Castle Lake area and the potential linking this opportunity to tourism operations
- To investigate and pursue, through partnership with local First Nations, the development of a small number of authentic historic Aboriginal encampments within the conservation reserve to be promoted as tourist attractions

3.4 FISHERIES

- To protect, rehabilitate and sustain aquatic ecosystems and populations within the Lake Nipigon Conservation Reserve while allowing for the benefits of Aboriginal subsistence, sport, commercial and bait fishing
- To use brook trout and lake trout population status as indicators of a healthy aquatic ecosystem
- To maintain fish populations at current levels in Lake Nipigon or restore to historical levels of abundance and stock structure with specific targets as follows:
 - Restore brook trout populations to 1930s level of abundance and stock structure
 - Restore walleye and sauger to early 1980s levels of abundance and stock structure
 - Restore sturgeon to 1919 –1924 levels of abundance and stock structure
 - Maintain lake trout populations at current levels as a minimum with a target of achieving 1993 levels of abundance and stock structure
 - Maintain northern pike populations at current levels of abundance and stock structure
 - Maintain lake whitefish at current levels of abundance and stock structure as a minimum
- Maintain stable self-sustaining status of other non-depleted stocks
- Restore depleted stocks of other native species with emphasis on rare, threatened and endangered species (deepwater sculpin, shortjaw cisco)
- To implement new management techniques in order to manage for a sustainable, world class commercial and sport fishery on Lake Nipigon
- To provide high quality recreational angling experiences on Lake Nipigon with a reasonable expectation of catching a memorable sized fish as follows:
 - Brook trout will be managed to provide a catch rate of 1 brook trout for every 2 hours fishing and 1 brook trout greater than 55 cm for every 8 hours fishing
 - Lake trout will be managed to provide a catch rate of 1 lake trout for every 3 hours fishing and 1 lake trout greater than 85 cm for every 8 hours fishing
 - Northern pike will be managed to provide a catch rate of 1 pike for every 1 hour of fishing and 1 pike greater than 85 cm for every 8 hours of fishing
 - To manage walleye and sauger in the short term to allow recovery of degraded stocks and in the long term as a sustainable high quality sport and commercial fishery with catch rates equivalent to those in the early 1980s
 - To manage lake whitefish primarily as a commercial species and to maintain, as a minimum, current catch rates
 - To manage sturgeon in the short term to allow recovery of degraded stocks and in the long term as a sport fishery with a reasonable expectation of catching a memorable sized fish
 - To use this plan as a catalyst for the development of a fisheries management plan for Lake Nipigon by 2005

- To ensure that the necessary information for improved management of the Lake Nipigon ecosystem is collected and analyzed (e.g., fish stock status/movement, estimate of subsistence harvest, location and mapping of critical fish habitat)
- To encourage First Nations to be involved in Lake Nipigon fisheries management activities such as information gathering, public education and enforcement

3.5 WILDLIFE

- To protect and sustain wildlife habitat and populations within the Lake Nipigon Conservation Reserve while allowing for the benefits of wildlife viewing, Aboriginal subsistence hunting, sport hunting and trapping
- To promote opportunities for non-consumptive uses of wildlife in the conservation reserve such as nature appreciation, interpretation, education, photography and scientific study
- To manage and protect caribou habitat, manage users and work collaboratively with forest industry, MNR districts/Regions and the Provincial Caribou Recovery Team to ensure the continued persistence and potential expansion of the Lake Nipigon woodland caribou population
- To protect, rehabilitate and create, through vegetation management, wildlife habitat so as to ensure sustainable and diverse wildlife populations and to maintain environmental quality and ecosystem integrity
- To work to maintain and where possible expand the populations of wildlife species at risk in the Lake Nipigon Conservation Reserve (e.g., bald eagle, white pelican, peregrine falcon, cougar, wolverine, woodland caribou)
- To encourage First Nations to be partners in the protection and management of wildlife in the conservation reserve
- To encourage local communities and interest groups to be partners in the protection and management of wildlife in the conservation reserve

3.6 VEGETATION

- To manage vegetation in the conservation reserve in order to ensure a natural diversity of vegetation cover and structure
- To investigate opportunities to use fire and fire management strategies in order to enhance or protect important vegetative communities and wildlife habitat
- To identify, document and protect regionally and provincially significant plant species/communities as well as arctic-alpine disjuncts within the conservation reserve

3.7 CULTURAL HERITAGE

- To identify, document and protect the cultural and historical values of the Lake Nipigon Conservation Reserve
- To encourage partnerships with local communities and tourist facilities in order to promote public awareness, understanding and appreciation of cultural values in the conservation reserve

3.8 WATER RESOURCES

- To ensure the continued maintenance, and where necessary, improvement of water quality and to ensure that no degradation of water quality occurs as a result of tourism, recreational or industrial activities/development in and around the Lake Nipigon Conservation Reserve
- To identify the major sources/locations/loadings of siltation and erosion in the Little Jackfish River
- To develop plans to address the structure and erosion rates of degraded channels of the Little Jackfish River

- To ensure that the current Water Management Plan for Lake Nipigon and the Nipigon River is adhered to
- To identify, document and address any sources of pollution on Lake Nipigon (e.g., sewage, phosphorus, organic material from access points, communities, houseboats, etc.)
- To reduce the probability of the introduction of exotics (e.g. zebra mussels) into Lake Nipigon
- To develop quantitative, measurable water quality targets for Lake Nipigon

4 MANAGEMENT DIRECTION

The management direction that follows in this section must be considered along with the direction contained in MNR's conservation reserve policy. Where this resource management plan does not address a specific activity, the provisions of the conservation reserve policy will apply.

4.1 ACCESS

Access to the Lake Nipigon Conservation Reserve is a combination of well-developed access points (public, private and municipal), river-access and forest access roads.

Access to the southern half of the conservation reserve is achieved via a number of locations, the municipal access facilities at Poplar Lodge Campground and High Hill Harbour being the primary ones. Although not located within the boundaries of the conservation reserve, these two access facilities provide the best services and sustain the heaviest use of any of the access points to Lake Nipigon. Private access facilities exist in the Orient Bay area.

South Bay has an old as well as a new access point located within the boundaries of the conservation reserve. Habitat degradation of a nearby spawning bed resulting from use of the old access point prompted the construction of the new site. The old site is still being used for access as well as Crown

land camping. Negative impacts to the spawning bed are still occurring and physical closure has been proposed for some time as the preferred solution by MNR biologists. The South Bay Anglers and other interest groups support the closure of the old site while some members of the public feel this restriction is unnecessary and unfair. The new access point provides some amenities (dock, launch pad, parking) and could sustain facility expansion and improvement.

Pine Portage access is located in the South Lake Nipigon Enhanced Management Area at the south end of Forgan Lake. This site is on a Crown lease held by Ontario Power Generation. Some concern exists about potential liability and safety issues associated with having a public access point on a waterpower lease and in such close proximity to the Pine Portage Dam. It is a favoured site for those who have smaller watercraft as it provides fairly sheltered access to the lake and is easy to get to via Highway 585.

The Poshkokagan River enters the southwest side of the conservation reserve and can be reached via the Black Sturgeon Road. The access point itself is onto the Poshkokagan River, 5 km upstream from the conservation reserve, however the Poshkokagan River mouth is within the conservation reserve. It is used most frequently by Americans and non-local Ontario residents and provides a sheltered means of accessing Lake Nipigon waters. Facilities are few and include an earthen launch pad, fire pit, parking and a cleared area for camping. A significant amount of wetland habitat exists along the river and is used by waterfowl and marsh birds for nesting. Local MNR biologists have noted concerns regarding the possible negative effect of wave action on marsh bird nesting success. This site is a favourite of physically handicapped individuals and seniors as the river waters are calm compared to the open waters of Lake Nipigon. Local tourist outfitters have complained that this site is used heavily by non-residents for Crown land camping purposes for extended periods.

Other access points on the west side of Lake Nipigon include Chief Bay, Kings Landing and Pishidgi Lake. Chief Bay access is very primitive and infrequently used. Kings Landing, located in the Gull Bay Enhanced Management Area, is run by the King family. It was originally the site of a logging camp. When the camp was no longer needed for forestry purposes the company left but the Kings, who worked for the logging company, continued to live seasonally at the site. Facilities include earthen ramps, docks, campsites, picnic tables and two pit privies, all in fair to poor condition. Creel surveys indicate that almost all users of this site are non-residents. Pishidgi Lake access provides water/portage access to Lake Nipigon via the Kopka River, Wabinosh Lake and Wabinosh River.

The northern half of the conservation reserve is less accessible. Access can be obtained via a number of water routes off the CNR line including, Whitesand River, Pikitigushi River and Little Jackfish River. Access into the Castle Lake area is possible via the Wabinosh Road to Bosnell Lake and from Bosnell Lake to Castle Lake. Lake Nipigon can be accessed from Castle Lake via a portage trail. There is also an old tramway, still in good shape, leading from Ferland to the shore of Lake Nipigon. There is a concern that forest access in proximity to Ferland could ultimately lead to road access to the north shore of Lake Nipigon, jeopardizing the overall objective for remoteness in the north.

The remaining access exists in the north east portion of the conservation reserve; Ombabika Bay access, Humboldt Bay north and south and Onaman River access via the Onaman River Resort. Access at Humboldt and Ombabika is via old logging roads in very rough condition. These sites are used by commercial fishermen, tourist outfitters, anglers and hunters. There are no facilities, however a number of structures and dilapidated cabins exist at Humboldt south. Although not easily accessed and undeveloped, those who use these sites do not want to see their access restricted.

4.1.1 DIRECTION

Access point management within the boundaries of the conservation reserve will take into account access provided to the conservation reserve via facilities located outside its boundaries in the enhanced management areas. No new access will be created in the Lake Nipigon Conservation Reserve. The intent is to provide access to the conservation reserve shorelands, waters and islands via well located, good quality access points, while at the same time ensuring protection of the environment and maintenance of northern remoteness. Facility improvement through partnerships will be investigated. Crown land camping at public access points will be governed by the 21-day Crown land camping rule. Measures will be taken to address any negative environmental impacts resulting from access development/activity (Figure 6).

4.1.2 MANAGEMENT STRATEGIES

- a) Allow no new access in the Lake Nipigon Conservation Reserve
 - Forest access roads coming close to the boundary of the conservation reserve and old forest access roads within the conservation reserve will be monitored to ensure no new access is created to Lake Nipigon. Any new access discovered will be physically removed and signed immediately
- b) Promote good quality access at South Bay (new)
 - Work with partners (South Bay Anglers, Township of Nipigon) to improve and maintain this access point. Facility improvement will include pit privies, garbage cans, picnic tables, signage, parking area expansion, increased docking and boat launching
 - Post signage indicating Crown land camping permitted for a maximum of 21 days

- Post signage relating to fishing regulations on Lake Nipigon, preventing exotic species introductions and restricted use zones (Sec. 4.2.2)
 - Erect interpretive panels (Sec. 4.3.2)
 - Initiate an access point clean-up blitz (as part of a Basin-wide initiative) with partners and volunteers
- c) Close the old access point in South Bay to protect the South Bay brook trout population
- Physically remove the old access point by ditching the access road, cleaning up any garbage and returning the site to a natural condition
 - Post signage restricting access
 - Post signage at the access clearing prohibiting Crown land camping
- d) No Ferland to Lake Nipigon access
- Improvements to the old tramway from Ferland to Lake Nipigon will not be permitted
 - Mechanized travel from Ferland to Lake Nipigon via the old tramway will be permitted by Aboriginals carrying out traditional activities only
- e) Determine the impact of access activities on marsh bird/waterfowl nesting along the Poshkokagan River
- During the first field season after approval of this plan, an assessment of the impacts of motorboat activity on the riverine environment will be conducted
 - If study results indicate that wetland features are being negatively impacted by motorboat wake, management action will be implemented. If management actions such as no wake zone, electric motors only, speed limit, or horsepower limit are deemed to be a sufficient means of protecting the wetland features, the access point will remain open and facilities may be put in place through partnerships to address environmental concerns (i.e. garbage facilities, vault privies)
- f) Allow the Ombabika Bay, Humboldt North and Humboldt South access points and roads to deteriorate naturally
- The Ombabika and Humboldt access points will not be promoted as public access through signage or brochures
 - No road improvements will be conducted or permitted on the roads into Ombabika and Humboldt Bays
 - Onaman River access via the Onaman River Camp will be permitted

4.2 CROWN LAND USE

Crown land use in the Lake Nipigon Conservation Reserve currently involves recreational and commercial activities such as camping, hiking, angling, boating, hunting, trapping, and bait fishing as well as the construction of facilities on Crown land such as recreation camps, trap cabins, commercial fish cabins and outpost camps. Issues relating to Crown land use include environmental degradation (erosion, soil compaction, destruction of vegetation, garbage), impacts to animal populations related to user activity and unauthorized buildings/structures.

Some popular campsites on Crown land within the conservation reserve are degraded. Vegetation has been cut to build structures, garbage is evident, human waste is not properly disposed of and multiple fire pits exist. There are also unauthorized structures within the conservation reserve, many in disrepair, which are unsightly and take away from the natural landscape. Unauthorized structures have no tenure or letter of authority authorizing their existence.

In addition, further investigation is required to determine if some authorized structures are being used for unauthorized purposes.

Concern exists about the impact of Crown land activities (boating, camping, swimming, etc.) on fish and wildlife species in the conservation reserve, especially species at risk. Scientific research has demonstrated the vulnerability of new born pelican chicks to heat and cold. Boating activity that causes nesting pelicans to move off their nests and leave young chicks exposed, could seriously jeopardize breeding success. Similarly, caribou are known to be sensitive to human disturbance. Camping and hiking on critical caribou calving islands during calving season could negatively affect the caribou population. Camping and swimming activity occurring where critical fish spawning and rearing habitat exists can be detrimental to the habitat. Wave action from motorboat activity in wetland environments can negatively affect wetland nesters and ecosystems.

Light pollution is one of the least known but most widespread forms of pollution on the planet. The virtually light-free skies of Lake Nipigon are becoming an increasingly rare resource around the world and are an important feature contributing to the wilderness quality of this lake. Lights from developments and communication towers on Lake Nipigon have a negative impact on the night skies. Concern exists about the increased light pollution that could result from future developments on Lake Nipigon.

4.2.1 DIRECTION

The intent is to encourage a diversity of Crown land uses within the conservation reserve while ensuring environmental protection. Crown land activities occurring or proposed that may have a negative impact on the environment will be managed by restricting activities or excluding them entirely. Crown land camping will be governed by the 21-day Crown land camping rule. Existing structures on Crown land within the conservation reserve that are authorized and being used for their intended purpose will be permitted to remain.

Crown land dispositions in the form of leases, land use permits or licences of occupation for lodges, outpost camps or remote recreation camps will not be permitted. Use of off-road vehicles (ATVs, snowmobiles) is permitted on existing trails in the conservation reserve (except in restricted use zones). New ATV or snowmobile trails will not be developed. Off trail use is allowed only to remove game. Trapping will continue to be a permitted use.

First Nations whose members carry out traditional activities such as fishing, hunting, trapping and gathering within the conservation reserve, may construct a cabin for their members. Current ministry policy (interim) permits the building of structures that are incidental to the exercise of a treaty right, in consultation with the local Ministry of Natural Resources. Activities in the Lake Nipigon Conservation Reserve will be consistent with this interim policy and any final policy. In the case of non-Aboriginal traplines, existing trap cabins are permitted to continue; new cabins are not permitted.

The skies and viewscape of Lake Nipigon will be managed as a dark-sky area.

4.2.2 MANAGEMENT STRATEGIES

- a) Restrict Crown land use in all areas of critical fish and wildlife habitat (Figure 6)
 - No Crown land activity will be permitted between April 15 and July 1 on identified Lake Nipigon Islands to protect calving caribou
 - No Crown land activity will be permitted within 500 metres of a pelican colony between April 15 and August 15
 - No Crown land activity will be permitted within 200 metres of a bald eagle nest between March 15 and August 15
 - No Crown land activity will be permitted within 200 metres of an osprey nest between March 15 and August 15
 - No Crown land activity will be permitted within 300 metres of a great blue heron colony between April 15 and August 15

- Only electric motors and non-motorized travel will be permitted from April 15 to August 1 in Williger Creek, McCann Creek, Tweed Creek and Owl Creek in McIntyre Bay to protect wetland habitat and species
 - As new information becomes available regarding sensitive sites (e.g. potential nesting peregrine, new eagle nests, new wetland sites, cultural sites), Crown land use restrictions will be implemented as necessary. For example, establish no wake zones in tributaries to Lake Nipigon
 - Establish a fish sanctuary in South Bay
- b) Educate the public regarding restricted use zones and times through brochures, maps and signage
- Place educational signage outlining the restrictions on Crown land use and the reasons for them at South Bay, Poplar Lodge Campground, High Hill Harbour, Pine Portage and Kings Landing access points
 - Distribute educational brochures and maps through the local MNR office and through partners such as tourist outfitters, municipalities, Thunder Bay Field Naturalists, Ontario Federation of Anglers and Hunters and tourist information centres
- c) Eliminate the unauthorized use of Crown land in the conservation reserve
- Inventory and document all structures in the conservation reserve and determine their status
 - Notify owners of unauthorized structures that they must remove them from Crown land within a reasonable time period
 - Advise owners, who are not using authorized structures for their intended purpose (i.e. using a commercial fish cabin as a commercial recreation camp), that they must use structures for their authorized purpose or they must remove them from Crown land
- d) Improve selected Crown land campsites within the conservation reserve
- Inventory and map Crown land campsites within the conservation reserve and determine those that are most heavily used
 - Through partnerships with tourist operators, municipalities and outdoor clubs, provide a picnic table, fire pit and box privy at selected campsites to reduce the likelihood of environmental degradation
 - Develop educational material on low impact camping and distribute through partners (Municipalities, tourist establishments, outdoor clubs)
 - Initiate a Crown land campsite clean-up blitz (as part of a Basin-wide initiative) with the involvement of partners and volunteers
- e) Manage the skies and viewscape of Lake Nipigon as a light-free zone
- Ensure all infrastructure and developments minimize light straying by developing a lighting control plan
 - Provide input to all tower proposals for the surrounding lands affecting the viewscape

4.3 TOURISM AND RECREATION

The Lake Nipigon Conservation Reserve provides excellent tourism and outdoor recreation opportunities such as world class angling, a chance to view species at risk, quality boating experiences and backcountry camping all within an exceptional natural landscape. Local communities such as Gull Bay, Nipigon and Beardmore benefit from tourism activity generated by the proximity of the Lake Nipigon Conservation Reserve.

Almost all existing tourism facilities associated with the conservation reserve are located outside its boundary in Gull Bay, Orient Bay and at Poplar Point and High Hill Harbour, however, it is the natural attractions of the

conservation reserve that fuel these businesses. Seven cruiser-boat operators charter multi-day trips around Lake Nipigon, providing accommodation and services. In addition there are approximately 25 to 30 day charter operators who take clients on half day or full day fishing excursions. Recreationists using Poplar Lodge Campground, High Hill Harbour and the various other access facilities as a starting point, radiate out into the conservation reserve, camping on islands/shoreline, sea kayaking, fishing and exploring.

The only tourism or recreation facility that exists within the boundaries of the conservation reserve is the South Bay access point. Many members of the public have commented that it is the wild and undeveloped nature of the Lake Nipigon Conservation Reserve that makes it such a special place to visit and would like to see it remain this way. Conversely, development in the conservation reserve has been suggested in the form of lodges and tourist outpost camps. Development of authentic Aboriginal campsites to be visited by tourists with a local First Nation host has also been proposed.

4.3.1 DIRECTION

Tourism development within the Lake Nipigon Conservation Reserve will be low impact and will include canoe routes, trail and lookout development, campsite improvement, signage and educational/interpretive material and displays. This lower level of development in the conservation reserve will complement the direction for facility-oriented development in some of the enhanced management areas around the lake. No large scale development in the form of lodges, outpost camps, recreation camps or eco-camps, etc. will be permitted. The feasibility and potential impact of developing a small number of traditional Aboriginal encampments will be considered as tourist attractions (Figure 6).

4.3.2 MANAGEMENT STRATEGIES

- a) Investigate the development of traditional Aboriginal encampments to be used as tourist facilities

- Conduct a literature search to determine if and where similar developments have occurred and their level of success
 - Consult with local First Nations to determine level of interest and the range of ideas
 - Allow the development of a small number of traditional prehistoric/historic Aboriginal encampments within the conservation reserve held under land use permit. Each development must be accompanied by a viable business plan and must demonstrate that no negative environmental impacts will result
 - Consider the need to rotate the sites to prevent environmental degradation
- b) Develop a canoe route, hiking trail(s) and lookout(s) in the Castle Lake Area
 - Investigate the chain of lakes in the Castle Lake area for potential canoe routes, trails and lookouts using aerial photography, field visits and local knowledge
 - Work to partner with local First Nations and/or tourist operators who could use this development to enhance their businesses (e.g., Armstrong lodge owners, cruiser boat operators on Lake Nipigon)
 - Plan development to ensure environmentally sensitive features will not be negatively impacted
 - Through partnerships, clear or improve existing portage trails between selected lakes, develop trails to lookouts where possible, establish campsites and erect signage marking the route
 - Develop a canoe route brochure, highlighting the dramatic topography of the area and distribute through tourist operators and other partners
 - c) Develop quality tourist information products
 - In partnership with the local municipalities, tourist outfitters, etc., develop a good quality colour map

handout of the Lake Nipigon Conservation Reserve and surrounding protected areas. Identify access points, trails, campsites, tourist facilities and restricted use zones, and include information on species at risk, low impact camping, local prehistory/history and significant plant species

- With partners, contract the development of display panels to be located at South Bay access point promoting the many attractions and features of the conservation reserve

4.4 FISH COMMUNITY AND FISHERIES

Lake Nipigon, the largest lake wholly within Ontario, supports a diversity of warm and cold water fish species. Although rainbow smelt has been recently (1976) introduced into the lake, the fish community remains basically unchanged from that which existed almost 100 years ago. The fishery has been used by Aboriginals for subsistence purposes for thousands of years and more recently for commercial fishing (1917) and sport fishing (1920s).

Two fish species at risk make their home in Lake Nipigon; the shortjaw cisco and deepwater sculpin. Both are ranked as threatened by the Committee on the Status of Endangered Wildlife in Canada. Little information is available for these species and no rehabilitation efforts, studies or recovery plans have been initiated/completed.

Whitefish is the mainstay of the commercial fishery, with other species such as walleye, lake trout, sauger and northern pike varying in their contribution to the fishery. The lake sturgeon fishery collapsed in the 1920s and it remains at a very low level. Reported harvests for lake trout and whitefish have been stable from 1990 to 1998. The commercial smelt fishery has exploded from 1000 kg annually in the early 1990s to 239,000 kg by 2000.

Currently commercial fishermen favour gillnetting over other methods of commercial fishing. This method results in incidental catches of non-targeted species such as lake

trout. Commercial fishermen are reluctant to try trapnetting or poundnets as a means of reducing incidental catches. There have also been requests for trawling licences for smelt but concern exists regarding the impact of trawling on non-target species and harmful disruption of bottom substrate. An experimental licence to trawl for smelt has been issued for three seasons with restrictive conditions.

Some conflict exists between the commercial fishermen and sport fishermen with regard to lake trout. Commercial fishermen would like an increase in the lake trout quota. Now that the sport fishing harvest of lake trout has increased, lake trout harvest levels may not be sustainable without direct harvest controls on the sport fishery or a reduced commercial quota or some combination of the two.

Walleye populations are degraded from overexploitation. Walleye and sauger harvests have remained low since the early 1990s. The commercial walleye and sauger fishery was recently closed lake-wide in April 2002 due to the degraded status of the populations. Wabinoosh and Ombabika Bays have been closed to all commercial fishing since 1996. Some commercial fishermen would like to see these bays closed to sport fishermen as well.

More information is needed for the management of the Lake Nipigon fishery. Levels of subsistence harvest are unknown. Stock status indicators are unavailable for all commercial and sport species except lake whitefish. It is not known whether Lake Nipigon fish populations are made up of many separate, genetically distinct populations or whether there is only one population. Lack of this knowledge makes management difficult.

There is a need for more information regarding the degree to which the tributaries to Lake Nipigon and surrounding lakes are used by Lake Nipigon fish, thus hampering effective management. There are barriers to migration in these tributaries, however, their location is not well documented. The level of angling use in these waters is unknown.

4.4.1 DIRECTION

The Lake Nipigon fishery and fish communities will be managed to maintain a world class sports and commercial fishery. The annual allowable harvest levels for each game and commercial species will be determined, taking into account the status of the stocks and the management objective for each species. In consultation with stakeholders, this annual allowable harvest will be divided up among the subsistence, commercial and sports fisheries. A cost-benefit analysis will be conducted to support allocation decisions between the sports fishery and commercial fishery. Once the allowable harvest has been determined, a direct harvest control mechanism for the sports fishery will be investigated. Types of direct harvest control systems include establishing check stations at access points to tally sport harvest of each species with a live release requirement after allowable harvest has been reached; or establishment of a tag system.

Collection and analysis of information and education of users will be a priority. Partners will be encouraged to become involved in both these endeavors. Sensitive fish habitat will be identified and appropriate measures taken to ensure its protection. Opportunities for fish habitat restoration will be investigated and could include restoring fish passage, repairing damage from log drives or stabilizing degraded shorelines near spawning areas.

A Lake Nipigon Fisheries Management Plan will be prepared by 2005.

4.4.2 MANAGEMENT STRATEGIES

- a) Improve management of the commercial fishery in order to reduce incidental catches, reduce the waste of non-marketable species, allow no over-harvest and ensure a world class commercial fishery is maintained
 - Encourage commercial fishermen to convert to live entrapment gear by providing training and funding to assist

with gear purchase

- Establish zone quotas based on stock discreteness and movement studies and consult commercial fisherman to develop a system for allocating zones
 - Ban gill nets in certain areas or depths and at times when non-target species are plentiful
 - Encourage harvest of smelts
 - Adjust the harvest for degraded species such as walleye and sturgeon until the fish populations recover
 - Buy out commercial licences on a willing seller basis as funds permit
 - Over the long term, reduce commercial fish quotas for all traditional sport fish species and reallocate to the sport fishery, leaving lake whitefish as the primary commercial species
 - Continue to monitor smelt trawling for level of incidental catch and degree of impact on substrate, habitat and species at risk through periodic on board inspections, and by examining substrate before and after trawling with the intent of prohibiting trawling if negative impacts are evident. Trawling will be reviewed during the development of the Fisheries Management Plan for Lake Nipigon
- b) Improve management of the sport fishery to ensure sport fish are not over-harvested and a world class fishery is maintained
 - Discourage fish derbies/trout hunts on Lake Nipigon or provide options for their modification to allow for live release of fish
 - Increase the chance of survival of released fish by allowing only artificial lures on a year round basis in addition to the existing single barbless hook regulation
 - Close South Bay spawning area to angling year round to protect fish habitat (Figure 6)

- Investigate reduced limits for some or all sport fish in Lake Nipigon
 - Increase enforcement efforts to improve compliance with fishing regulations
 - Investigate a direct harvest control system using a tag or check station system for some or all species to achieve stated species specific objectives (Sec. 3.4)
 - Review seasons, size and possession limits in relation to a direct harvest control system
 - Produce brochures, wallet cards, and provide rulers, videos, fact sheets as well as host seminars promoting proper angling and handling techniques and preventing introduction of exotics
- c) Improve the management and restoration of species at risk populations
- Conduct or partner in studies to determine the local status and habitat use of species at risk in Lake Nipigon
 - Develop recovery plans for rare, threatened and endangered species
 - Develop an identification system so commercial fishermen can report cisco by species rather than as a lumped group
 - Reduce all lake sturgeon harvest to zero
 - Promote awareness of province wide and national recovery plans for each species
- d) Increase the collection and analysis of information related to the management of the Lake Nipigon fishery
- Work with Anishinaabek Ontario Fisheries Resource Centre to incorporate traditional knowledge and increase First Nation participation in science information gathering
 - Develop stock status indicators for each individual sport and commercial species and develop a protocol for annually reviewing the commercial and sport quota for each species
 - Conduct tagging and telemetry studies and or genetic studies to determine discreteness of stocks, where they occur, whether tributaries are being used and to locate spawning areas and timing of spawn
 - Continue to monitor smelt populations through Lake Nipigon Fisheries assessment Unit (LNFAU) program and conduct research or partner in research to determine the impact of smelt on native Lake Nipigon fish populations
 - Encourage/work with the Aboriginal community to develop a system for determining total subsistence harvest and to develop a means of recording this on an annual basis
 - Work with bait fishermen to develop a reporting system to better establish which water body bait fish are harvested from within a harvest block and encourage or seek funding to conduct studies on Lake Nipigon bait fish
- e) Address the lack of information and improve the management of Lake Nipigon tributaries and surrounding lakes within the conservation reserve
- Inventory fish and fish habitat in surrounding lakes and tributaries to lake Nipigon
 - Inventory all stream crossings (rail and road) of tributaries in the conservation reserve to identify barriers to migration and work with DFO to ensure any problematic crossings are corrected

4.5 WILDLIFE

The Lake Nipigon Conservation Reserve is home to common boreal wildlife species as well as a number of important species at risk. Woodland caribou use the Lake Nipigon Islands for calving and summer habitat. The bald eagle population, previously devastated by the effects of DDT is now thriving. White pelican colonies have increased in size and number since their arrival on Lake Nipigon in the 1970s.

Caribou, pelicans and bald eagles require isolation to breed successfully. Potential increases in human activity in the area may negatively impact these species. Management of users will be required to ensure protection of these populations.

Caribou are known to winter near the Armstrong Airport, Jojo Lake area and in the area between Livingstone Point and Mungo Park Point. Migration to the Armstrong wintering area is generally from Wabinosh Lake northward to Castle Bay area and north along the Whitesand River. These routes and wintering areas may change as habitat changes.

Some information has been gathered on species at risk as well as moose and bear populations in the conservation reserve, however very little is known about insect, amphibian, reptile, bird or small mammal diversity and abundance. Increases and decreases in population numbers and the presence or absence of species is useful information for determining the health of the ecosystem and in making management decisions. Initial efforts were made in the 2001 field season to establish small mammal and bird monitoring stations at select locations within the conservation reserve.

Moose were protected from hunting in 1957 through the establishment of the Nipigon Islands Crown Game Preserve. However, the Islands were again opened to moose hunting from 1965 to 1970 during which time the population was decimated. Hunting large game on the islands has been a non-permitted use since 1970 and moose populations are

recovering slowly. The majority of the public who have provided input on this topic have indicated that they do not want to see the islands opened to moose hunting. Tourist operators have said that the chance for their clients to see a moose is worth more to them than a chance to hunt them.

Subsistence hunting by Aboriginals has occurred in the Lake Nipigon area for thousands of years. There is no information available estimating the current level of harvest for species such as moose, caribou, deer, bear, hare, grouse or waterfowl for subsistence purposes. This lack of information makes it very difficult to manage the non-Aboriginal hunt and ensure sustainability of these wildlife populations.

Fire is an important mechanism for forest renewal in the boreal ecosystem. Many years of fire suppression have altered the landscape in the boreal forest. Current and future availability of critical habitat for caribou in the Lake Nipigon Conservation Reserve needs to be examined and habitat management options investigated. Fire may play a useful role in managing for caribou habitat.

Additional bird species at risk have been sighted in the conservation reserve but are not confirmed breeders in the area (peregrine falcon, black tern). It has been determined that suitable habitat exists in the conservation reserve for these species, thus providing an excellent opportunity to work toward expanding their populations.

White pelican, bald eagle and double crested cormorant populations are increasing in the conservation reserve. Some fishermen are concerned that these fish-eating birds are negatively impacting fish populations, although the scientific literature does not support this.

White tailed deer exist along the south half of Lake Nipigon. Deer benefit from forest disturbance and the resulting early successional habitat, but are limited by the harsh winters of the boreal forest. It is unknown how the presence of deer impacts on the local moose and caribou populations.

Some concern exists about the possible negative effects of a brainworm parasite carried by white tailed deer which is fatal to moose and caribou. No white tailed deer hunting season currently exists in Wildlife Management Unit 15B (south and west of Lake Nipigon).

4.5.1 DIRECTION

Protection of wildlife and their associated habitat will take precedence over human use and development activities, especially in the case of species at risk. The collection of information needed to make management decisions will be given priority such as caribou tracking and establishing wildlife trend-through-time monitoring stations. The use of fire and silviculture for habitat management within the conservation reserve will be investigated. Hunting of big game on the islands will continue to be a non-permitted use. All known sensitive habitat (breeding colonies, nest sites, calving islands, etc.) will be protected through restricted use zoning as outlined in Section 4.2.2.(Figure 6).

4.5.2 MANAGEMENT STRATEGIES

- a) Work to ensure the continued existence of and optimally to expand the range and population size of the woodland caribou within the Lake Nipigon Conservation Reserve
 - Prepare a paper consolidating and summarizing all caribou studies and local knowledge concerning the Lake Nipigon and vicinity caribou population
 - Conduct tracking studies on Lake Nipigon caribou to further explore movement patterns and habitat use
 - Keep any structures/development (e.g., trail, campsite, trap cabin) away from known migration routes and islands of less than 30 hectares in size
 - Using computer modeling and field investigation, determine the availability of caribou habitat over time within the Lake Nipigon Conservation Reserve. Use this information to determine if/what

vegetation management is required to maintain caribou habitat over time

- Ensure a link is maintained between the Nipigon and Thunder Bay Districts and the Provincial Caribou Recovery Team regarding woodland caribou management
 - To encourage the understanding and appreciation of caribou by the public, investigate the opportunity to develop a viewing station at a mineral lick on Logan Island, to be promoted in partnership with tourist operators (cruiser boats)
- b) Develop estimates of current and future subsistence demand for wildlife in the conservation reserve
 - In consultation with Aboriginal communities around the lake, develop estimates of subsistence harvest for moose, caribou, deer, bear, hare, grouse and waterfowl from the islands and shore lands
 - Determine whether non-Aboriginal and Aboriginal harvests combined are sustainable
 - Encourage and assist in the development of a harvest reporting program to be administered by the Aboriginal communities
 - c) Improve information relating to small mammal, forest bird, amphibian and reptile populations as well as for species at risk
 - Establish long term trend-through-time monitoring stations at various locations in the conservation reserve including rare habitats, following standard protocols (e.g., Forest Bird Monitoring, Marsh Monitoring, Small Mammal Trapping Surveys)
 - Continue wildlife monitoring stations at Caribou Island and Geikie Island for forest birds, small mammals and salamanders and marsh monitoring programs at McCann Creek

- Establish scheduled regular monitoring for species at risk populations e.g., pelicans, peregrines and bald eagles to determine long term population trends and habitat use
- d) Address perceived issues relating to impacts of fish-eating birds on Lake Nipigon fish populations
- Develop and distribute educational material providing facts about feeding behavior of these species, their role in the ecosystem and the protected status of bald eagles and pelicans
 - Encourage and provide input into development of provincial policy regarding cormorant control
 - Encourage academic/naturalist organizations to conduct feeding and behavior studies for pelican, bald eagle and cormorant in the Lake Nipigon Conservation Reserve

4.6 VEGETATION

The Lake Nipigon Conservation Reserve is located in the boreal forest, and includes a variety of community types such as forests, wetlands, rock barrens, cliffs and open dunes. Vegetation communities change over time, as does their corresponding value to wildlife. The boreal forest is quite dependent on fire as a critical driver in its life history. Drastic shifts in vegetation structure (composition and age structure) are occurring in the conservation reserve as a result of fire suppression activities. Present fire suppression strategies have increased the length of time between fires by as much as 350 to 500 percent to 526 years. Some form of vegetation management will be required to maintain a healthy balance of vegetation communities and wildlife habitat in the conservation reserve as well as to ensure the protection/continuation of infrequent and underrepresented vegetation types.

Twelve arctic alpine disjunct plant species have been documented in the conservation reserve as well as four provincially significant

plant species. It is likely that other regionally and provincially significant and disjunct species would be identified if further field investigation were conducted. These species are associated with specialized habitat types.

4.6.1 DIRECTION

Vegetation in the Lake Nipigon Conservation Reserve will be managed to ensure the existence of a diversity of vegetative communities based on what the “*natural*” scenario should be and to meet habitat needs of the wildlife, with particular attention focused on caribou. Fire and silviculture (i.e. planting or seeding) within and adjacent to the conservation reserve will be used to achieve this direction.

Fire will be used and managed to achieve positive ecological benefits in disturbance dependent eco-systems. Fire will be allowed to fulfill its natural role on the islands of Lake Nipigon. Fire and Resource Managers will identify those areas in the conservation reserve where fire will be used to maintain, restore or enhance ecological diversity.

Unique habitats, vegetative communities and rare or significant flora will be protected. Efforts will be made to improve the level of knowledge of the vegetative communities and flora in the conservation reserve.

4.6.2 MANAGEMENT STRATEGIES

- a) Investigate and implement vegetation management techniques using fire to ensure the continued availability of habitat for caribou through space and time and to ensure a healthy ecosystem
 - Work with forest industry and Fire Management Section to identify candidate areas for fire renewal for select peninsulas - North Peninsula, South Peninsula, Bonner Island and peninsulas surrounding McIntyre Bay
 - Conduct studies in existing burned areas on the islands and shorelands to determine whether there is an adequate seed source to achieve desired results if prescribed burning were implemented to

manage vegetation and habitat or whether additional seeding or planting may be required to achieve desired future forest condition (i.e. spruce dominated)

- Based on computer modeling and studies, write a fire management plan designating areas on the islands and shorelands, that are suitable for prescribed burning as well as areas that will require seeding or planting
- b) Protect infrequent and under represented vegetation types such as old growth white pine, old growth red pine and old growth white spruce
 - Conduct site specific field studies of these sites to develop site specific vegetation management strategies to protect or rehabilitate these stands through time
- c) Improve information and knowledge of the floral and vegetative communities in the Lake Nipigon Conservation Reserve
 - Work with the Natural Heritage Information Centre, Thunder Bay Field Naturalists, the academic community and other interested partners to consolidate, collect and document information on the vegetative communities, flora and unique habitats present in the Lake Nipigon Conservation Reserve
 - Implement management strategies such as zoning sensitive vegetative communities as restricted from Crown land use, in order to protect and/or rehabilitate rare and unique species/communities
 - Prepare a pocket guide to the arctic alpine and 4 provincially significant plant species for distribution to staff and interested publics to increase awareness and to encourage protection and identification of the location of additional occurrences

4.7 CULTURAL HERITAGE

The Lake Nipigon Conservation Reserve and surrounding area has a rich and varied past. A number of efforts have been made by various organizations and individuals to document the prehistory and history of the area, although much is left to do. Prehistoric campsites have been documented on the lakeshore dating back thousands of years. Lake Nipigon was also the centre of some fierce rivalries during the fur trade, resulting in many trading posts being built in the conservation reserve area.

There are most certainly many more prehistoric and historic sites located in the conservation reserve that have yet to be discovered, resulting in the concern that these sites may be inadvertently destroyed through recreational or tourism activity.

4.7.1 DIRECTION

The intent with regard to cultural heritage is to improve the current level of knowledge, to increase public appreciation and understanding and to ensure the protection of cultural heritage values in the conservation reserve. This direction will be achieved through partnering and by managing Crown land use activities. In all cultural heritage management initiatives, MNR will endeavor to work with local Aboriginal communities to encourage their involvement in collecting and recording cultural information and in educating the public.

4.7.2 MANAGEMENT STRATEGIES

- a) Improve the knowledge base of prehistoric and historic sites and associated activities in the conservation reserve
 - Encourage the collection, consolidation and interpretation of cultural heritage information through partnerships with local historical societies, museums, Aboriginal communities, universities, municipalities and other ministries
 - Keep an up-to-date record of known cultural values in the MNR office to assist in managing Crown land use to prevent

negative impacts to cultural resources

- Ensure that the exact location of archaeological/cultural sites is not divulged to the public in order to limit the impacts of site disturbance
- b) Incorporate cultural heritage information in displays and public handouts to improve public awareness and understanding
 - Proposed displays at South Bay Access, Poplar Lodge Campground and at tourist information booths will incorporate cultural heritage information pertaining to the Lake Nipigon Conservation Reserve and surrounding area
 - Develop a cultural heritage educational brochure for the Lake Nipigon area to be made available to the public through partners (tourist operators, municipalities, museums, tourist information booths, etc.); outline the laws around removing artifacts from Crown land

4.8 WATER RESOURCES

The waters of Lake Nipigon are undeniably a significant resource. Unlike the Great Lakes, Lake Nipigon's fish communities and limnological characteristics have remained almost unchanged since they were first sampled nearly 100 years ago. This is likely attributable to the undeveloped nature of the lake, a surprising fact given its close proximity to railways and Highways 11 and 17. However, there are threats to Lake Nipigon's relatively pristine condition, associated with its use and management.

The construction of the Waboose Dam in 1942 and the creation of the Ogoki Reservoir, increased flows in the Little Jackfish River from 4m³/s to 120 m³/s and turned this minor stream into a soft, excavated, wide channel. It is estimated that 30 million cubic metres of sediment were released from the Little Jackfish River Between 1943 and 1972. This resulted in 9 metres of sediment being deposited near the river mouth in Ombabika Bay. This sediment loading has caused and continues to cause significant habitat

degradation (lower light penetration and silt deposition) in Ombabika Bay.

The dams on the Nipigon River continue to impact fish and invertebrates on the river due to drawdown, despite the implementation of the Lake Nipigon and Nipigon River Water Management Plan. It is not clear whether the drawdown is also impacting fish spawning success on Lake Nipigon. The Namewaminikan River dam was breached in 1993 and tonnes of sediment were washed downstream. The dam powerhouse is currently in disrepair.

Up-to-date and complete information relating to water quality, zooplankton, phytoplankton and benthos in Lake Nipigon is not available, although recent data (2001) was collected for West Bay, Wabinoosh Bay, McIntyre Bay, South Bay and Humboldt Bay. There are no standardized sampling protocols for the lake nor are there any long-term monitoring stations. Transfer of limnological and contaminant-monitoring data between agencies such as universities and the Ministry of the Environment is poor. Similarly, as the headwaters to the Great Lakes system, Lake Nipigon should be linked into the Lake Superior Management Committee to ensure that Lake Nipigon water quality objectives and other lake objectives are compatible with the Lake Superior basin plan. This is not currently the case.

The level of pollution occurring from areas of human development, houseboats/cruiser boats and heavily used campsites and access points is not known. Elevated levels of copper, zinc and toxaphene have been noted in the lake.

Elevated mercury levels have been detected in fish from Lake Nipigon and consumption restrictions apply to some species, although this is not well known by members of the public. In more recent studies, elevated levels of toxaphene were found in some Lake Nipigon fishes.

Introduction of exotic species is a concern shared by MNR and members of the public. The spiny water flea was recently introduced

into the lake and many people fear that the zebra mussel will also make its way into Lake Nipigon if direct action is not taken.

Although mandatory boat washing has been suggested as a means of reducing the likelihood of accidental introductions of exotic species, this has proven ineffective and cost prohibitive to administer and implement when attempted elsewhere in North America.

4.8.1 DIRECTION

Maintenance of a healthy watershed will be the priority in all water management decisions pertaining to the Lake Nipigon Conservation Reserve. Effort will be spent increasing the information base relating to water quality and limnology for Lake Nipigon and its tributaries, using partnerships whenever possible. Zero-discharge will be the goal with regard to pollution input into Lake Nipigon. Fish culture will not be permitted in Lake Nipigon. Potential introduction of exotics into Lake Nipigon will be addressed through public education and further research.

4.8.2 MANAGEMENT STRATEGIES

a) Improve collection and interagency transfer of information

- Establish conditions on all scientific collector's permits requiring that all data be transferred to the Nipigon District MNR within a specified time
- Establish standard protocols with other agencies and universities to ensure any water related data collected is transferred
- Establish water quality objectives for Lake Nipigon
- Initiate water quality, plankton and benthos studies throughout Lake Nipigon and Lake Nipigon tributaries with the goal of establishing long term trend-through-time monitoring stations at key locations
- Develop partnerships with charter boat operators, anglers, commercial fishermen and cottagers to collect key water quality data on a regular basis following standard protocols

b) Implement a zero-discharge or "*pollution free*" policy for Lake Nipigon

- In cooperation with other regulatory agencies, use aerial thermography and site inspections to identify and document pollution inputs into Lake Nipigon
- Through remedial action, address any sources of pollution (e.g. repairing malfunctioning septic systems, proper disposal of garbage/waste)
- Require sealed holding tanks for all houseboats and cruiser boats on Lake Nipigon and with cooperation from partners (municipalities, Ministry of Tourism, Department of Fisheries and Oceans), ensure that boats are equipped and facilities are used to properly manage waste water

c) Address habitat degradation relating to hydroelectric development

- Identify concern regarding erosion in Ombabika Bay due to the Ogoki Diversion in writing to Federal Department of Fisheries and Oceans and Ontario Power Generation with intent of jointly developing a plan to correct the problem
- In developing new direction, make reference to the erosion control plan developed for the Little Jackfish River by Ontario, as part of the Environmental Assessment of the proposed hydroelectric development
- Ensure that required repairs are completed on Namewaminikan River Dam so that there is no reoccurrence of sediment washing into the river and Lake Nipigon as previously occurred in 1993
- Initiate studies or partner with Ontario Power Generation to determine where fish habitat impacts are continuing to occur on Lake Nipigon and institute corrective measures

d) Take action to help prevent the introduction of exotics into Lake Nipigon

- Work with partners to establish signage at all access points, educating the public about the importance of keeping exotics out of Lake Nipigon and how best to achieve this (e.g., no dumping of bait buckets, live wells, washing equipment)
 - Educate local tourist operators, commercial fishermen and campground operators and enlist their support in the education of the public
 - Research management strategies implemented elsewhere to deal with exotics in an effort to determine what might prove a successful strategy for Lake Nipigon
- e) Work with MOE to improve public awareness of fish contaminant levels and fish consumption restrictions for Lake Nipigon
- Collect and provide fish samples to the Ministry of the Environment (MOE) for contaminant sampling on a routine basis and encourage timely processing and reporting to MNR
 - Ensure that local residents are made aware of consumption restrictions; providing public notice when changes occur
 - Assist the Ministry of the Environment in working with local communities to develop a communication system to ensure that contaminant levels are well known and any changes in levels are quickly communicated to local residents

5 PLAN IMPLEMENTATION

MNR has the lead role in implementation of this strategy and is committed to keeping it current and relevant through appropriate monitoring and amendments.

Plan implementation will ensure that the *Environmental Assessment Act*, *Environmental Bill of Rights* and other pertinent legislation are adhered to at all times.

Completion of the projects and activities described in this strategy and any ancillary strategies is dependent on the availability and allocation of funding in accordance with priorities established by the Ministry of Natural Resources and the Government of Ontario. The MNR will pursue opportunities for partnerships with other agencies and interest groups in the funding and implementation of activities and programs identified.

Operational and work plans developed to implement the direction of this resource management strategy must be consistent with the objectives and strategies identified herein. Some flexibility in applying plan direction in site-specific operational situations to address biophysical circumstances and include technical expertise is recognized.

5.1 INVENTORY, MONITORING, ASSESSMENT AND REVIEW

Inventory, monitoring, assessment and review are essential to the effective implementation of this plan and are an integral part of the management strategies identified. This includes, for example, inventory and monitoring of fish and wildlife populations, vegetative communities, habitat availability and recreational use and impact. Other sources of important information include creel surveys, data gathered by the Lake Nipigon Fisheries Assessment Unit, regular consultation with the Nipigon Watershed Advisory Committee and statistics collected by the Ministry of Tourism. All of this information is necessary to ensure that plan objectives are being met and policies remain current and relevant.

5.2 PLAN REVIEW AND AMENDMENT

There is no intent to carry out a comprehensive review of the Lake Nipigon Conservation Reserve Resource Management Strategy at any prescribed interval. Using adaptive management, the resource management policies in this document will be kept current through periodic amendments resulting from changes in government policy, new resource information or in response to public need.

Proposed amendments must not alter the overall intent of the Lake Nipigon Conservation Reserve Resource Management Strategy. An amendment to the plan may be requested at any time and the District Manager will decide whether or not to consider it. Requests for amendments must have a basis in fact, demonstrably relate to the scope of the plan, and respond to changing resource conditions, new information,

changing government policies or public need. The MNR also has the authority to initiate amendments in response to new information or changed conditions.

Amendments will be classified as either minor or major. Minor amendments are those changes that do not have a negative effect on the public, adjacent landowners or the environment and are generally administrative in nature. Minor amendments will be approved by the District Manager and will not normally be subject to public consultation.

Major amendments have a significant social, economic and/or environmental impact. Major amendments will be reviewed by the MNR District Manager and submitted to the Regional Director for approval. Public consultation will occur for all major amendments and notice of all major amendments will be posted on the EBR electronic registry.

TABLE 3: CROWN LAND INFRASTRUCTURE AND ASSOCIATED TENURE

FORM OF TENURE	ISSUED TO	LOCATION	PURPOSE
Land Use Permit	Individual	North west shore of Albert Island	Personal Recreational Camp
Land Use Permit	Boy Scouts of Canada	SW side of Forgan Lake	Club House / Camp
Land Use Permit	Nighthawk Charters	McIntyre Bay, N. of Cannister Cr.	Docking
Letter of Authority	For Trapline NG11	Little Bonner Lake	Trap Cabin
Letter of Authority	For Trapline NG21	Shoreline of Lynx Bay	Trap Cabin
Letter of Authority	For Trapline NG21	Shoreline of West Bay	Trap Cabin
Letter of Authority	Individual	Prince of Wales Island, East side	Commercial Fish Cabin
Letter of Authority	Individual	Alexander Island, Patch Point	Commercial Fish Cabin
Letter of Authority	Individual	West Shore of Grand Bay	Commercial Fish Cabin
Letter of Authority	Individual	Colter's Harbour	Commercial Fish Cabin
Letter of Authority	Individual	NW of Champlain Point	Commercial Fish Cabin
Letter of Authority	Individual	Gravel Point	Commercial Fish Cabin
Letter of Authority	Individual	Bell's Island	Commercial Fish Cabin
Letter of Authority	Individual	Undercliff Island	Sweat Lodge
Letter of Authority	Individual	Ellis Island	Commercial Fish Cabin
Letter of Authority	Individual	Ellis Channel	Commercial Fish Cabin
Letter of Authority	Individual	Ellis Island	Commercial Fish Cabin
License of Occupation	Individual	Davis Island	Recreation Camp

6 BACKGROUND INFORMATION

6.1 INFRASTRUCTURE AND LAND TENURE

Highway 17 runs across the south end of the Lake Nipigon Conservation Reserve. To the west of Lake Nipigon, Highway 527 provides access to the communities of Whitesand, Armstrong and Gull Bay. Highway 580 links the community of Beardmore to the east shore of Lake Nipigon. Highway 585 runs north along the west side of the Nipigon River from Highway 17, north to Pine Portage, an access point to Lake Nipigon. A number of secondary and tertiary roads exist in the conservation reserve. South Bay Road provides access to the South Bay Access Point. Chief Bay Road provides access to the water in north Chief Bay and the Wabinosh Road extends south from the Pikitigushi Road along the western boundary of the conservation reserve, providing access into the Castle Lake area. The Humboldt Bay Road and Ombabika Bay Road branch off of the Auden Road and extend into the conservation reserve.

The main transcontinental Canadian National Railway (CNR) line runs north of Lake Nipigon. A second CNR Line travels south of the Lake Nipigon Conservation Reserve, crosses at Pijitawabik Bay, and heads northeast toward Beardmore. Although the Trans-Canada Highway is located directly south of the Lake Nipigon Conservation Reserve, very little development has occurred in this area. The islands, Lake Nipigon shoreline and surrounding lands are almost exclusively Crown owned.

Alienated lands within the Lake Nipigon Conservation Reserve include the Indian Reserves of McIntyre Bay and Jackfish Island, and a number of patent parcels located just south of McIntyre Bay.

Infrastructure exists on Crown land within the conservation reserve in the form of trappers cabins, commercial fish cabins and recreation camps. Some of these structures are authorized through various forms of tenure such as land use permits, letters of authority and licences of occupation (Table 3).

Other structures are not authorized and have no form of tenure.

First Nations whose members carry out traditional activities such as fishing, hunting, trapping and gathering within the conservation reserve are allowed to construct a cabin for use by their members. Current ministry policy (interim) permits the building of structures that are incidental to the exercise of a treaty right, in consultation with the local Ministry of Natural Resources.

There are other untenured structures within the conservation reserve are that are considered unauthorized occupations of Crown land. This list of untenured occupations on Crown land includes approximately 15 trap cabins, and 10 - 15 other buildings used for a variety of purposes (e.g., recreation, hunting, commercial fishing).

6.2 ACCESS POINTS AND FACILITIES

There are 6 access points to Lake Nipigon that are located on Crown land and within the boundaries of the Lake Nipigon Conservation Reserve; South Bay (2), Chief Bay, Humboldt Bay (2) and Ombabika Bay access points. Three waterways provide access to northern Lake Nipigon from the CN rail line; Whitesand River, Pikitigushi River and Little Jackfish River and the Onaman River provides access into Humboldt Bay. South Bay is an approved public access point while the access points in Chief, Humboldt and Ombabika Bays are unofficial/unmaintained access points.

There are two access points in South Bay, an old access and a new one. The old access point is located at the bottom of the Bay and consists of a large clearing and boat ramp. This area of the bay was developed some 30 years ago and has been used for access and Crown land camping. Important brook trout spawning habitat exists at the old location which is in jeopardy from the access activity. In response to this concern, the Ministry of Natural Resources constructed a new access point on the southeast side of South Bay. Facilities include a concrete launch ramp, a

dock, a small sandy beach, signage and a parking area. The South Bay Anglers Association and MNR jointly maintain this access point.

The access point at Chief Bay is not heavily used, does not include any facilities and is not maintained. There is a rough road leading from a forest access road to a river flowing into the north end of Chief Bay. A small boat can be launched into the river.

The access points at Humboldt and Ombabika Bay are not maintained and can often only be accessed by snowmachine or all terrain vehicles due to rough roads and fallen trees. There are a number of commercial fish cabins/campers at Humboldt Bay South but otherwise there are no facilities at these access points. The Onaman River which flows into Humboldt Bay, can be accessed via the road accessible Onaman River Resort.

There are a number of good quality access points to Lake Nipigon, located outside the conservation reserve boundaries on Crown land and private land. On the southeast shore of Lake Nipigon the municipally operated by Poplar Lodge Campground and High Hill Harbour Marina, held under licence of occupation and land use permit, provide excellent access facilities including docking, boat ramps, washrooms, campsites and parking. Pine Portage Access Point is located on a Crown lease held by Ontario Power Generation and provides access into Forgan Lake and southern Lake Nipigon. Facilities include a dock, boat ramp and parking. The communities of Macdiarmid and Biinjitiwaabik Zaaging Anishinaabek (Rocky Bay) and the Sandpoint Reserve provide access to the east shore of the lake, while on the west shore access is available at Kings landing, in the Gull Bay Enhanced Management Area, and the Gull Bay Indian Reserve. Poshkokagan River access, an access point located outside the Basin Signature Site, provides access to Chief Bay in southern Lake Nipigon. Pishidgi Lake access point provides access to the west shore via the Kopka and Wabinoosh Rivers. Finally, private access facilities are available at tourist establishments located in Orient Bay.

6.3 PREHISTORY AND HISTORY

Lake Nipigon and its surrounding shorelines have played an important part in Ontario's prehistory and history. Although the extent of archaeological research in the Lake Nipigon area is far from complete, archaeologists have discovered prehistoric sites that are representative of three distinct periods, Archaic, Initial Woodland and Terminal Woodland as well as historic sites from the fur trade and early settlement era. Further research may reveal the presence of earlier cultures.

About 7,000 years ago a changing climate and distribution of plants and animals resulted in a transition from the Paleo-Indian culture to the Plains Archaic and Shield Archaic Traditions. The Shield Archaic people were indigenous to the boreal forest north of Lake Superior. The most important development of the Shield Archaic culture was the use of native copper found on the shores of Lake Superior to make tools and personal ornaments. There is evidence that copper tools were being traded heavily across North America during this time. One Shield Archaic site has been documented in the Lake Nipigon Conservation Reserve on Mystery Island at the north end of Pijitawabik Bay.

Around 2,500 years ago, the Laurel Culture of the Initial Woodland Period succeeded the Shield Archaic people and lasted until approximately 1000 years B.P. The Initial Woodland people gathered seasonally to socialize, fish and gather food, resulting in the establishment of larger settlements at prime fishing grounds. The appearance of pottery marked the Initial Woodland Period. The Laurel Culture made small conical jars with distinctive impressed decorations. Nine archaeological sites associated with the Initial Woodland Period have been documented on the islands and shoreline of the conservation reserve. Some of these sites also show evidence of other cultural periods.

The Terminal Woodland cultural period followed the Initial Woodland around 1,000 years ago and lasted until the time of European contact. The Blackduck and Selkirk

Cultures marked the beginning of the Terminal Woodland Period with distinct pottery styles, differing from that of the Laurel culture. Pictographs of humans and animals found on Lake Nipigon are thought to be associated with the Terminal Woodland Period. Two such pictograph sites are located in the Lake Nipigon Conservation Reserve at Gull Bay and Undercliff. Fifteen Terminal Woodland archaeological sites have been documented in the conservation reserve. Many of these sites show signs of earlier prehistoric and historic use.

Lake Nipigon and its surrounding shore lands were important to prehistoric peoples for their subsistence and survival and continued to be important with the onset of European contact. Lake Nipigon was at the center of the conflict between the Northwest Company and Hudson Bay Company as they struggled for control of the fur trade. In order to facilitate trade with the Aboriginals, both companies, first the Northwest Company and then the Hudson Bay Company, began to build trading posts in the interior of the boreal forest. Due to its ideal location as an aquatic link between Lake Superior and Hudson Bay, Lake Nipigon became home to 19 trading posts, built between 1684 and 1937. Archaeological investigations have occurred at some of these sites.

Construction of the Canadian Pacific Railway through the Town of Nipigon was completed in 1885. In 1903, construction of the National Transcontinental rail line running north of Lake Nipigon was initiated. Finally, construction of a third transcontinental rail line running along the shore of Pijitawabik Bay and east toward Longlac was completed in 1914. The easy access provided to Lake Nipigon by this railroad and the onset of World War I with its associated food shortage, resulted in a new stage in Lake Nipigon's history. In 1917, Lake Nipigon was opened up to large scale commercial fishing.

The previously untouched stocks were quickly over-fished with a peak harvest of 2.3 million pounds in 1919. Fish were unloaded at Macdiarmid and transported by horse-drawn wooden sled over cleared ground to the

Canadian National Railway line for shipment. Lake sturgeon populations were decimated by 1926 and have never recovered. The commercial fishery continues to be an important source of income for local Aboriginal residents.

Logging first occurred within the conservation reserve in the late 1800s and early 1900s to provide lumber for trestle timbers and ties used in railway construction. As paper mills were established in Port Arthur, Sault Ste. Marie, Nipigon and Red Rock, pulpwood logging became more prevalent. Early forestry was much more labour intensive than it is today, requiring log drives along most of the major tributaries flowing into Lake Nipigon. Log booms were made in Chief Bay, Humboldt Bay, Gull Bay, McIntyre Bay and Poplar Point, then hauled to Red Rock or Thunder Bay within the year for processing. Evidence of these early booms is apparent in these Lake Nipigon bays today, where a layer of bark and wood debris can be seen on the lake bottom. Remnants of old logging camps can still be found on the shores of Lake Nipigon.

The early 1900s saw the development of another resource industry in the Lake Nipigon Basin, hydroelectric power generation. A series of four dams (Cameron Falls, Virgin Falls, Alexander, Pine Portage) were built on the Nipigon River from 1918 to 1950. The second dam, Virgin Falls, was built in 1925 to control water levels on Lake Nipigon. This dam created the largest reservoir in existence and raised Lake Nipigon by 15 cm (0.48 ft). Pine Portage, built in 1950, was the fourth dam constructed on the Nipigon River and it too raised the water level of Lake Nipigon by 12 cm, flooding over the Virgin Falls Dam. In addition to the damming of the Nipigon River, the Waboose Dam was built on the Ogoki River in 1942 to divert water flowing north, southward to the Great Lakes. The Waboose Dam flooded the waters back to the height of land where a channel was constructed to allow the water to flow south. The Summit Control Dam was built across this channel. From this dam, the water flows through a series of lakes into the Little Jackfish River and

then Lake Nipigon. The Ogoki diversion increased the Lake Nipigon level by 35 cm, and increased the flows in the Little Jackfish River from approximately 4 m³/s to approximately 120 m³/s resulting in excessive erosion and siltation in the river and Ombabika Bay.

6.4 NATURAL RESOURCES AND ENVIRONMENT

6.4.1 CLIMATE

Lake Nipigon occurs within Ecoregion 3W. Because of the moderating effect of the lake, the regional climate is characterized as “*modified continental*”; with long, cold winters and short, warm summers. Typical of the lake are high humidity conditions and depressed spring and summer temperatures, particularly along the shoreline. The coldest month is January with a mean temperature of -16.6°C and the warmest month is July with a mean temperature of 17.0°C. The lake generally freezes by late December. Most precipitation occurs in August and September, with an average of 89.9 mm and 90.8 mm of rainfall respectively. The heaviest snowfall occurs in December and January, with 49.5 cm and 50.9 cm respectively (North-South Environmental, 2001).

6.4.2 EARTH SCIENCES

Bedrock Geology

The entire basin of Lake Nipigon lies within the Canadian Shield, an extensive rolling bedrock dominated plain consisting predominantly of Precambrian crystalline igneous and metamorphic rocks with minor occurrences of sedimentary rocks (North-South Environmental, 2001). The Canadian Shield is divided up into a number of provinces and sub-provinces on the basis of overall differences in internal structure and style of folding (Stockwell in MNR, 1987). Lake Nipigon and most of its shoreline and islands lie within the Nipigon Plate, a sub-province of the Southern Province of the Canadian Shield. The northern shore of the lake and portions of the eastern shore lie

within the larger Superior Province of the Canadian Shield.

The oldest Precambrian rocks are represented by east-west trending belts of Archean (early Precambrian) metavolcanic and metasedimentary rocks. These east-west trending formations, commonly referred to as ‘Greenstone Belts’, were later intruded by granite bodies during periods of mountain building. Granitic rocks occurring either as massive to weakly foliated plutons, formed from the cooling of magma at depth, or as layered migmatitic rocks derived from the partial assimilation of preexisting volcanic and sedimentary rock.

The Southern Province bedrock is dominated by extensive, flat-lying, Logan and Nipigon diabase sills. These make up the famous Nipigon Plate assemblage of Proterozoic (late Precambrian) mafic to ultramafic intrusive rocks that cover a large portion of the Lake Nipigon Conservation Reserve. The Nipigon Plate rocks form one of the more interesting and scenic features in the area. Over time, the softer sedimentary strata have been eroded away, leaving spectacular displays of cliffs and outcrops, particularly on the northwest shore of Lake Nipigon in Castle Bay, at Undercliff, Pijitawabik Bay and on Inner and Outer Barn Islands (North-South Environmental, 2001).

Surficial Geology

The surficial geology of the Lake Nipigon Conservation Reserve is dominated by events that occurred during the late Wisconsin glacial period and during the early Holocene, or post-glacial period. The landscape is dominated by an eroded, glacially molded bedrock surface with pockets and localized deposits of glacial till, peat, and glaciolacustrine sands and silty clays.

During the late Wisconsin glacial period, small, localized, shallow pockets of ground moraine (a non-stratified, not obviously sorted sediment) were deposited between numerous rock outcrops. The major glacial events of the study area are marked by four moraines – the Kaiashk, Onaman, Nipigon,

and Crescent moraines. Essentially, the study area was ice covered until the very latest stages of the retreat of the Wisconsin glacier. As the ice retreated, Glacial Lake Kelvin formed along the ice margin, eventually occupying all of the current Lake Nipigon Basin. Lake Kelvin subsequently drained into Lake Superior forming the present-day Lake Nipigon.

Within the conservation reserve, shallow water sand deposits (plains and beaches) of Glacial Lake Kelvin are best represented along the north and northeast shores of Lake Nipigon, particularly north of Windigo Bay. Occasional deeper water silty clay glaciolacustrine deposits of Lake Kelvin are found along the southwest shore and to the east in the vicinity of Humboldt and Ombabika Bays (North – South Environmental, 2001).

In the Lake Nipigon watershed, the overburden of Lake Nipigon is primarily characterized by morainic material comprised of silt and sand. This was a result of erosive action by the retreating glacier that was accompanied by the deposition of outwash sand and gravel. These deposits characteristically are sorted and stratified and usually comprise important aggregate resource areas. Notable deposits occur in Innes Township and north of Windigo Bay (MNR, 1987).

Fine sand, silt and clay were deposited over much of the Lake Nipigon area adjacent to Gull Bay, English Bay, Windigo Bay, Ombabika Bay and Humboldt Bay. These sediments represent disposition in relatively deep water and indicate inundation by a glacial lake (MNR, 1987).

Deltas were formed wherever glacial meltwater systems emptied into Lake Kelvin. For example, the deltaic sand and gravel which occurs in the Southeast Lake Nipigon area represents the discharge of the Jellicoe spillway. It is considered that this spillway functioned during the lower, relatively short-lived level of glacial Lake Kelvin.

There are numerous areas exhibiting lacustrine (lake bottom) deposits from glacial Lake Kelvin which are susceptible to erosion and are generally associated with the major rivers that drain into the lake. These are most evident in the north end of the lake from the Whitesand River eastward, notably in Windigo and Ombabika Bay areas. These layered sands, clays and silts from the bottom of glacial Lake Kelvin are well exhibited in the banks of the Little Jackfish and Pikitigushi Rivers. These rivers carry considerable silt loads, resulting in sedimentation and deposition at the river mouths (MNR, 1987).

Numerous escarpment features also exist throughout the Lake Nipigon Conservation Reserve, particularly along the North Peninsula, the northwest shore, and south of Pijitawabik Bay and Forgan Lake. The formation of these escarpments was controlled by the thick horizontal diabase sills in these areas that were eroded in part by catastrophic drainage of glacial Lakes Agassiz and Kelvin.

6.4.3 VEGETATION COMMUNITIES

Forests

The Lake Nipigon Conservation Reserve is located within the Boreal Forest Region, Nipigon Forest Section (Rowe, 1972) and Hills (1959) ecodistrict 3W-3. Typically, better drained sites have a mixed forest cover composed of trembling aspen (*Populus tremuloides*), white birch (*Betula papyrifera*), white spruce (*Picea glauca*) and balsam fir (*Abies balsamea*), sometimes with admixtures of red (*Pinus resinosa*) and white pine (*Pinus strobus*) (OMNR 1982, 1986). In areas protected from fire, white spruce and balsam fir attain dominance. Jack pine (*Pinus banksiana*) is characteristic of dry uplands, while black spruce (*Picea mariana*) is common in lowland situations. Table 4 outlines the occurrence of vegetation types in the Lake Nipigon Conservation Reserve.

Most of the larger islands in Lake Nipigon are forested, while smaller islands are typically bare rock with limited vegetation occurring in sheltered crevices. The present forest cover

originated after fires swept the area almost 150 years ago (Nolan 1970, Gollat 1976). Dominant species on the northern islands are black spruce, white spruce and balsam fir. Gollat (1976) also observed scattered mature and over-mature stands of trembling aspen and some isolated jack pine. A few small, old jack pine stands occur on Shakespeare Island and Geikie Island. The more humid climate and decreased frequency of fires on the islands results in conditions that are conducive to the development of older forest stands, in which the recruitment of young trees is much reduced and a broken canopy characteristic of old growth forests develops.

Wetlands

Extensive open wetland communities are located throughout Lake Nipigon on the protected bays, including open water, graminoid (sedge and grass) and meadow marshes. These wetland communities tend to exhibit strong patterns of zonation from deep to shallow areas. In the deeper water, open water marshes include plants such as submerged pondweeds (*Potamogeton spp.*) and water milfoil (*Myriophyllum*). Graminoid marshes form in the shallower water with emergent plants including wool-grass (*Scirpus cyperinus*) and softstem bulrush (*Scirpus validus*) (North-South Environmental, 2001).

Riparian wetlands along the rivers that drain into Lake Nipigon generally show a zonation pattern from deep, fast moving water to slow water areas to floodplains that are only seasonally flooded. The faster moving open water areas along rivers are dominated by submerged pondweeds (*Potamogeton spp.*), while slow moving waters can also have bullhead lily (*Nuphar variegata*) and common coontail (*Ceratophyllum demersum*). Meadow marshes are located at the edge of riverbanks and at river mouths on Lake Nipigon where flooding is common. Along riverbanks in areas that are only seasonally flooded, and on raised beach ridges that run parallel to the Lake Nipigon shoreline, thicket swamps occur (North-South Environmental, 2001).

Within the Lake Nipigon Conservation Reserve, fens are not a common vegetation community, only occurring inland along creeks, small rivers and at the edge of smaller lakes. Typically, open floating mat fens are present along the water's edge, followed by low shrub fen further inland where the peat mat is anchored, and finally a treed fen consisting of black spruce and shrubs at the outer edges. Pools and small channels within the fen support small populations of submergent marsh species such as bladderwort (*Utricularia spp.*), pondweed and bullhead lily (North-South Environmental, 2001).

True bogs are extremely rare in the conservation reserve. Sphagnum moss forms hummocks which support shrubs such as labrador tea (*Ledum groenlandicum*), leatherleaf (*Chamaedaphne calyculata*) and small cranberry (*Vaccinium oxycoccus*). Bogs are typically very species poor, supporting only a limited flora due to a lack of nutrient rich water (North-South Environmental, 2001).

Rock Barrens, Cliffs, Talus Slopes

Rock barrens, cliffs and talus slopes are found throughout the conservation reserve. These sites often have features resembling arctic tundra ecosystems including northern or eastern exposures, low annual temperatures, extreme temperature amplitudes, high humidity, a lack of tree cover (and competition from trees and shrubs), and long hours of sunlight. As a result, these areas also tend to have a high concentration of arctic-alpine disjunct species (Table 5). Typical flora of rock barrens includes a layer of lichens, sedges, low sweet blueberry (*Vaccinium angustifolium*), velvet-leaf blueberry (*Vaccinium myrtilloides*), and rock cranberry (*Vaccinium vitis-idaea ssp. minus*). Vegetation of exposed bedrock beaches along the Lake Nipigon shoreline typically includes lichens, rushes (*Juncus spp.*), goldenrod (*Solidago spp.*), cinquefoil (*Potentilla spp.*) and balsam poplar seedlings.

Cliffs have scattered pockets of vegetation concentrated on ledges and in crevices.

Typical species can include lichens and mosses as well as fragrant wood fern (*Dryopteris fragrans*), rock polypody (*Polypodium virginianum*), and northern beech fern (*Phegopteris connectilis*). In sheltered areas stunted black spruce and white birch can be found. The unstable boulder talus at the toe of the slope can vary from bare rock, covered only by crustose lichens and mosses with sparse herbs growing in crevices and soil pockets, to deciduous white birch stands. More stable talus slopes can support white cedar mixed wood communities.

Sand Dunes and Bluffs

Sand dunes and bluffs are found scattered along the shores of Lake Nipigon. Open dunes and bluffs are fairly common throughout the Lake Nipigon Basin. These communities typically have only scattered areas of vegetation interspersed with large areas of bare sand. Where vegetation is present, lichens (*Cladina rangiferina*, *Cladina stellaris*, *Cladina mitis*, and *Stereocaulon spp.*) dominate. Other common species include bearberry (*Arctostaphylos uva-ursi*), spreading dogbane (*Apocynum androsaemifolium*), rocky mountain fescue (*Festuca saximontana*), slender mountain-rice (*Oryzopsis pungens*) and white-grained mountain-rice (*Oryzopsis asperifolia*).

6.4.4 FLORA

The Lake Nipigon Conservation Reserve's flora is predominantly boreal, with some added complexity resulting from the occurrence of species more commonly found in the Great Lakes – St. Lawrence Forest and species of arctic-alpine affinity (OMNR 1982, 1986). In general, the flora of the islands tends to be less diverse than the flora of the mainland (MNR 1982, 1986).

A very low percentage of Lake Nipigon Conservation Reserve's plants are non-native. A large proportion of these species have been documented from highly disturbed areas such as roadsides, open fields, railway ballasts and burnt areas.

There are 4 provincially significant vascular plant species and 12 plant species with arctic-alpine affinities documented for the Lake Nipigon Conservation Reserve (Tables 5 & 6). Although wetlands, dunes, beaches and rock barrens make up a very small fraction of the conservation reserve landscape, they harbour a disproportionately large percentage of the floral diversity (North-South Environmental, 2001). Arctic-alpine species are often associated with specialized habitats in which they survived from the post-glacial times on northerly exposed rock faces, cool crevices, cliff ledges and talus slopes, where there is little or no competition from forest vegetation and the microclimatic conditions support a more northern flora.

6.4.5 DESCRIPTION OF STUDY AREA VEGETATION

Between Mungo Park Point and Livingstone Point, the shallow soils over bedrock support spruce and cedar coniferous forests as well as occasional stands composed of Jack pine (Bird and Hale, 1994).

Around Humboldt Bay, black spruce-cedar swamps occur in low-lying areas. In upland areas between Humboldt Bay and South Peninsula, coniferous mixedwoods form the dominant vegetation cover. Ombabika flats is a distinctive expanse of lacustrine plain located between the broken palisades of South Peninsula and the cliffs of the mainland. These flats have a uniform vegetation cover consisting of black spruce (*Picea mariana*) bogs and swamps, with balsam fir (*Abies balsamea*) and occasional tamarack (*Larix laricina*) (Bird and Hale, 1994). The understory species include mountain maple (*Acer spicatum*), Labrador tea (*Ledum groenlandicum*), small cranberry (*Vaccinium oxycoccos*), low sweet blueberry (*Vaccinium angustifolium*), wood horsetail (*Equisetum sylvaticum*), blue-bead lily (*Clintonia borealis*) and several species of sphagnum moss (*Sphagnum sp.*).

Spruce forests dominate the shores of Ombabika Bay with deciduous stands composed of trembling aspen (*Populus tremuloides Michx.*) occurring infrequently. A few wetlands occur along the shoreline in

sheltered bays in the form of graminoid fens and willow thickets. At the northern end of Ombabika Bay the Little Jackfish River marshes form a continuous wetland feature (North-South Environmental, 2001).

North Peninsula has a diverse forest cover. The western shores have stands dominated by black spruce, white spruce (*Picea glauca*) and balsam fir on upland, sandy soils, with white birch (*Betula papyrifera*) as a common secondary species. Most of the balsam fir is dead due to spruce budworm infestation. The understory of these forests has extensive carpets of feathermosses and abundant arboreal lichens. Jack pine (*Pinus banksiana*) occur in dry, rocky outcrop areas and as occasional patches on the North and South Peninsulas (Bird and Hale, 1994).

The large marshes at Windigo Bay exhibit distinctive vegetation zonation from the open waters of Lake Nipigon to areas inland. Softstem bulrush (*Scirpus validus*) and hard-stemmed bulrush (*Scirpus acutus*) form emergent vegetation communities in deep water. Canada blue-joint (*Calamagrostis canadensis*) is the dominant species in beach strand communities. Behind the beach are extensive graminoid fens with floating mats of slender sedge, and on more stable substrates, low shrub fens with sweet gale (*Myrica gale*). The final transition between open wetland and swamp is characterized by speckled alder (*Alnus incana* ssp. *rugosa*) thickets, which form at the edge of lowland black spruce swamp. Graminoid marshes on shallow sandy substrate exist along the shore of the bay, with species such as wool grass (*Scirpus cyperinus*), softstem bulrush, Baltic rush (*Juncus balticus*), northern manna grass (*Glyceria borealis*) and tall manna grass (*Glyceria grandis*) (North-South Environmental, 2001).

In the southwest corner of Lake Nipigon, large continuous wetlands are located around the Poshkokagan River mouth in Chief Bay. Bird and Hale (1994) report the following species in Chief Bay wetlands: speckled alder, common reed (*Phragmites australis*), wool grass, softstem bulrush, Baltic rush, northern manna grass and tall manna grass. The open

wetlands are fringed by alder thickets and willows that grade into the surrounding mixed forests composed of white spruce, black spruce, balsam fir, trembling aspen and white birch. There are also some swamps dominated by tamarack.

Forests that have been disturbed by logging characterize some of the upland areas around Chief Bay. Typically the dominant species are white spruce, white birch, balsam poplar, mountain maple, red-osier dogwood (*Cornus stolonifera*), mountain ash (*Sorbus decora*) and jewelweed (*Impatiens capensis*). The understory includes typical boreal species such as bunchberry (*Cornus canadensis*), blue-bead lily (*Clintonia borealis*), one-flowered wintergreen (*Moneses uniflora*) and club moss (*Lycopodium* spp.) (Bird and Hale, 1994).

Between Gull Bay and Chief Bay, mixed forests on lakeshore slopes are composed of white spruce, balsam fir, trembling aspen and white birch. Locally, white pine (*Pinus strobus*) mixedwoods are also found (North-South Environmental, 2001). The dominant species on the north islands are black spruce, white spruce and balsam fir, however, massive spruce budworm outbreaks between 1943 and 1949 eliminated most of the mature balsam fir (Gollat, 1976). Most of the forest present on the Lake Nipigon Islands originated from large forest fires that occurred over most of the area about 150 years ago (Gollat, 1976). The high density of these now old stands tends to inhibit new growth. A few small over-mature jack pine stands occur on Shakespeare Island and Geikie Island (North-South Environmental, 2001).

Mixed stands of red (*Pinus resinosa*) and white pine have been reported on the western side of St. Paul Island. Red pine has also been reported in an area north of the Blackwater River and in an area on Two Mountain Island in Grand Bay (Bird and Hale, 1994, North-South Environmental,

6.4.6 FISH

Lake Nipigon is a deep, cold water lake that has largely retained its original fish species

composition. The dams on the Nipigon River have prevented fish migration from Lake Superior where many non-native species now exist. A comparison of Lake Nipigon fish species found by Dymond in 1926 with those found today shows only a few notable differences (Table 7). Brown trout (*Salmo trutta*), rainbow smelt (*Osmerus mordax*) and black bullheads (*Ameiurus melas*) were introduced into Lake Nipigon. Many of the “extra” species listed in 2001, such as shortjaw cisco (*Coregonus zenithicus*), bloater (*Coregonus hoyi*) and finescale dace (*Phoxinus neogaeus*) were likely present in 1926 but not encountered due to survey techniques (Swainson, 2001).

The cold, clean, well oxygenated water of Lake Nipigon is essential for species such as lake trout (*Salvelinus namayacush*), brook trout (*Salvelinus fontinalis*), whitefish (*Coregonus clupeaformis*) and cisco (*Coregonus artedii* sp.) and has allowed two threatened species, the shortjaw cisco and deepwater sculpin (*Myoxocephalus thompsoni*) to persist (Swainson, 2001). Recently, it was determined that a new species of “Nipigon blackfin” cisco exists in Lake Nipigon. Exactly what species this new cisco is has not yet been determined by taxonomists (Swainson, 2001).

Important upwelling areas with sand and gravel, critical for brook trout spawning are thought to exist in Pijitawabik Bay, McIntyre Bay, West Bay, South Bay, English Bay and Humboldt Bay. Ombabika Bay produces 90% of Lake Nipigon walleye. Wabinosh Bay also produces walleye. Wetlands along the shoreline are important for northern pike spawning, particularly in Humboldt Bay (Salmon, pers. Comm., 2000 in North-South Environmental, 2001).

Lake whitefish is the most important commercial species and the most abundant in terms of biomass (Salmon and Livingston, 1998 in North South Environmental, 2001). They spawn in mid-October through November and require cool water temperatures. Specific spawning areas are not well known but have been reported in McIntyre Bay, Black Sturgeon Bay, South Bay,

English Bay and Wabinosh Bay (Gollat, 1976).

Rainbow smelt (*Osmerus mordax*) were accidentally introduced into Lake Nipigon in recent years (first observed in the 1970s) and have increased exponentially since then. They are important as a commercial fish species and as a food source for other life forms (van Ogtrop and Salmon, 1998).

Lake trout are a valuable sport and commercial fish species on Lake Nipigon. Spawning areas for this species are not well known but have been reported near Murchison Island, Dawson Island, Gros Cap, Shakespeare Island and South Bay (Gollat, 1976 in North South Environmental, 2001). Lake trout are now being caught at sizes unreported in the past (30 – 40 pounds). This increase in size of large lake trout is thought to be a result of the availability of rainbow smelt as a food source.

Brook trout is one of the most prized sport fish in Lake Nipigon. They require high quality, cold water environments for survival and reproduction. They can be found in the non-breeding season near Shakespeare Island, Mungo Park Point, the Virgin Islands, South Bay, Gros Cap, West Bay, Jackfish Island and the north central islands area (Gollat, 1976 in North-South Environmental, 2001).

The largest concentration of lakes in the conservation reserve occurs on the northwest side of Lake Nipigon. This is an area of rugged terrain, high cliffs and deep lakes with coldwater fisheries. A number of these lakes have been surveyed for game species present. Snowshoe Lake, Castle Lake and Walkover Lake all contain lake trout and northern pike. Clamp Lake contains brook trout (Swainson, 2001). Other lakes in the conservation reserve, Bonner Lake, Rhea Lake and Frith Lake are all warm water lakes with warm water species occurring in them.

6.4.7 REPTILES AND AMPHIBIANS

Seventeen species of reptile and amphibian have been reported in the general vicinity of the Lake Nipigon Conservation Reserve. Inventory information specific to the

conservation reserve is not available. None of the species reported is considered at risk, however, many are at the northern limit of their range in the Nipigon area (North-South Environmental, 2001). Only 13 of these species have actually been observed, the remainder are based on range maps. The most common herpetofauna in the conservation reserve include the eastern garter snake (*Thamnophis sirtalis*), American toad (*Bufo americanus*), northern spring peeper (*Pseudacris crucifer*) and wood frog (*Rana sylvatica*). Boreal chorus frog (*Pseudacris maculata*) is also common in the area. The mink frog (*Rana septentrionalis*), northern leopard frog (*Rana pipiens*) and green frog (*Rana clamitans*) are at the northern edge of their range and mainly limited to the southern part of the conservation reserve.

There are historical reports of sightings of the yellow-spotted (*Ambystoma maculatum*), blue spotted (*Ambystoma laterale*) and Jefferson complex (*Ambystoma Laterale/A. jeffersonianum*) salamanders in the study area (North-South Environmental, 2001). The Thunder Bay Field Naturalists have recently (1991-1993) reported the Jefferson and Jefferson complex salamanders on Ellis Island in Lake Nipigon (Table 8).

A red eft, the land stage of the eastern newt (*Notophthalmus viridescens*) was collected in September 2001 from the Oskawe Lake – South Bay area (J. Haskell pers. Comm., 2001 in Swainson and McNaughton, 2001).

6.4.8 BIRDS

The number of breeding birds in the Lake Nipigon Conservation Reserve (and surrounding area) ranges from 60-79 breeding bird species (Thompson, 2000) to 150 species (North-South Environmental, 2001). More inventory work is required to further refine the actual number of breeding birds in the conservation reserve. Most of the breeding bird observations are derived from surveys conducted within and in proximity to the study area by Thunder Bay Field Naturalists from 1991 –1993 and surveys within Windigo Bay Provincial Park by Northern Bioscience in

1997. Other sources used to derive the breeding bird list (outlined in North-South Environmental, 2001) are more general such as the Atlas of Breeding Birds of Ontario.

Two bird species at risk are confirmed breeders in the Lake Nipigon Conservation Reserve, the American white pelican (*Pelicanus erythrorhynchos*) and the bald eagle (*Haliaeetus leucocephalus*). The black tern (*Chlidonias niger*) and peregrine falcon (*Falco peregrinus*) are species at risk that have been sighted in the conservation reserve but are not confirmed breeders. Other species of note include the great gray owl (*Strix nebulosa*), osprey (*Pandion haliaetus*), great blue heron (*Ardea herodias*) and double-crested cormorant (*Phalacrocorax auritus*).

The American white pelican is protected under Ontario's *Endangered Species Act*. Pelicans were first observed nesting on Pretty Island in McIntyre Bay in 1991, although pelicans had been seen on Lake Nipigon as far back as the late 1970s (Bryan, 1991). New nesting sites were found in 1992 and 1993 on islands to the west of Ombabika Narrows and on an island near Windigo Bay. In 2000, approximately 300 nests were observed on a small island north of Boles Island near West Bay. The Lake Nipigon pelican population is currently estimated to be greater than 1,000 birds and expanding (Swainson and McNaughton, 2001).

The Lake Nipigon Conservation Reserve provides the remote and isolated habitat preferred by the white pelican. Pelicans nest in late May or early June on small (0.4 to 1.2 ha), remote, bedrock islands (Peck and James, 1983; Peck, 1987). Chicks are very vulnerable during their first two weeks, having no feathers to protect them from the cold or sun. Under the right conditions, as little as twenty minutes of human disturbance of the nesting grounds can be fatal for almost all chicks under two weeks of age (Koonz, 1987).

Key feeding areas for the pelicans of Lake Nipigon are West Bay, Wabinosh Bay, Windigo Bay, Ombabika Bay and the mouth of most tributaries (Swainson and McNaughton, 2001). Pelicans feed mainly on non-

commercial fish species such as stickleback and suckers. An adult pelican consumes, on average, 1.8 kg of food daily (Swainson and McNaughton, 2001).

The bald eagle is a species at risk in Ontario and is listed under the Endangered Species Act (Swainson and McNaughton, 2001). Bald eagles breed on large freshwater lakes with shallow bays and clear water, allowing fish to be visible. In the Lake Nipigon Conservation Reserve, eagles are known to nest almost exclusively in large poplar trees that protrude above the forest canopy (R. Swainson pers. Comm., 2001 ci Swainson and McNaughton, 2001). There are currently one hundred and forty known eagle nests in the Lake Nipigon Conservation Reserve.

Bald eagles rely on open water for food in winter and generally migrate to large rivers to find a food source (Root et. al., 1988 ci North South Environmental, 2001).

The great gray owl is not listed as a species at risk, but is tracked by the Ministry of Natural Resources as an indicator species of extensive mature coniferous forest. Its habitat requirements include large tracts of coniferous forest (100 to 400 hectares or larger) interspersed with peatlands. Great gray owls tend to nest in clearings with grasses and forbs that support prey species (Ontario Hydro, 1989 ci North South Environmental, 2001). This species has been sighted in the Lake Nipigon Conservation Reserve in the high hills near Wabinoosh Bay (Carroll, 2000, pers. Comm. ci North South Environmental). There are no confirmed reports of nesting, though suitable habitat exists in the Lake Nipigon Conservation Reserve.

Peregrine falcons are a species at risk in Ontario and are listed under the *Endangered Species Act* (Swainson and McNaughton, 2001). There was a dramatic decline in their population numbers through the 1950s, 60s and 70s due to the widespread use of DDT. Many reintroduction programs have since been initiated and there are now 50 pairs of peregrines nesting in Ontario, many along the north shore of Lake Superior (Ratcliff, 2000,

pers. Comm.). Peregrine falcons usually nest on high cliffs near vast open areas such as large lakes or grasslands, feeding mainly on small birds (North South Environmental, 2001). Habitat and food are abundantly available in the Lake Nipigon Conservation Reserve. The Thunder Bay Field Naturalists observed a peregrine during breeding season at Tichnor Island in Humboldt Bay, however, nesting has not been confirmed (Ratcliff, pers. Comm., 2001 in North South Environmental, 2001).

Black terns are a species at risk in Ontario and are ranked as Vulnerable (Natural Heritage Information Centre, 2001 ci Swainson and McNaughton, 2001). They usually nest in extensive freshwater wetlands, particularly in cattail marshes associated with large lakes and ponds (North-South Environmental, 2001). This species is noted as a possible breeder in the Lake Nipigon Conservation Reserve as it has been observed by Thunder Bay Field Naturalists near suitable breeding habitat in Windigo Bay and Ombabika Bay. Black terns require large wetlands of a minimum of 5 hectares in size to sustain a population. Their nests are susceptible to swamping by boats because they build them very close to the water line.

Thunder Bay Field Naturalists report that the osprey is a common raptor on Lake Nipigon. They require areas of shallow, clear water for feeding and tall trees or high ledges for nesting. Due to the effects of DDT, osprey nests on Lake Nipigon declined to just two in 1969 (Postupalsky, 1971 ci Swainson and McNaughton, 2001). In 1993, osprey nests on Lake Nipigon increased to forty but only seventeen were observed in 2001 (Swainson, 2001, pers. Comm.). This decline is likely due to the increase in bald eagle numbers, as bald eagles are usually dominant over osprey.

Bryan (1992, ci Swainson and McNaughton, 2001) recorded five great blue heron colonies on Lake Nipigon (Tichnor Island, The Rabbit Islands, island south of Logan and east of Vennor, island east of Murray, Red Willow Islands). At least three other heronries are known, two nesting in conjunction with white pelicans and one on the mainland in McIntyre

Bay (Swainson, pers. Comm., 2001). The total number of active heronries in the Lake Nipigon Conservation Reserve is unknown.

Lake Nipigon was home to the first recorded (1920) double crested cormorant colony in Ontario. The population increased through the 1940s and 50s and then declined dramatically in the 1960s and 70s due to the widespread use of DDT (Swainson and McNaughton, 2001). With the banning of DDT, the cormorants have made a comeback. During surveys by the Thunder Bay Field Naturalists in 1991 and 1992, over 5,000 cormorants and fifteen nesting colonies containing a total of 2,500 nests were counted. Large colonies of cormorants still exist in the Lake Nipigon Conservation Reserve, but current population size and number of colonies is unknown (Swainson and McNaughton, 2001).

6.4.9 MAMMALS

No mammal survey work, specific to the Lake Nipigon Conservation Reserve has been completed. The number of mammal species estimated to be present in the Lake Nipigon Conservation Reserve and surrounding area varies depending on the information source. North-South Environmental (2001) lists 52 species of mammals, whereas Thompson (2000) lists somewhere between 30 and 39 species.

Several mammal species are at the northern limit of their range such as white-tailed deer (*Odocoileus virginianus*), long-tailed weasel (*Mustela frenata*), bobcat (*Lynx rufus*), several shrews, hairy-tailed mole (*Parascalops breweri*) and the eastern chipmunk (*Tamias striatus*). Likewise, there are a number of species that are at the southern limit of their range including the woodland caribou (*Rangifer tarandus*), wolverine (*Gulo gulos*), cougar (*Felis concolor*) and arctic shrew (*Sorex arcticus*) (Burt and Grossenheider, 1976 in Swainson and McNaughton, 2001).

Three mammal species at risk occur in the Lake Nipigon Conservation Reserve, the woodland caribou, cougar and wolverine.

All three of these species require large home ranges in isolated areas with minimal human disturbance (Swainson and McNaughton, 2001).

Woodland caribou are the only indigenous cervid north of Lake Superior; white-tailed deer and moose arrived from farther south at the beginning of the century (Cumming and Beange, 1993 in North-South Environmental, 2001). The woodland caribou population has been steadily receding northward and declining in numbers since the 1850s as a result of human disturbance and habitat destruction. They are now categorized as threatened in Canada.

The Lake Nipigon caribou population is one of the most southerly populations in the province and is estimated at 150 to 250 individuals (Gollat, 1997 in North-South Environmental, 2001). Although it was recently thought that caribou used only the northern half of Lake Nipigon islands and shorelands, 2001 field studies revealed that the southern islands are also being used.

Caribou summer on the islands of Lake Nipigon, swimming there after spring break-up to have their calves where they are relatively free from wolf predation. They use small to mid-sized islands ranging from 0.5 to 1550 hectares but prefer islands 25 to 75 hectares in size. Most caribou return to the mainland for the winter, although some spend the winter on the islands.

The eastern population of cougar (*Felis concolor*) is classed as endangered in Ontario (COSSARO) and is protected under Ontario's *Endangered Species Act* (Swainson and McNaughton, 2001). Cougar sightings occur every year in Ontario, with many sightings occurring in and around the Lake Nipigon Conservation Reserve. Although scat, track casts and hair samples have been collected locally and elsewhere in Ontario, the results have been inconclusive except for one instance in the Kenora area.

Cougars inhabit extensive tracts of forests, with minimal human presence or disturbance. They are known to have large territories and

exist at very low densities even where populations are well established (Swainson and McNaughton, 2001). White-tailed deer is the primary prey species, however, cougar will prey on a variety of animals including porcupine, beaver, domestic animals and moose. They prefer habitats that are vegetatively and topographically complex (Dawson pers. comm., 2001 in Swainson and McNaughton, 2001), which is characteristic of the terrain in the Lake Nipigon Conservation Reserve.

Wolverine (*Gulo gulo*) is ranked as Vulnerable in Ontario (COSSARO) but has recently been recommended for reclassification as Threatened (Dawson, 2000 in Swainson and McNaughton, 2001). Historically wolverines ranged over most of Ontario, however, populations have steadily receded northward. It is believed that this recession is directly related to increased human disturbance and activity.

The wolverine feeds primarily on dead caribou and moose and requires large home ranges (100 to 700 km²) (Hash, 1987 in North-South Environmental, 2001). There are scattered records of wolverine in the Lake Nipigon Conservation Reserve. In the mid 1980s, a wolverine was observed using a den near Gros Cap on Lake Nipigon (Odorizzi pers. comm., 2000 in North-South Environmental, 2001).

Other mammal species of note in the Lake Nipigon Conservation Reserve include the moose (*Alces alces*) and wolf (*Canis lupus*). Evidence indicates that moose moved into the Lake Nipigon area in the late 1800s or early 1900s due to the availability of early successional habitat created by human activity (exploration). Moose currently inhabit the shore lands and islands of Lake Nipigon. Although the islands are closed to hunting of big game today and have been since 1970 (except for subsistence purposes by Aborigines), moose were hunted in the past resulting in a dramatic population decline. The current island population is estimated at 110 animals (Swainson and McNaughton, 2001).

Wolves are the primary predators of moose and caribou in the Lake Nipigon Conservation Reserve (in addition to humans). Although persecuted through the 1950s, 60s and 70s, wolves still remain a common sight on Lake Nipigon. At least one wolf pack was observed on Shakespeare Island during 1998 and 2001 surveys (Swainson pers. comm. 2001 in Swainson and McNaughton, 2001). Wolves are often seen on the Lake Nipigon ice, feeding on fish discarded by the commercial fisherman.

6.4.10 WATER

Although only a portion of Lake Nipigon is designated as conservation reserve, it is undeniably the most significant feature in the study area. Lake Nipigon is the largest headwaters to the Great Lakes, has a water renewal time of 25.6 years and drains an area of 24,650 km². With a surface area of 484,800 ha and a maximum depth of 166 metres, Lake Nipigon is a massive body of fresh, clean water that is worthy of protection.

The limnology of Lake Nipigon has been studied a number of times, the first studies being conducted by a team from the University of Toronto from 1921 to 1924. The most recent collection and analysis of limnological information for Lake Nipigon was conducted in 2001 by Geowest Environmental Consultants Ltd. for the MNR (2002). This study involved the collection of water chemistry, phytoplankton, zooplankton and benthos information in Wabinoosh Bay, West Bay, McIntyre Bay, South Bay and Humboldt Bay. Results of the study indicate that in general, it appears that Lake Nipigon remains in an ecological condition very similar to historical values reported. Basic limnological information for Lake Nipigon is listed in Table 9.

The water quality parameters of Lake Nipigon are generally typical of a large, deep, oligotrophic lake. It is characterized as relatively nutrient poor with low levels of nitrates and total phosphorus. Levels of total dissolved solids are low, and alkalinity is low to moderate as a result of being situated on bedrock and shallow soils with low to

TABLE 4: OCCURRENCE OF VEGETATION TYPES IN THE LAKE NIPIGON CONSERVATION RESERVE.

Community types and names follow Harris et al. (1996) for wetland (W) types and Sims et al. (1989) for forest types (V). Note: the following community types are the best approximation based on existing information.

VEGETATIVE COMMUNITY	
TYPE	NAME
V5	Aspen Hardwood
V8	Trembling aspen (white birch)/mountain maple
V9	Trembling aspen mixed wood
V13	Red pine mixed wood
V16	Balsam fir - white spruce mixed wood/feathermoss
V19	Black spruce mixed wood herb rich
V22	Cedar (inc, mixed wood) / speckled alder / sphagnum
V23	Tamarack (black spruce) / speckled alder / Labrador tea
V27	Red pine conifer
V30	Jack pine - black spruce / blueberry / lichen
V36	Black spruce / bunchberry / sphagnum (feathermoss)
V37	Black spruce / ericaceous shrub / sphagnum
W1	Open water marsh: mixed: mineral substrates
W4	Open water marsh: floating leaved plants
W7	Marsh; bulrush: mineral substrate
W8	Marsh: common reed: mineral substrate
W11	Marsh: cattail
W13	Meadow marsh: bluejoint grass
W14	Open graminoid shore fen: wire sedge
W15	Low shrub shore fen: leatherleaf - sweet gale / graminoid
W22	Poor fen: black spruce - tamarack / ericaceous shrub
W35	Thicket swamp: speckled alder / bluejoint grass
W36	Thicket swamp: tall willow
Source: North-South Environmental, 2001	

moderate capacity to reduce acidity (Cowell, 1986 in Swainson, 2001). Lake pH conditions are neutral to slightly alkaline. Oxygen levels are high in all areas of the Lake.

Ombabika Bay is naturally more turbid than the rest of Lake Nipigon because of its soils, shallow waters and susceptibility to wind and wave action. Its transparency dropped from 2.3 m in 1924 to 1.1 m in 1976 and 1.5 m in 1984 as a consequence of massive erosion and inputs of suspended sediment caused by diverting the Ogoki River down the Little Jackfish River in 1943 (Swainson, 2001).

Elevated mercury levels were detected in fish from Lake Nipigon in the 1970s and continue to persist today. Consumption restrictions apply to some species over a certain size (Ministry of the Environment, 2001). Mercury is released into the food chain during the breakdown of organic material. It is thought that decomposition of bark left on the lake bottom from the log drives and organic material flooded by the creation of the Ogoki Reservoir is causing the increase in mercury levels (Ontario Hydro, 1988, Ontario Ministry of Natural Resources, 1987, Ministry of the Environment, 2001).

Concentrations of PCBs in Lake Nipigon have been found to be similar to other smaller lakes in the area and in remote Canadian lakes. Elevated levels of the pesticide toxaphene have been found in Lake Nipigon fish (Whittle et al. In Swainson, 2001). Toxaphene was banned from use in Canada in 1974 and restricted in the United States in 1982. It is still used in Mexico and South America and is transferred through the atmosphere to our lakes. Concentrations of total copper in Humboldt Bay and total zinc in South Bay were found to exceed Ontario Provincial Water Quality Objectives in a recent limnological study (Geowest Environmental Consultants, 2002).

The species composition and abundance of benthic and planktonic organisms in the most recent study (Geowest Environmental Consultants, 2002) were indicative of clear, cold, oligotrophic lakes in northwestern Ontario. The shallow-water sampling

produced greater numbers and diversity of benthic and planktonic organisms than the deep-water sampling.

The spiny water flea (*Bythotrephes cederstroemi*), a crustacean native to Europe, was the only exotic species found during the sampling. It is a small creature, about 1/2 an inch long, with a barbed tail spine that often catches on fishing line and down riggers. It's preferred food is the same as that eaten by native plankton and fishes, leading to concerns that the invader may be competing for food with native species (Geowest Environmental Consultants, 2002). Evidence of zebra mussels was not found during this most recent study nor has evidence been found in previous studies.

6.5 SOCIAL AND ECONOMIC ASPECT

6.5.1 FISHERIES RESOURCE USE

Commercial Fishery

The Lake Nipigon fishery resource has been used for subsistence purposes for thousands of years, first by indigenous peoples and then by European fur traders and settlers. The lake was opened to unrestricted commercial fishing in 1917 in response to a food shortage brought on by World War I. The fish stocks were quickly over-fished as a "fishing bonanza" took place. Peak harvest was reached in 1919 at 2.3 million pounds.

The commercial fish harvest from 1917 to 2000 (Figure 3) has been characterized by widely fluctuating annual differences which are likely the combined result of fluctuating stock abundance (strong year classes) and variable fishing effort (driven by market prices, weather and number of fishermen) (Swainson, 2001).

As it was in 1917, the lake whitefish has continued to be the mainstay of the Lake Nipigon commercial fishery. Other fish species harvested include walleye, lake trout, sauger and to a lesser degree, northern pike. A recent addition to the commercial fishery is the rainbow smelt. An introduced species, the rainbow smelt population has exploded in

TABLE 5: Arctic-alpine disjunct native, vascular plant species of the Lake Nipigon Conservation Reserve. Nomenclature follows Newmaster et al. (1998). Sources for arctic status: Ontario Plant List (Newmaster et al. 1998); Checklist of Vascular Plants of Thunder Bay District (Thunder Bay Field Naturalists). Source: North-South Environmental, 2001

SCIENTIFIC NAME	HABITAT	LOCATION	COMMON NAME	SOURCE	
				NEWMASTER ET AL.(1998)	THUNDER BAY FIELD NATURALISTS
DRYOPTERIDACEAE					
<i>Dryopteris fragrans</i> (L.) Schott	Moist crevices in talus boulder	Wilson Island	Fragrant wood fern		✓
ERICACEAE					
<i>Vaccinium uliginosum</i> L. ssp <i>Pubescens</i> (Wormsk. ex Hornen) S. Young	Moist shoreline rock crevices	Humboldt Bay	Bog blueberry	✓	✓
PRIMULACEAE					
<i>Primula mistassinica</i> Michx.	Moist shoreline rock crevices	South Bay; Macoun Island; Murchison Island; Shakespeare Island	Bird's-eye primrose		✓
ROSACEAE					
<i>Potentilla tridentata</i> Sol. Ex alton	Moist shoreline rock crevices and cliffs	Black Sturgeon Bay; Ursel Island; Caribou Island; South Bay	Three-toothed cinquefoil	✓	
FABACEAE					
<i>Oxytropis splendens</i> Douglas ex Hook	Exposed cliff faces	Prince of Wales Island	Showy oxytrope		✓
ASTERACEAE					
<i>Senecio congestus</i> (R.Br.) DC	Moist shoreline rock crevices	Black Sturgeon Bay	Marsh groundsel	✓	
CYPERACEAE					
<i>Carex capillaris</i> L. ssp. <i>capillaris</i>	Moist shoreline rock crevices moist streams	South Bay; Shakespeare Island	hair-like sedge		✓
<i>Carex scirpoida</i> Michx.	Moist shoreline rock crevices	South Bay	scirpus-like sedge	✓	✓
<i>Scirpus cespitosus</i>	Moist shoreline rock crevices	South Bay; Chief Bay	cespitose bulrush	✓	✓
POACEAE					
<i>Calamagrostis stricta</i> (Timm) Koeler ssp. <i>stricta</i>	Moist shoreline rock crevices	Humolt Bay; South Bay	Northern reed grass		✓
<i>Poa glauca</i> M. Vahl ssp. <i>glauca</i>	Rock crevices and rocky shoes	St.Paul I; Brown I; Black Sturgeon Bay; Cooke Pt.	Glaucous bluegrass		✓
<i>Trisetum spicatum</i> (L) Richter	Rock crevices and shore	Russel I; South Bay	Narrow false oats		✓

TABLE 6: Provincially significant, native vascular plant species documented for the Lake Nipigon Conservation Reserve listed in taxonomic order. Nomenclature follows Newmaster et al. (1998). Provincial status is based on Natural heritage Information Centre (2000). Source: North-South Environmental, 2001

SCIENTIFIC NAME	HABITAT	LOCATION	COMMON NAME	G RANK	S RANK
DRYOPTERIDACEAE					
<i>Dryopteris x triploidea</i> Wherry	Moist, rich woods	South Bay	Wood fern	HYB	S3S4
<i>Gymnocarpium x intermedium</i> Sarvela	Moist shoreline rock crevices and moist cliffs	Macoun I.; Brown I.; Shakespeare I.	Hybrid oak fern	HYB	S2?
FABACEAE					
<i>Oxytropis splendens</i> Douglas ex Hook	Exposed cliff crevices	Prince of Wales Island	Showy oxytrope	G5	S3
JUNCACEAE					
<i>Juncus vaseyi</i> Engelm.	Ephemeral boggy pool	South Bay	Vasey's rush	G3G5	S3

Lake Nipigon and the commercial smelt fishery has grown along with it. Smelt harvest has increased from 1000 kg per year in the early 1990s to 239,000 kg in 2000.

Reported commercial harvests from 1990 to 1998 for lake whitefish and lake trout have been stable, whereas walleye and sauger harvests have remained at low levels following a decline in harvest and subsequent closure of Ombabika Bay to commercial fishing in 1996 (Swainson, 2001). The commercial walleye and sauger fishery was recently closed lake-wide (April 2002).

There are currently ten commercial fish licences on Lake Nipigon, all issued to First Nation or Metis people. Lake wide quotas are assigned to each licence for each fish species and fishermen are restricted to size and type of gear they can use (Swainson, 2001).

There is no history of commercial fishing in the smaller lakes within the Lake Nipigon Conservation Reserve (e.g., Castle Lake, Boswell Lake, Snowshoe Lake, Bonner Lake). Since the early 1990s there has been an expanding commercial fishery for smelts in the tributaries to Lake Nipigon (Swainson, 2001).

Sport Fishery

Sport fishing on Lake Nipigon did not really get under way until after the Second World

War. Tourist outfitters running charter boats out of Orient Bay, took anglers on multi-day, live on boat trips around the lake. The species targeted at this time were walleye, northern pike and brook trout. Charter boat operations continued through the 1950s to present day. Currently there are seven charter boat operators that offer over night trips and full on board services and accommodation. There are also approximately 25 to 30 day trip operators.

In recent years the equipment used by the average angler has become more sophisticated. An increasing number of sports fishermen have fish finders, larger boats and down riggers. This has enabled them to travel out on Lake Nipigon on their own and to travel further afield. This widespread use of new technology in the early 1990s resulted in the "discovery" of the recovering lake trout stocks, resulting in an explosion in the lake trout sport fishery (Swainson, 2001). The sport fish harvest of lake trout, historically less than 4% of the total sport fish harvest (Savioja, 1985 in Swainson, 2001), is now as high as 75% (van Ogtrop, 2001 in Swainson, 2001). The quality of the lake trout sport fishery has declined as a result.

Some sport fishing occurs on the inland lakes within the Lake Nipigon Conservation Reserve. From 1950 to 1970, Castle Lake was a popular destination for guided trips from

TABLE 7: FISH SPECIES OF LAKE NIPIGON

Source: Swainson, 2001

COMMON NAME	SCIENTIFIC NAME	DYMOND (1926)	MNR (2001)
Lake sturgeon	<i>Acipenser fluvescens</i>	X	X
Brown trout	<i>Salmo trutta</i>		X
Brook trout	<i>Salvelinus fontinalis</i>		X
Lake trout	<i>Salvelinus namayacush</i>	X	X
Lake whitefish	<i>Coregonus clupeaformis</i>	X	X
Cisco (lake herring)	<i>Coregonus artedii</i> sp.	X	X
Bloater	<i>Coregonus hoyi</i>		X
Blackfin cisco	<i>Coregonus nigripinnis</i> sp.*	X	X
Nipigon cisco	<i>Coregonus nipigon</i> sp. *	X	X
Shortjaw cisco	<i>Coregonus zenithicus</i>		X
Round whitefish	<i>Prosopium cylindraceum</i>	X	X
Rainbow smelt	<i>Osmerus mordax</i>		X
Northern pike	<i>Esox lucius</i>	X	X
Longnose sucker	<i>Catostomus catostomus</i>	X	X
White sucker	<i>Catostomus commersoni</i>	X	X
Silver redhorse	<i>Maxostoma anisurum</i>	X	X
Shorthead redhorse	<i>Maxostoma macrolepidotum</i>	X	X
Northern redbelly dace	<i>Phoxinus eos</i>		X
Finescale dace	<i>Phoxinus neogaeus</i>		X
Lake chub	<i>Couesius plumbeus</i>	X	X
Golden shiner	<i>Notemigonus crysoleucas</i>		X
Emerald shiner	<i>Notropis atherinoides</i>	X	X
River shiner	<i>Notropis blennioides</i>	X	
Blacknose shiner	<i>Notropis heterolepis</i>	X	X
Spottail shiner	<i>Notropis hudsonius</i>	X	X
Mimic shiner	<i>Notropis volucellus</i>	X	X
Fathead minnow	<i>Pimephales promelas</i>		X
Longnose dace	<i>Rhinichthys cataractae</i>	X	X
Pearl dace	<i>Margariscus margarita</i>		X
Black bullhead	<i>Ameiurus melas</i>		X
Burbot (ling)	<i>Lota lota</i>	X	X
Brook stickleback	<i>Culaea inconstans</i>	X	X
Ninespine stickleback	<i>Pungitius pungitius</i>	X	X
Trout-perch	<i>Percopsis omiscomaycus</i>	X	X
Smallmouth bass	<i>Micropterus dolomieu</i>	X	X
Yellow perch	<i>Perca flavescens</i>	X	X
Sauger	<i>Stizostedion canadense</i>	X	X
Walleye	<i>Stizostedion vitreum vitreum</i>	X	X
Iowa darter	<i>Etheostoma exile</i>	X	X
Johnny darter	<i>Etheostoma nigrum</i>	X	X
Logperch	<i>Percina caprodes</i>	X	X
Mottled sculpin	<i>Cottus bairdi</i>	X	X
Slimy sculpin	<i>Cottus cognatus</i>	X	X
Spoonhead sculpin	<i>Cottus ricei</i>	X	X
Deepwater sculpin	<i>Myoxocephalus thompsoni</i>		X

TABLE 8: REPTILES AND AMPHIBIANS IN THE VICINITY OF THE LAKE NIPIGON CONSERVATION RESERVE

COMMON NAME	SCIENTIFIC NAME	OBSERVED IN BASIN
Common Snapping Turtle*	<i>Chelydra serpentina</i>	No
Western Painted Turtle	<i>Chrysemys picta belli</i>	Yes
Eastern Garter Snake	<i>Thamnophis sirtalis</i>	Yes
Northern Redbelly Snake*	<i>Storeria occipitomaculata</i>	No
Eastern Newt	<i>Notophthalmus viridescens</i>	Yes
Blue Spotted/Jefferson Salamander complex	<i>Ambystoma laterale/A jeffersonianum</i>	Yes
Blue Spotted Salamander	<i>Ambystoma laterale</i>	Yes
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	Yes
Yellow Spotted Salamander	<i>Ambystoma maculatum</i>	Yes
Redback Salamander*	<i>Plethodon cinereus</i>	No
American Toad	<i>Bufo americanus</i>	Yes
Northern Spring Peeper	<i>Pseudacris crucifer</i>	Yes
Boreal Chorus Frog	<i>Pseudacris maculata</i>	Yes
Mink Frog	<i>Rana septentrionalis</i>	Yes
Green Frog	<i>Rana clamitans</i>	Yes
Wood Frog	<i>Rana sylvatica</i>	Yes
Northern Leopard Frog	<i>Rana pipiens</i>	Yes

* Occurrence of these species within the Lake Nipigon Conservation Reserve is questionable.

Mud River Outfitters, who portaged in from Lake Nipigon (Doug Townsend, pers. Comm., 2001 in Swainson, 2001). Angling for walleye and northern pike occurs in Bonner Lake. Some of the lakes on the Lake Nipigon islands also receive angling pressure.

Bait Fishery

Although there are at least five popular bait fish species occurring in Lake Nipigon, very little is known about these species or their habits in the lake (Swainson, 2001). There are 16 bait fish blocks that fall entirely or partially within the Lake Nipigon Conservation Reserve (#'s 501881, 494881, 498881, 501882, 494884, 494882, 494883, 501883, 502883, 502882, 498883, 497882, 502881, 493882, 496883, 498882). Harvest is

reported by block not by water body, so the amount of harvest from conservation reserve waters specifically is unknown.

Subsistence Fishery

The early Aboriginal inhabitants of the Lake Nipigon Basin relied on the Lake Nipigon fishery as a source of food. This tradition of subsistence fishing continues today by the First Nation people whose traditional lands include Lake Nipigon. Subsistence fishing includes a limited amount of angling and some gillnetting on a year round basis.

The level of subsistence harvest has not been quantified (Swainson, 2001).

6.5.2 FOREST AND MINERAL RESOURCE USE

With the designation of the Lake Nipigon Conservation Reserve as a protected area through the *Lands for Life* and *Ontario's Living Legacy* planning processes, forestry and mineral exploration are no longer permitted activities within the conservation reserve boundaries. Forest Reserves exist in English Bay, Chief Bay and Black Sturgeon Bay where active mining claims were staked prior to the designation of the conservation reserve. Mineral exploration is a permitted use in forest reserves. If these claims lapse, the land will be incorporated into the Lake Nipigon Conservation Reserve.

Logging has occurred in the past in the Lake Nipigon Conservation Reserve. Early operations concentrated on white pine and spruce saw logs and later on spruce pulpwood. The many river systems allowed early loggers to use river drives and booms on Lake Nipigon to transport the wood. A small number of logging operations took place on Shakespeare and Kelvin Islands in the 1940s and 50s.

6.5.3 WATER RESOURCE USE

Hydroelectric Power Generation

Between 1918 and 1950 four waterpower dams were constructed on the Nipigon River; the Virgin Falls Dam, Cameron Falls Dam, Alexander Dam and the Pine Portage Dam. The dams have resulted in a 17 cm increase in the level of Lake Nipigon. In addition, in 1943 the construction of the Ogoki Diversion on the Ogoki River raised the lake level by 35 cm and increased the flows by 50% in the Nipigon River. The total resulting increase in lake level is 62 cm. Varying water levels resulting from dam operations have had a significant negative impact on aquatic organisms, fish habitat and spawning activity in Lake Nipigon and especially in the Nipigon River.

In 1994, a long-term Nipigon River Water Management Strategy was developed after extensive planning and fieldwork. This strategy identified guidelines for addressing

water level needs for Lake Nipigon and Nipigon River fish and all users. From this strategy, an operating plan to guide the day to day dam operations has recently been developed. The plan provides tables with weekly recommended flows for any given Lake Nipigon level and inflow (Swainson, 2001c). The new operating plan will significantly improve water level conditions for fish in and for users of Lake Nipigon and the Nipigon River.

All three of the generating stations are operated by Ontario Power Generation (formerly Ontario Hydro). In 2000, the total value of the Nipigon River power production was \$86 million. The dams on the Nipigon River generate power for the Thunder Bay area and surrounding communities of the north shore. The Ogoki Diversion provides increased water flow through the Great Lakes system, thereby increasing the power resources of Southern Ontario and Quebec and improving levels of the Great Lakes for the benefit of Canada and the United States (HEPC, 1942 in Swainson, 2001c).

Another hydroelectric power dam is located on the Namewaminikan (Sturgeon) River. Although not situated within the Lake Nipigon Conservation Reserve, this facility has impacted the lake environment. It was constructed in 1992, creating a 7 km long reservoir. In 1993, the earthen dam was breached and tons of sediment was washed downstream and into Lake Nipigon (Swainson, 2001c). It has never operated due to financial and technical difficulties. The dam is currently in disrepair and will require substantial investment to make it operational. Communications between Nipigon District MNR and the Dam owner are underway to ensure the situation is rectified.

Drinking Water

Gull Bay, Rocky Bay, Macdiarmid, Sandpoint, Orient Bay and Poplar Point cottagers use Lake Nipigon as a source of drinking water. Gull Bay and Rocky Bay have water treatment facilities, although water quality has been degraded at times and boil water advisories have been issued. Residents of Macdiarmid,

Orient Bay and Poplar Point area take water directly from the lake and may use individual filtering systems or they use wells for their drinking water. There are no known direct sources of toxic chemicals entering into Lake Nipigon today. Nutrient loading and water contamination may be occurring from areas of human development.

6.5.4 WILDLIFE RESOURCE USE

Wildlife Viewing

Wildlife resource use in the Lake Nipigon Conservation Reserve includes wildlife viewing, trapping and hunting. Wildlife viewing is increasing in popularity and is now often considered an integral and important part of any outdoor experience, be it an angling expedition or a sea kayaking trip. The opportunity to view wildlife in their natural surroundings is a thrill for any outdoor enthusiast. Due to its pristine and undeveloped nature, the Lake Nipigon Conservation Reserve provides abundant opportunity to view wildlife including species at risk such as woodland caribou, bald eagles and pelicans. Cruiser boat operators are seeing the value of maintaining abundant wildlife populations in the conservation reserve, as their clients are increasingly more interested in wildlife viewing as opposed to just angling and hunting.

Hunting

The Lake Nipigon Conservation Reserve falls within Wildlife Management Units (WMU) 15B, 19, 20 and 21A. The islands make up WMU 20, the south and west side of the conservation reserve fall into unit 15B and the east side of the conservation reserve falls into WMU 19 and 21A. There is no big game hunting season in WMU 20 (islands), however, small game hunting (grouse and snowshoe hare) is permitted.

Moose are the principal big game animal in the conservation reserve. Since the migration of moose to the Lake Nipigon area in the late 1800s, Aboriginals and European settlers have hunted them for subsistence purposes. In 1957, the Lake Nipigon Islands Crown Game

Reserve was established (Gollat, 1975). This status was retained until 1965 at which time the islands were opened for hunting. In 1970 hunting again became a non-permitted use. Geikie Island retained its game preserve status and is now called the Geikie Island Caribou Crown Game Preserve. Moose are heavily targeted during hunting season around the shores of Lake Nipigon and Aboriginals continue to hunt them for subsistence purposes throughout the conservation reserve.

White-tailed deer have become more abundant in the area south of Lake Nipigon due in part to the disturbances caused by forestry activities and the resulting availability of early successional habitat. Although there is currently no season for white-tailed deer in WMU 15B, potential exists for a deer hunt in this area.

Black bear has steadily increased in importance as a big game animal. Bear hunting is done primarily by non-residents using local bear outfitter services. There are currently four Bear Management Areas (BMA) that fall partially or wholly within the Lake Nipigon Conservation Reserve as identified in Table 10. Bear hunting is not permitted on the Lake Nipigon islands but does occur on the shore lands.

Trapping

Trapping is the oldest commercial industry in the Lake Nipigon Conservation Reserve. Trapping was not controlled until 1947 when the Department of Lands and Forests implemented a licensed trapping system with registered traplines. From 1957 to 1965 trapping was not permitted on the Lake Nipigon islands due to the establishment of the Lake Nipigon Islands Crown Game Preserve. As of the 1998 trapping season, the predominant species trapped were marten, beaver and weasel (Swainson and McNaughton, 2001). Other species include muskrat, otter, mink, lynx, fisher, wolf, red fox and red squirrel.

There are nineteen registered traplines that fall partially or wholly within the Lake

TABLE 9: LIMNOLOGICAL CHARACTERISTICS FOR LAKE NIPIGON

Source: Swainson, 2001

PARAMETER	LAKE NIGPIGON MEASUREMENTS
Surface Area (ha)	484,800
Catchment Area (ha)	2,465,000 or 2,934,8000
Maximum Depth (m)	166
Mean Depth (m)	Estimated 46
Water Renewal Time (yrs)	25.6
Lake perimeter (km)	1,044
Island Perimeter (km)	1,000
Oxygen (mg/l)	8.6 – 13.2
pH	6.4 – 8.2
Alkalinity (mg/l)	30.8 – 68.4
Transparency Open Lake (m) secchi disk	4.0 – 5.5
Transparency Ombabika Bay (m) secchi disk	1.5
Chlorophyll a (ug.L)	2.4
Nitrate mg/l	.016 (range .007 - .075)
Total phosphorus	.056 (range .01 - .10)
Total Dissolved Solids (mg/l)	79 – 83
Mean monthly epilimnetic temperature	13
June - Aug. 1989-1992 (celcius)	

TABLE 10: BEAR MANAGEMENT AREAS IN LAKE NIPIGON CONSERVATION RESERVE

OUTFITTER NAME	BMA LICENCE NUMBER	APPROXIMATE LOCATION
Royal Windsor Lodge	NG 21A-06	Pijitawabik Bay
Royal Windsor Lodge	NG 15B-32	Bonner Island
W.F.O. Bear Hunt Inc.	NG 15B-43	South Shore Lake Nipigon
Wolf River Bear Baits	NG-15B-31	South Shore Lake Nipigon

Nipigon Conservation Reserve (NG10, NG11, NG14, NG19, NG 20, NG21, NG23, NG27, NG28, NG29, NG35, NG50, NG62, NG71, NG73, NG74, NG82, NG86, NG93).

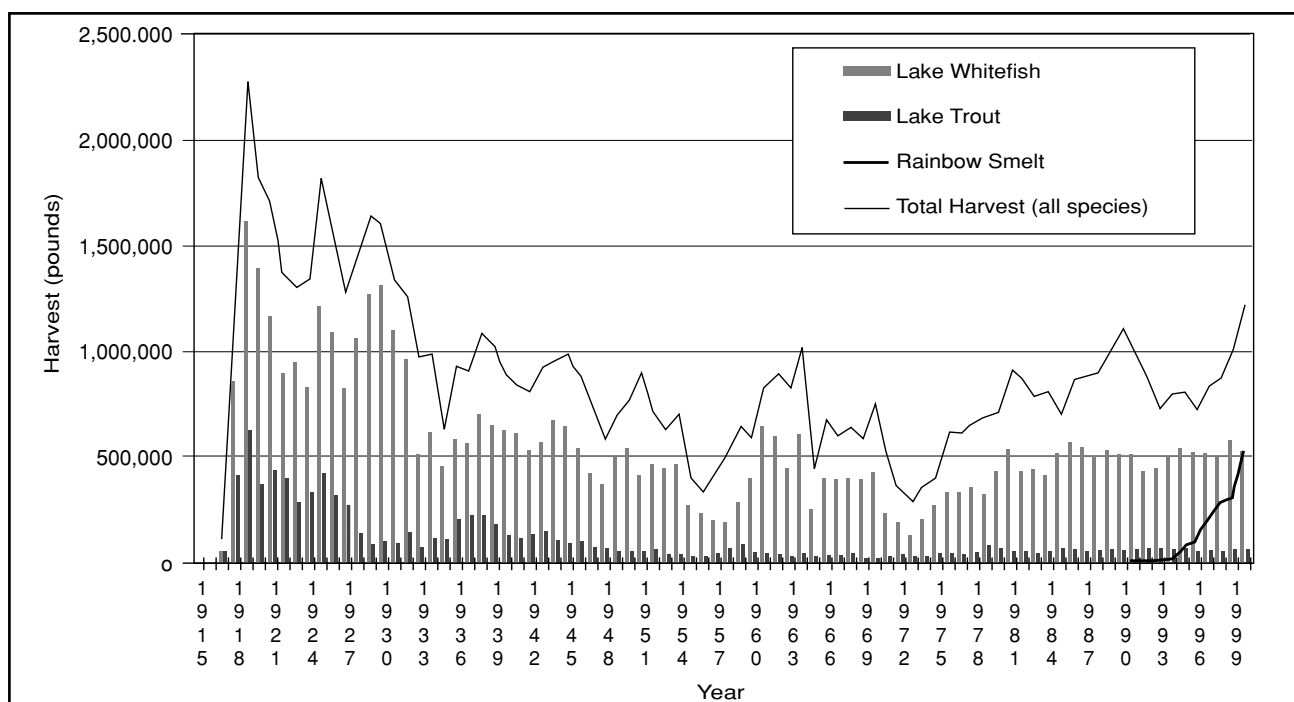
6.5.5 TOURISM AND OUTDOOR RECREATION

The Lake Nipigon Conservation Reserve abounds with opportunities for outdoor recreation including camping, boating, canoeing, sea kayaking, wildlife viewing, hiking, angling and hunting. The fact that the conservation reserve is basically undeveloped and the natural environment is in a near pristine condition means optimal experiences for tourists and recreationists.

There are seven cruiser boat operators who offer extended trips on Lake Nipigon, providing accommodation and services. Although the majority of their clientele are anglers, these operators also cater to hunters in the fall and family groups looking for a quality outdoor recreation experience. Some of the cruiser operators also own tourist establishments in Orient Bay outside the boundaries of the conservation reserve. Others simply operate their cruiser service from a docking facility (High Hill Harbour, Sandy's Dock). There are about 25 to 30 charter boat operators who mainly cater to anglers, providing half-day and day-long

FIGURE 3: REPORTED COMMERCIAL HARVEST, Lake Nipigon (1917 – 2000)

Source: Swainson, 2001



fishing excursions. These charter boat operators work out of High Hill Harbour or Poplar Lodge Campground.

Lake Nipigon provides many opportunities for backcountry camping, boating and sea kayaking. There are approximately 40 Crown land campsites that exist in the conservation reserve on the islands and shoreline of Lake Nipigon. There is no organized campground within the conservation reserve, but the Poplar Lodge Campground in the Lake Nipigon-Beardmore Enhanced Management Area serves as a staging area for boaters, sea kayakers and canoeists who are heading into the Lake Nipigon Conservation Reserve to recreate.

Canoeing on the open waters of Lake Nipigon is a challenge, however, there is opportunity for canoeing in the Castle Lake area. Also many of the rivers flowing into Lake Nipigon are popular amongst canoeists (Gull River, Kopka River, Pikitigushi River, Onaman River, Whitesand River, Namewaminikan River).

There are no cottage subdivisions within the boundaries of the conservation reserve, however, cottage lot owners in the Lake Nipigon-Beardmore Enhanced Management Area recreate in the conservation reserve. Two private recreation camps exist, one held under land use permit on Albert Island and one held under Licence of Occupation on Davis Island.

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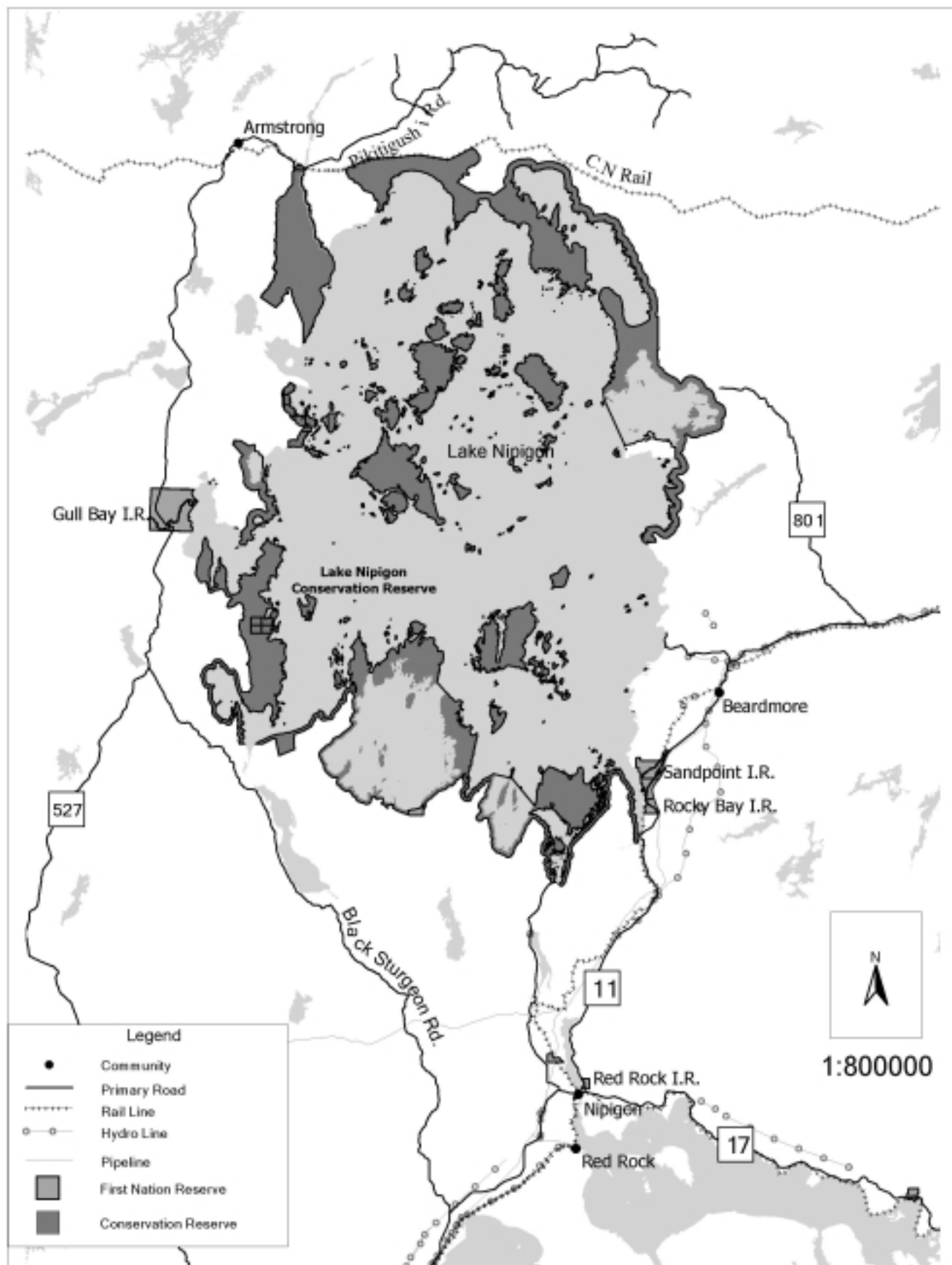
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INSERT FIGURE 4

BOUNDARY MAP FOR LAKE NIPIGON CONSERVATION RESERVE

FIGURE 5: REGIONAL SETTING MAP FOR LAKE NIPIGON CONSERVATION RESERVE



Data Source: MNR NRVIS Database
 Projection: Universal Transverse Mercator, Zone 16
 North American Datum, 1983
 Date: 06/03/02

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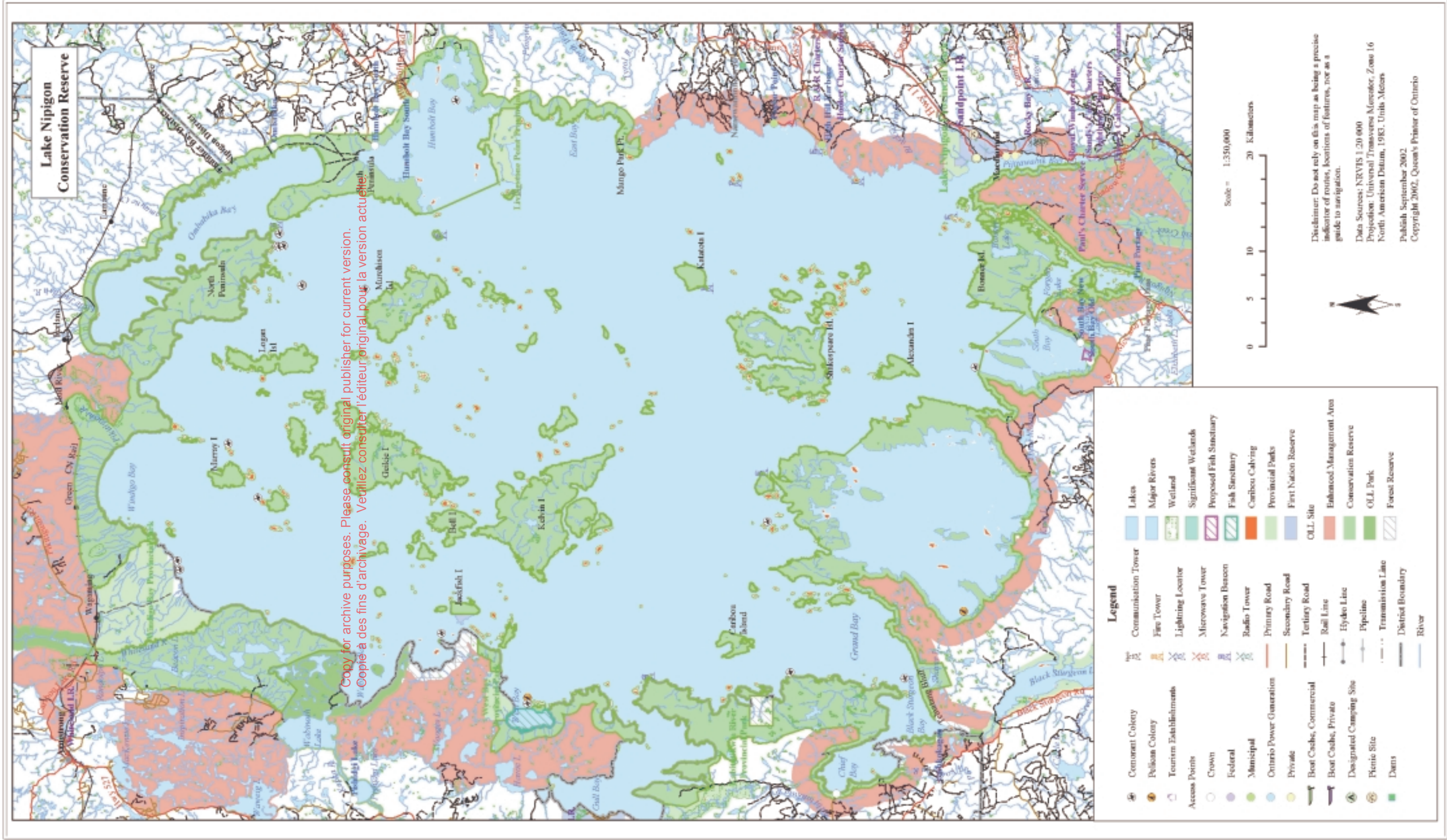
INSERT FIGURE 6

RESOURCE MANAGEMENT MAP FOR LAKE NIPIGON CONSERVATION RESERVE

FIGURE 4: BOUNDARY MAP FOR LAKE NIPIGON CONSERVATION RESERVE



FIGURE 6: RESOURCE MANAGEMENT MAP FOR LAKE NIPIGON CONSERVATION RESERVE



NIPIGON PALISADES CONSERVATION RESERVE RESOURCE MANAGEMENT PLAN

CHAPTER 3

July 2003

APPROVAL STATEMENT:

I am pleased to approve the Management Plan for the **Nipigon Palisades Conservation Reserve**.

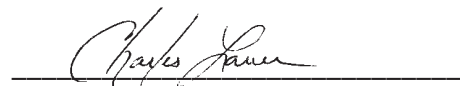
This Management Plan provides guidance for the management of the Conservation Reserve and the basis for ongoing monitoring activities.

The **Nipigon Palisades Conservation Reserve** is located within the Lake Nipigon Basin Signature Site, one of 9 such areas featured in the *Ontario's Living Legacy Land Use Strategy* (1999). Signature Sites are identified for their range of natural and recreational values and their potential to contribute to future recreation and tourism.

This Management Plan has been developed under the general direction of the Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy, which provides the overall context for land use and resource management activities in the basin.



Ian Hagman
District Manager
Nipigon District



Charlie Lauer
Regional Director
Northwest Region

STATEMENT OF ENVIRONMENTAL VALUES AND THE ENVIRONMENTAL BILL OF RIGHTS

In accordance with the provisions of the *Environmental Bill of Rights*, the Ministry of Natural Resources prepared a *Statement of Environmental Values*. It describes how the purposes of the *Environmental Bill of Rights* are to be considered whenever decisions are to be made which might significantly affect the environment.

The primary purpose of the *Environmental Bill of Rights* is “to protect, conserve and wherever possible, restore the integrity of the environment.” From the Ministry’s perspective, that broad statement of purpose translates into four objectives in its *Statement of Environmental Values*:

- To ensure the long-term health of the ecosystems by protecting and conserving our valuable soil, aquatic resources, forest and wildlife resources as well as their biological foundations;
- To ensure the continuing availability of natural resources for the long-term benefit of the people of Ontario;
- To protect natural heritage and biological features of provincial significance; and,
- To protect human life, the resource base and the physical property from the threats of forest fires, floods and erosion.

The Ministry’s *Statement of Environmental Values* has been considered in the development of this resource management plan for Nipigon Palisades Conservation Reserve.

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1.0 INTRODUCTION

The Nipigon Palisades Conservation Reserve was established as part of *Ontario's Living Legacy*, a land use strategy released in 1999 that guides the planning and management of Crown lands in central and portions of northern Ontario. In the *Ontario's Living Legacy Land Use Strategy*, 378 new protected areas were identified, including the Nipigon Palisades Conservation Reserve.

This conservation reserve is one of seventeen Land Use Designations that form the Lake Nipigon Basin Signature Site, one of nine signature sites within the province of Ontario. It was identified as having a range of highly significant values that warrant special strategies.

The Nipigon Palisades Conservation Reserve was designated to protect the canyon and ravine features along Orient Bay and west to the Nipigon River. The area includes the Pijitawabik Palisades, a very prominent and well-known geologic feature as well as the major glacial spillway that drained glacial Lake Kelvin. The scenic cliffs and canyons make this area an attractive destination for tourists and a world class location for rock/ice climbers. The reserve also provides a major moose travel corridor, habitat for the peregrine falcon, diabase sill tablelands, and microclimates favorable for arctic-alpine disjunct species.

The designation of Conservation Reserve permits many traditional land uses to continue, including non-consumptive recreational activities, hunting, trapping and angling while at the same time excluding timber harvesting, mining, hydroelectric power development and the disposition of Crown land.

The planning process and public consultation required for the development of this resource management plan was an integral part of the overall development process for the *Ecological Land Use and Resource Management Strategy for the Lake Nipigon Basin Signature Site*. Detailed information

relating to the planning process and the public input obtained can be found in Appendix A of the strategy document.

2.0 PLANNING AREA

2.1 REGIONAL SETTING

The Nipigon Palisades Conservation Reserve is located in the northwest region of the Province of Ontario, within the Nipigon administrative District of the Ministry of Natural Resources. It covers 11,582.1 hectares of Crown land at the southeast corner of Lake Nipigon, approximately 170 kilometers northwest of Thunder Bay and 25 kilometers north of the town of Nipigon (about 88 degrees 07 minutes north longitude and 49 degrees 17 minutes west latitude) (Figure 7).

The central canyon adjacent to the Pijitawabik Palisades acts as a utility corridor that includes Highway 11, a spur of the Canadian National Railway, the Trans-Canada Pipeline and hydro-electric and telecommunications rights of way.

In addition to the Pijitawabik Palisades and scenic cliffs at the south end of Pijitawabik Bay, the conservation reserve includes a section of cliffs west of Keemle Lake, Shamrock Lake, McKirdy Lake and Wanogu Lake that extend north along the Cash Creek Gorge and west to the eastern boundary of the Nipigon River Conservation Reserve. The boundary of the Nipigon Palisades Conservation Area has been revised from that originally identified in the *Ontario's Living Legacy Land Use Strategy* to include the northern section of the Cash Creek Gorge to better capture the entire gorge area (Figure 8).

The tiny hamlet of Orient Bay, originally built as a stop point for the CNR at the south end of Pijitawabik Bay, is located approximately two kilometers north of the conservation reserve boundary along Highway 11. Other nearby communities include Beardmore and Macdiarmid (within the newly created Regional Municipality of Greenstone),

Nipigon, Red Rock, Biinjitiwaabik Zaaging Anishinaabek (Rocky Bay) and Red Rock First Nation (Lake Helen). These communities provide essential services such as gas, shopping, groceries, banking, restaurants, hotels and medical care. The City of Thunder Bay has an international airport and is the largest service centre in the region.

This conservation reserve abuts with other conservation reserves and enhanced management areas of the Lake Nipigon Basin Signature Site. The Lake Nipigon -Beardmore Enhanced Management Area (EMA) and the Lake Nipigon Conservation Reserve are adjacent to the northeast corner, the Orient Bay Peninsula EMA is located along the northern border, and the Nipigon River Conservation Reserve is located adjacent to the western boundary.

2.2 DESCRIPTION OF THE STUDY AREA

The Nipigon Palisades Conservation Reserve is located within the Nipigon Plate, a sub-province of the Southern Province of the Canadian Shield. The area is famous for the towering cliffs near Orient Bay known by geologists as the Pijitawabik Palisades. The exposed rock faces, cool crevices, cliff ledges and talus slopes create favorable microclimates for arctic-alpine and rare plant species. The cliffs that tower 140 metres over Lake Nipigon also provide important habitat for bird species at risk including the bald eagle and the Peregrine falcon. The reserve also harbours reptiles and amphibians requiring warmer-than-normal habitats such as the western painted turtle.

Aboriginal people have inhabited the area around Lake Nipigon since the last ice age. These nomadic hunters and gatherers relied on the fish, wild plants, small game and large game in the area. An archeological find south of Orient Bay, dates back to the Shield Archaic period, approximately 3,000 to 4,000 years ago. This grave cache yielded numerous copper artifacts.

European entrepreneurs arrived to the area in the early 1650s, drawn by the seemingly

limitless beaver, otter, fox, and muskrat. The historical fur trade was built upon the well-established trade routes of North American Natives and their intimate knowledge of the landscape. Around 1890, the Hudson's Bay Company established the Bay View Trading Post at the south end of the Pijitawabik Bay.

In 1912, construction began on a southern Canadian National Railway (CNR) between Port Arthur and Longlac. The line was established along the shore of Orient Bay. Railway access was followed by the establishment of a commercial fishery on Lake Nipigon. Fishing outfits were unloaded from flatcars at Orient Bay and smaller gas boats were unloaded further north on the Pijitawabik Bay at Macdiarmid. Fish were then unloaded at Macdiarmid and transported by horse-drawn wooden sled over cleared ground to the Orient Bay CNR rail stop for shipment. Tourist outfitters at Orient Bay later converted fish tugs and offered extended guided boat excursions around the lake.

Today, resource use includes wildlife viewing, trapping and hunting. Sport fishing occurs year round on the lakes and tributaries of the Nipigon Palisades Conservation Reserve. The conservation reserve also provides numerous other recreational opportunities including ice/rock climbing, hunting, snowmobiling, and scenic hiking. There are a number of tourism establishments developed within the conservation reserve for hunting and angling excursions.

3.0 GOAL AND OBJECTIVES

Goal Statement: *To protect, enhance and where necessary, restore the natural ecosystems, populations and wilderness qualities of the Nipigon Palisades Conservation Reserve, while allowing for recreational development that will not compromise the integrity and environmental values of the conservation reserve ecosystem.*

Objectives specific to the Nipigon Palisades Conservation Reserve have been developed in light of the overall objectives for the Lake Nipigon Basin Signature Site. The intent is to implement strategies that contribute to the overall objectives of the Lake Nipigon Basin Signature Site.

3.1 ACCESS

- To develop one or more parking and access facilities along Highway 11 at the Pijitawabik Palisades for hiking and rock/ice climbing enthusiasts
- To ensure that maintenance and/or upgrading of existing access through the conservation reserve for forest and mining activities in the Orient Bay Peninsula Enhanced Management Area does not damage the sensitive features of the conservation reserve

3.2 CROWN LAND USE

- To allow for Crown land activities (i.e. hiking, rock/ice climbing, hunting, fishing, and nature appreciation) within the Nipigon Palisades Conservation Reserve, while ensuring the protection of sensitive features (significant plants, nesting sites, and cultural heritage sites) through restricted use zoning
- To protect the natural character of the conservation reserve by allowing no disposition of Crown land for recreation camps or outpost camps

3.3 TOURISM/RECREATION

- To consider the development of new tourism and recreational opportunities within the conservation reserve such as scenic lookouts, hiking trails and access facility development
- To ensure tourism/recreation developments and activities do not diminish the integrity of the supporting natural resource base

3.4 FISH COMMUNITY AND FISHERIES

- To protect, rehabilitate and sustain aquatic ecosystems and native fish populations within the inland lakes and streams and rivers of the Nipigon Palisades Conservation Reserve
- To improve the monitoring of fisheries resources within the lakes, streams and rivers of the Nipigon Palisades Conservation Reserve
- To evaluate and monitor the fish stocking program within the conservation reserve
- To allow for the benefits of First Nation subsistence activities in addition to the social and economic benefits of sport and bait fishing

3.5 WILDLIFE

- To protect, sustain and where necessary, rehabilitate wildlife habitat and populations in the conservation reserve
- To allow for the benefits of Aboriginal subsistence hunting in addition to wildlife viewing, sport hunting and trapping
- To promote opportunities for non-consumptive uses of wildlife in the conservation reserve such as nature appreciation, interpretation, education, photography and scientific study
- To work to maintain and where possible expand the populations of wildlife species at risk in the Nipigon Palisades

Conservation Reserve (e.g. bald eagle, peregrine falcon, cougar and wolverine)

- To encourage First Nations, local communities and interest groups to be partners in the protection and management of wildlife in the conservation reserve by involving them in information gathering, public education, and habitat improvement projects

3.6 VEGETATION

- To identify, document and protect regionally significant, provincially significant and arctic-alpine disjunct plant species /communities within the conservation reserve

3.7 WATER RESOURCES

- To ensure the continued maintenance and where necessary improvement of water quality and to ensure that no degradation of water quality occurs as a result of tourism or recreational activities /development in the conservation reserve

4.0 MANAGEMENT DIRECTION FOR CONSERVATION RESERVE

The management direction that follows in this section must be considered along with the direction contained in MNR's conservation reserve policy. Where this resource management plan does not address a specific activity, the provisions of the conservation reserve policy will apply.

4.1 ACCESS

4.1.1. DISCUSSION

Existing road development in the Nipigon Palisades Conservation Reserve is a combination of public highways, primary and secondary forest logging roads, and private roads. The number of motorized vehicles travelling on Highway 11 is high and continues to increase. In 1999, Highway 11 through Beardmore received approximately 300,000 passenger vehicles and 182,500 transport vehicles. These numbers have doubled since 1989 (Hilderman et al. 2000).

The present layout of Highway 11 through the Pijitawabik Palisades is a winding two lane paved highway with very narrow gravel shoulders and one half-circle pull-off at the Pijitawabik Palisades historical plaque site. This section becomes especially treacherous when tourists and recreational enthusiasts pull off on the narrow shoulders to view the scenery or climb the cliffs and waterfalls. Particularly during the winter months, highway shoulders are covered by snow banks and vehicles pulled off on the side extend into the traffic lane. This hazard to the recreational users and passing motorist needs to be addressed. The dangerous conditions will intensify as the number of vehicles increases.

A number of primary and secondary forestry logging roads are present within the Nipigon Palisades Conservation Reserve. This road network is used by the forest and mining industry to access the Crown land to the east of the conservation reserve. In addition, roads such as the Camp 81 Road that runs

near the Gorge Creek, are used by anglers, hunters and trappers to access the resources within the conservation reserve, and adjacent Crown Lands. The stream crossings of these roads have been prone to washouts and resulted in the destruction of fish habitat on numerous occasions (Figure 9).

4.1.2 DIRECTION

One or more safe public parking areas and hiking trails will be developed within the Nipigon Palisades Conservation Reserve to facilitate rock/ice climbing, hiking and viewing opportunities in the Pijitawabik Palisades area. The Ministry of Transportation will be consulted in the planning phase for this facility and partners will be required to ensure its long-term maintenance.

Maintenance and/or upgrading of the existing Shadow Creek road corridor through the conservation reserve to the Orient Bay Peninsula Enhanced Management Area for forestry and mining purposes is permitted. Existing secondary roads will be inspected for compliance with OMNR water crossing guidelines. Planning for the Shadow Creek road corridor will take place under the Forest Management Planning Process for the Lake Nipigon Forest. No new road development to access private land within the conservation reserve will be permitted.

4.1.3 MANAGEMENT STRATEGIES

- Permit road access for forestry and mineral exploration purposes through the conservation reserve to Crown land in the Orient Bay Peninsula Enhanced Management Area through the upgrading of the existing Shadow Creek road corridor
- Planning for access will take place under the Forest Management Planning Process for the Lake Nipigon Forest
- Inspect all water crossings for compliance with OMNR water crossing guidelines
- Ensure proper erosion control is in place and fish passage is unobstructed

- In partnership with stakeholders (i.e. Domtar, MTO and DFO) develop and implement mitigation plans for each problem crossing
- Permit no new access to private land within the conservation reserve
- Physically remove any new access discovered and sign immediately
- Develop one or more safe and well maintained, all season access points on Highway 11 in the Pijitawabik Palisades for recreational user groups
- Work in partnership with the Ministry of Transportation, the Regional Municipality of Greenstone, the Town of Nipigon and The Alpine Club of Canada (Thunder Bay Chapter) and other stakeholder groups to develop safe, well maintained, all season access points
- Work with stakeholder groups to erect interpretive panels

4.2 CROWN LAND USE

4.2.1 DISCUSSION

Crown land use includes the many outdoor activities that take place on Crown land including camping, hiking, berry picking, swimming, picnicking, boating, hunting, angling and snowmobiling. Crown land use also includes the construction of facilities on Crown land for certain purposes (e.g. trap cabins and recreation camps) authorized through land use permits, leases or letters of authority.

These activities can have a negative impact on the ecological integrity of the conservation reserve if not managed properly. Some of these impacts include destruction of vegetation, litter, damage to sensitive habitats and degradation of landscape features.

Within the Nipigon Palisades Conservation Reserve, there are currently a low number of recreationists competing for the resources. However, as the profile of the Lake Nipigon Basin Signature Site is raised, the direct

pressure on the resource and its associated effects is expected to increase. Such is the case with the recreational groups hiking and climbing around the sensitive Pijitawabik cliffs. The risk of destroying sensitive flora communities may increase.

Recreational ice and rock climbing are increasing in popularity in the Pijitawabik Palisades. Consequently, the impacts of this user group on and around the cliffs will continue to increase. The potential to degrade the cliff habitat of the flora and fauna exists. Rock climbing can remove lichens, mosses and other hydrophilic plants and may disturb wildlife populations and habitat (i.e. nesting sites) around climbing sites. The practice of bolting by rock climbers may also impact the cliff ecology and may need to be addressed in the future.

4.2.2 DIRECTION

The opportunities for Crown land recreation will be encouraged in a manner that does not jeopardize any significant earth, life or cultural values. Areas of high sensitivity will be identified and managed to prevent negative impact to these sites. Use will be directed to existing and future approved trail, access and viewing facilities. No-use zones will be used to protect sensitive vegetation once better information on species and location is available.

4.2.3 MANAGEMENT STRATEGIES

- Crown land use will be restricted in all areas of critical wildlife habitat. For example;
 - within 200 metres of a bald eagle nest between March 15 and August 15
 - within 300 metres of a great blue heron colony between April 15 and August 15
 - within 200 metres of an osprey nest between March 15 and August 15
 - within 1000 metres of a peregrine nest between March 15 and August 15
- The public will be educated regarding restricted use zones and times through brochures, maps and signage
 - Place educational signage outlining the restrictions on crown land use and the reasons for them at the proposed highway access point to the Pijitawabik Palisades
 - Distribute educational brochures and maps through the local MNR office and through partners such as tourist outfitters, municipalities, Thunder Bay Field Naturalists, Ontario Federation of Anglers and Hunters and tourism information centres
- Improve trail access to the ice/rock climbing sites and waterfall viewing areas
 - Work with stakeholder groups such as The Alpine Club of Canada, the Nipigon Section of the Voyageur Hiking Club, The Thunder Bay Hiking Club, and the Thunder Bay Field Naturalists to improve trail access to climbing sites and waterfall viewing areas
 - Work with stakeholder groups to erect signage and interpretive panels at Highway access points, along trails, and at trailheads
 - Leave existing rock/ice climbing routes as they are
- Take management action, in consultation with the climbing community, should it be determined that climbing activity in the Pijitawabik Palisades is negatively impacting the earth and life science values for which this area was set aside
- Require climbers to follow the direction in the Climber's Code of Conduct (Appendix E of the strategy document).
 - Prohibit unnecessary pruning, trampling of cliff edge communities, damage to anchor trees, and defoliating vegetation, and bolting
 - Investigate climbing sites annually for signs of irresponsible use and abuse

- Erect educational signage about sensitive vegetation and wildlife species
- Institute cliff closures to protect regionally, provincially, or nationally significant species (i.e. Peregrine Falcon) or to protect sensitive vegetation (such as arctic-alpine disjunct species)
- Institute a user restriction if, in the future, it is determined that overcrowding is an issue
- Allow development of new climbing routes only if impact assessment indicates no impact on sensitive features
- Permit the replacement of bolts at existing climbing sites
- Discourage the placement of new bolts at existing climbs except where required for safety reasons.
- Actively encourage scientific investigation, regardless of the cliff location, if the researcher qualifications are valid and the nature of the study is well documented
- Work to improve communication between the MNR and local climbing groups/individuals
- Work with The Alpine Club of Canada, Thunder Bay Section to facilitate discussion around existing and potential climbing routes
- Work with The Alpine Club of Canada, Thunder Bay Section to improve inventory of significant flora and fauna species sightings
- Work with The Alpine Club of Canada, Thunder Bay Section to develop an information pamphlet outlining climbing restrictions (i.e. seasonal closures around nesting sites), issues around sensitive species, and the guidelines for low impact climbing activities. This brochure could potentially be distributed to tourist information centres, climbing groups, climbing equipment retailers, climbing gyms, and posted on local climbing websites

4.3 TOURISM AND RECREATION

4.3.1 DISCUSSION

The Nipigon Palisades Conservation Reserve provides excellent tourism and outdoor recreation opportunities such as world class ice/rock climbing, exceptional landscape, and a chance to view species at risk. The local communities such as Orient Bay, Nipigon, and Beardmore benefit from tourism activity generated by these opportunities.

The majority of visitors to the Pijitawabik Bay area are generally day-use visitors. Although some of the tourists to the area use the seasonal accommodations provided by the various tourism facilities at Orient Bay. Often, the areas that are highly attractive to recreational users such as cliffs and ravines, are also habitats that are highly sensitive to disturbance. The cumulative impacts from a constant stream of recreationists can potentially be high in certain sensitive areas.

Currently, there are a few short unmarked hiking trails in the conservation reserve. While these are generally used by climbers to access the climbing sites, there are a few trails also used by hikers to access scenic waterfalls.

4.3.2 DIRECTION

Tourism development within the Nipigon Palisade Conservation Reserve will be low impact and will include trail development, signage, and educational/ interpretive material and displays. Trails to access climbing routes and scenic lookouts from the proposed access improvement along Highway 11 will be enhanced, subject to sensitive feature impact assessments, to improve the opportunities for ice/rock climbers and hikers.

4.3.3 MANAGEMENT STRATEGIES

- Subject to the results of environmental impact assessments, improve trail access to the ice/rock climbing sites and waterfall viewing areas in partnership with stakeholders groups such as The Alpine Club of Canada, the Nipigon Section of the Voyageur Hiking Club, The Thunder Bay

Hiking Club, and the Thunder Bay Field Naturalists

- Work with stakeholder groups to erect signage and interpretive panels at Highway access points, along trails, and at trailheads
- Develop a trail along the top of the Pijitawabik Palisades running the entire length subject to vegetation and wildlife impact assessment surveys
- Work in partnership with stakeholder groups (i.e. the Nipigon Section of the Voyageur Trail Association, the Thunder Bay Hiking Club, Land of the Nipigon Waterways Development Association, the Regional Municipality of Greenstone and/or the Township of Nipigon) to establish the trail route and clear the trail
- Develop quality tourist information products
- In partnership with local municipalities, tourist outfitters, etc., develop a colour map handout of the Nipigon Palisades Conservation Reserve and surrounding protected areas. Identify trails, restricted use zones and include information on species at risk, cultural history and significant plant species
- Consider opportunities for the development of trails for snowmobiling

4.4 FISH COMMUNITIES AND FISHERIES

4.4.1 DISCUSSION

The Nipigon Palisades Conservation Reserve is home to a number of important tributaries and lakes. Many of the tributaries, including the Gorge Creek, Shadow Creek and Palisades Creek are smelt spawning areas and popular brook trout streams. Access roads that cross these streams (i.e. Camp 81 Road) in the Palisades area have been prone to washouts and have resulted in fish habitat destruction on numerous occasions (Figure 9).

The lakes within the Nipigon Palisades Conservation Reserve have a variety of native and non-native fish species present.

As discussed in the background information section, these native species include brook trout, whitefish, pike, and yellow perch. Stocked species include brook trout, lake trout, walleye, and splake.

The fishery resource provides a number of benefits to local communities, including the provision of food, employment and recreational opportunities. Sustaining high quality fisheries in the face of increasing fishing pressure is likely to be the most significant fisheries concern for the immediate future. This is particularly the case for waterbodies situated near well-developed access routes such as the lakes adjacent to Highway 11 in the Nipigon Palisades Conservation Reserve. While heavy sportfishing activity does not presently occur in many of the lakes within the Nipigon Palisades Conservation Reserve, pressures may heighten as the profile of the area is raised and the number of visitors to the area increases. Increased stocking in the conservation reserve may function to reduce fishing pressure on Lake Nipigon and the Nipigon River.

4.4.2 DIRECTION

The protection of fish communities will take precedence over human use and development activities. The collection of information needed to make management decisions will be given priority such as habitat and species use of tributaries and lakes. Increased stocking in some of the Nipigon Palisades Conservation Reserve lakes will be investigated to augment angling opportunities.

4.4.3 MANAGEMENT STRATEGIES

- Improve knowledge of fish communities within the conservation reserve
- Initiate monitoring of fish communities in the conservation reserve to determine long term population and habitat use
- Increase angling opportunities along the Highway 11 corridor by improving access to lakes such as Keemle, Shamrock, and Wanagu

- Investigate the possibility of increasing the number of stocked lakes within the Nipigon Palisades Conservation Reserve and creating walking trails to access them
- Work with the angling community {The Ontario Federation of Anglers and Hunters (OFAH), the Northwestern Ontario Sportmans Alliance (NOSA), etc.} to identify potential lakes to be stocked
- Work with stakeholder groups to establish access hiking trails into these lakes
- In consultation with Aboriginal communities develop estimates of current and future subsistence demand for fish resources in the conservation reserve
- Determine whether non-Aboriginal and Aboriginal harvest combined are sustainable
- Inspect all water crossings for compliance with OMNR water crossing guidelines
- Ensure proper erosion control is in place and fish passage is unobstructed
- Work in partnership with stakeholders {i.e. Domtar, Ministry of Transportation (MTO) and Department of Fisheries and Oceans (DFO)} to develop and implement mitigation plans for each problem crossing
- Rehabilitate fish habitat in Gorge Creek where road washouts have resulted in significant channel morphology alterations
- Improve the system of reporting for bait fishing within the Nipigon Palisades Conservation Reserve
- Work with bait fishers to develop a reporting system that specifies the water body from which harvesting occurs. This will be part of a larger initiative in the Lake Nipigon Basin

4.5 WILDLIFE

4.5.1 DISCUSSION

The Nipigon Palisades Conservation Reserve is home to a number of common boreal wildlife species as well as a number of important species at risk. Bald eagles have been known to nest just outside the boundaries of the conservation reserve, north of Orient Bay on the west side of Pijitawabik Bay. This species requires isolation for successful breeding.

While no known peregrine falcon pairs are currently nesting within the Pijitawabik Palisades area, it is likely that as the population increases in size, the utilization of sites within the area will occur. This species is also highly sensitive to human disturbance, and requires isolation for successful breeding. Although some information has been gathered on species at risk, there is no routine monitoring program in place to check for nesting pairs of this sensitive bird species.

A winter bat shelter (hibernaculum) is believed to exist in the Pijitawabik Palisades area but the location has not been identified. The scarcity of hibernacula and the large numbers of bats likely to use them make these sites highly vulnerable to disturbance. Disturbance results in the arousal of the colony which results in the considerable expenditure of energy (Thomas 1995). This is believed to be a major bat mortality factor (Anon 1996).

The inventory on the wildlife within the Nipigon Palisades Conservation Reserve is incomplete. Very little is known about insects, amphibians, reptile, birds or small mammals in the conservation reserve. An inventory of species, and population size estimates would be useful in assessing the health of the ecosystem and determining management decisions.

Wildlife resources play a highly significant role in the lifestyle and economy of the area. Large and small game provides subsistence and sport hunting opportunities to locals and tourists. Subsistence hunting by Natives has occurred in the area for thousands of years.

There is no information available estimating the current level of harvest for species such as moose, deer, bear, hare, grouse or waterfowl for subsistence purposes. This lack of information makes it difficult to manage the non-Native hunt and ensure sustainability of these wildlife populations.

4.5.2 DIRECTION

Protection of wildlife and their associated habitat will take precedence over human use and development activities, especially in the case of species at risk. The collection of information needed to make management decisions will be given priority such as establishing wildlife trend-through-time monitoring stations. All known sensitive habitat such as nesting sites and winter shelters, will be protected through restricted use zoning as outlined in Section 4.2.2.

4.5.3 MANAGEMENT STRATEGIES

- Explore the possible expansion of the peregrine falcon within the Nipigon Palisades Conservation Reserve
- Conduct routine monitoring to check for nesting pairs
- Keep trail development and climbing activity away from any known nesting sites
- Encourage the understanding and appreciation of these species by the public through the use of educational brochures and interpretive signage
- Improve information relating to small mammals, forest birds, amphibians and reptile populations, as well as for species at risk
- Establish long term trend-through-time monitoring stations at various locations in the conservation reserve including rare habitat following standard protocol
- Establish scheduled regular monitoring for species at risk populations to determine long term population trends and habitat use
- Improve the monitoring and recording of sensitive breeding bird populations along

the cliffs of the Nipigon Palisades through partnerships with stakeholder groups (such as the Thunder Bay Field Naturalists, Land of the Nipigon Waterway Association, Voyageur Hiking Club, Thunder Bay Hiking Club, and the academic community).

- Investigate the location of the bat hibernaculum in partnership with local communities, landowners and stakeholder groups (such as the Thunder Bay Field Naturalists, Land of the Nipigon Waterway Association, Voyageur Hiking Club, Thunder Bay Hiking Club, and the academic community)
- Develop and distribute educational material providing facts about the significance of bats and their role in the ecosystem
- Explore measures to reduce disturbances to the hibernaculum if found

4.6 VEGETATION

4.6.1 DISCUSSION

The Nipigon Palisades Conservation Reserve is located in the boreal forest and includes a variety of community types such as forest, wetlands, rock barrens, and cliffs. A number of significant arctic-alpine disjunct species, provincially significant and regionally significant species are found within the conservation reserve. In addition, it is believed that there are several other significant vascular plant species yet to be confirmed around the talus slopes of the Nipigon Palisades.

These plant species are extremely important to wildlife as food sources and provide habitat and food for insects, prevent talus slope erosion, control nutrient and water flow, play a role in energy flux, affect insulation, depth of thaw, and moisture content of the soil. These species also provide nature appreciation opportunities to various hiking and naturalist groups that visit the area. Unfortunately, these sensitive species grow in areas used by recreational groups hiking and climbing around the cliffs. The risk of destroying sensitive flora communities may

increase as the profile of the extraordinary climbing opportunities in the Nipigon Palisades heightens.

4.6.2 DIRECTION

Vegetation in the Nipigon Palisades Conservation Reserve will be managed to ensure unique habitats, vegetation communities and rare or significant flora will be protected. Efforts will be made to improve the level of knowledge of the vegetation communities and flora in the conservation reserve.

4.6.3 MANAGEMENT STRATEGIES

- Improve information and knowledge of the flora and vegetation communities in the Nipigon Palisades Conservation Reserve
 - Work with the Natural Heritage Information Centre, Thunder Bay Field Naturalists, The Alpine Club of Canada, the academic community and other interested partners to consolidate, collect and document information on vegetation communities, flora and unique habitats present in the conservation reserve
- Develop and implement management strategies to protect and/or rehabilitate rare and unique species/communities, for example, zoning sensitive vegetation communities as restricted from Crown land use
- Develop quality educational material regarding sensitive vegetation species and their habitats
 - In partnership with the local municipalities, tourist outfitters and recreational groups, brochures highlighting sensitive species in the conservation reserve will be developed, in concert with other conservation reserves in the Lake Nipigon Basin Signature Site. This will include identification keys and pictures to aid classification in the field
 - With partners, contract the development of educational display panels/signage to be located at the proposed access points on Highway 11
- Monitor the vegetation around existing rock/ice climbing routes
 - Climbing sites will be investigated annually to ensure compliance with low-impact climbing guidelines
 - Institute closures around sensitive vegetation (such as arctic-alpine disjunct species) if required
- Allow development of new climbing routes only if sensitive vegetation assessment surveys indicate no negative impact
 - Work with the Natural Heritage Information Centre, Thunder Bay Field Naturalists, The Alpine Club of Canada, the academic community and other interested partners to consolidate, collect and document information on vegetation communities, flora and unique habitats present within the Pijitawabik Palisades
 - Develop and implement management strategies to protect and/or rehabilitate rare and unique species/communities and sensitive wildlife habitat, for example, zoning sensitive vegetation communities as restricted from Crown land use
 - Actively encourage scientific investigation, regardless of the cliff location, if the researcher qualifications are valid and the nature of the study is well documented
- Investigate and implement vegetation management techniques using fire, through the preparation of a fire management plan, to ensure the continued availability of wildlife habitat and a healthy ecosystem

4.7 CULTURAL HERITAGE

Prehistoric cultures, the building of the railway, early tourism and the start of the Lake Nipigon commercial fishery are all part of the “*Palisades*” past.

4.7.1 DIRECTION

The intent with regard to cultural heritage is to improve the current level of knowledge, to increase public appreciation and understanding and to ensure the protection of cultural heritage values in the conservation reserve. This direction will be achieved through partnering and by managing Crown land use activities. In all cultural heritage management initiatives, MNR will endeavor to work with local Aboriginal communities to encourage their involvement in collecting and recording cultural information and in educating the public.

4.7.2 MANAGEMENT STRATEGIES

- Improve the knowledge base of prehistoric and historic sites and associated activities in the conservation reserve
- Encourage the collection, consolidation and interpretation of cultural heritage information through partnerships with local historical societies, museums, Aboriginal communities, universities, municipalities and other ministries
- Keep an up-to-date record of known cultural values in the MNR office to assist in managing Crown land use to prevent negative impacts to cultural resources
- Ensure that the exact location of archaeological/cultural sites is not divulged to the public in order to limit the impacts of site disturbance
- Incorporate cultural heritage information in displays and public handouts to improve public awareness and understanding
- Proposed displays at highway access points will incorporate cultural heritage information pertaining to the Nipigon Palisades Conservation Reserve and surrounding area

4.8 WATER RESOURCES

4.8.1 DISCUSSION

A number of important tributaries and lakes are found within the Nipigon Palisades Conservation Reserve. These aquatic resources are important fish community habitat and contribute to sport angling opportunities in the area. Both the Gorge Creek and Shadow Creek are popular brook trout streams. These tributaries along with the cold headwater lakes provide the brook trout with cool, clear, well-oxygenated water. The lakes within the Nipigon Palisades Conservation Reserve have a variety of native and non-native fish species present.

Very little information has been collected on the physical and chemical properties of the lakes and tributaries in the Nipigon Palisades Conservation Reserve. Only six of the lakes within the Nipigon Palisades Conservation Reserve have been surveyed. These surveys are dated and missing important parameters such as pH, transparency (measured with a Secchi Disk) and total dissolved solids (TDS). None of the physical and chemical properties of the tributaries within the conservation reserve have been surveyed.

The introduction of exotic species is a concern to the MNR and members of the public. These are organisms that have been introduced into habitats where they are not native. The introduction of invading species is an extensive problem and is a serious threat to biodiversity. Invading species can cause widespread and unpredictable changes to ecosystems. These changes can result in damage to ecosystems and to native fish and wildlife populations. Preventative measures must be taken to ensure that these species are not introduced into the Nipigon Palisades Conservation Reserve.

4.8.2 DIRECTION

Protection of water quality will take precedence over human use and development activities. The collection of information needed to make management decisions will be given priority such as collecting water

chemistry data from the tributaries and lakes within the conservation reserve. This is important to establish baseline data to monitor pollution and for successful management of stocking programs in these lakes. Potential introduction of exotic species will be addressed through public education.

4.8.3 MANAGEMENT STRATEGIES

- Improve information relating to water quality for the tributaries and lakes within the Nipigon Palisades Conservation Reserve
- Collect limnological data for Keemle Lake, Marilyn Lake, McAvay Lake and all other lakes being explored for stocking potential
- Collect Limnological data for Gorge Creek, Palisade Creek, and Shadow Creek
- Establish regular monitoring for these tributaries and lakes to determine long-term trends
- Improve collection and interagency transfer of information
- Establish conditions on all scientific collector's permits that require all data to be transferred to the Nipigon District MNR within a specified time
- Establish standard protocols with other agencies and universities to ensure any water related data is transferred
- Take action to prevent the introduction of exotics into the lakes and tributaries within the conservation reserve
- Post signage at key access points educating the public about the importance of keeping exotics out of the lakes and tributaries with precautionary actions to be taken (e.g. no dumping of bait buckets and washing equipment)
- Educate local tourist operators and campground operators and enlist their support in the education of the public

5.0 PLAN IMPLEMENTATION AND REVIEW

MNR has the lead role in implementation of this plan and is committed to keeping it current and relevant through appropriate monitoring and amendments. Plan implementation will ensure that the *Environmental Assessment Act*, *Environmental Bill of Rights* and other pertinent legislation are adhered to at all times.

Completion of the projects and activities described in this plan and any ancillary plans is dependent on the availability and allocation of funding in accordance with priorities established by the Ministry of Natural Resources and the Government of Ontario. The MNR will pursue opportunities for partnerships with other agencies and interest groups in the funding and implementation of activities and programs identified.

Operational and work plans developed to implement the direction of this resource management plan must be consistent with the objectives and strategies identified herein. Some flexibility in applying plan direction in site-specific operational situations to address biophysical circumstances and include technical expertise is recognized.

5.1 INVENTORY, MONITORING, ASSESSMENT AND REVIEW

Inventory, monitoring, assessment and review are essential to the effective implementation of this plan and are an integral part of the management strategies identified. This includes, for example, inventory and monitoring of fish and wildlife populations, vegetation communities, habitat availability and recreational use and impact. Other sources of important information include creel surveys, data gathered by the Lake Nipigon Fisheries Assessment Unit, regular consultation with the Nipigon Watershed Advisory Committee and statistics collected by the Ministry of Tourism. All of this information is necessary to ensure that plan

objectives are being met and policies remain current and relevant.

5.2 PLAN REVIEW AND AMENDMENT

There is no intent to carry out a comprehensive review of the Nipigon Palisades Conservation Reserve Resource Management Plan at any prescribed interval. Using adaptive management, the resource management policies in this document will be kept current through periodic amendments resulting from changes in government policy, new resource information or in response to public need.

Proposed amendments must not alter the overall intent of the Nipigon Palisades Conservation Reserve Resource Management Plan. An amendment to the plan may be requested at any time and the District Manager will decide whether or not to consider it. Requests for amendments must have a basis in fact, demonstrably relate to the scope of the plan, and respond to changing resource conditions, new information, changing government policies or public need. The MNR also has the authority to initiate amendments in response to new information or changed conditions.

Amendments will be classified as either minor or major. Minor amendments are those changes that do not have a negative effect on the public, adjacent landowners or the environment and are generally administrative in nature. Minor amendments will be approved by the District Manager and will not normally be subject to public consultation.

Major amendments have a significant social, economic and/or environmental impact. Major amendments will be reviewed by the MNR District Manager and submitted to the Regional Director for approval. Public consultation will occur for all major amendments and notice of all major amendments will be posted on the EBR electronic registry.

6.0 BACKGROUND INFORMATION

6.1 INFRASTRUCTURE AND LAND TENURE

Within the boundaries of the Nipigon Palisades Conservation Reserve, Highway 11 follows the eastern shoreline of Wanogu Lake, McKirdy Lake, Shamrock Lake, Keemle Lake, and Pijitawabik Bay before heading northeast to the community of Beardmore.

The Canadian National Railway (CNR) Kinghorn Subdivision line travels through the Nipigon Palisades Conservation Reserve, running along the west shore of Wanogu Lake and McKirdy Lake, crossing the north end of Shamrock Lake and continuing north on the east side of Keemle Lake. The line crosses Keemle Creek, and runs north along the west side of Pijitawabik Bay until Reflection Lake, where it crosses to the east side of the bay and runs north alongside Highway 11.

This subdivision line is owned by CNR. It is currently used for one to two trains per day. CNR is currently re-evaluating traffic on this line. There is a possibility that the Kinghorn will be used more extensively as CNR and CP rationalizes their trackage. The Kinghorn is not slated for abandonment and will carry at least one train per day under any scenario.

The gas pipeline, operated by the TransCanada Pipeline, traverses the Nipigon Palisades Conservation Reserve. This pipeline was completed in 1958. The original right of way is 20 metres wide and follows Highway 11. The initial high-pressure pipe is 762 mm in diameter. Trans-Canada Pipeline also operates a natural gas co-generation station off Highway 11 at the north east corner of Keemle Lake.

There are a number of patented parcels in Ledger and Purdom Townships that are close to Gretel Lake within the Nipigon Palisades Conservation Reserve. Patent parcels exist along Highway 11, north and south of Keemle Lake, at Reflection Lake, and just south of Orient Bay where commercial tourism establishments have been developed. Several

of these establishments operate private boat launch access to Lake Nipigon.

A total of 16 aggregate pits are found within the conservation reserve. Five aggregate pits are in Ledger Township adjacent to Highway 11, nine pits are located at Keemle Lake and two pits are located at Hanson Lake. The Ministry of Transportation (MTO) operates several of these.

There are a number of Land Use Permits (LUPs) and Letters of Authority (LOAs) that fall within the boundaries of the conservation reserve. Private individuals, tourism establishments, other businesses and local clubs use these.

6.2 CULTURAL HISTORY

Since the last ice age, Aboriginal people have inhabited the area around Lake Nipigon. These nomadic hunters and gatherers relied on the fish, wild plants, small game and big game (likely caribou) in the area.

The first archeological find on Lake Nipigon dates back to the Shield Archaic period approximately 3,000 to 4,000 years ago. A grave cache was found two miles south of the hamlet of Orient Bay. William McCollum, owner of the site, has developed a tourist resort at this location. It was McCollum's six-year old son who, while playing in the sand by the water discovered a copper specimen.

Further digging revealed copper discs, bracelets, beads, socketed narrow points, broad beveled points, socketed beveled knives, unworked copper fragments, awls, cylinders, projectile points, and scrapers (Griffen and Quimby 1961). Black (1980) reported that within the Nipigon District, the collection of copper artifacts found at the McCollum site at Orient Bay is one of the most interesting archeological finds in the Lake Nipigon area.

European entrepreneurs arrived at the mouth of the Nipigon River in the early 1650's, drawn by the seemingly limitless beaver, otter, fox, and muskrat associated with the Nipigon waterways. The historical fur trade was built

on the well-established trade routes of North American Natives and their intimate knowledge of the landscape.

The Hudson Bay Company was created with the support of King Charles II of England. In order to reach the Albany River, Native traders traveled in freighter canoes constructed from white cedar, birchbark, rootlets and spruce gum. The area around Lake Nipigon became the most profitable fur-bearing district along the north shore of Lake Superior (Kelso and Demers 1993).

There is one historical Hudson Bay Company's trading post in the Nipigon Palisades Conservation Reserve. This historical fur trade post, called the Bay View Post is believed to be located at the south end of Pijitawabik Bay at Orient Bay. The estimated date of existence was around 1890 (Dawson 1969).

Forestry began in the Nipigon Basin in the early 1900s. Early logging was initiated to obtain lumber for the building of railways. This early logging was labor intensive, requiring log drives along most of the major tributaries flowing into Lake Nipigon. Much of the early logging took place close to Lake Nipigon, including the shoreline of Pijitawabik Bay. Forest access by road was initiated in the late 1920s. Construction of Highway 11 from Nipigon past Orient Bay towards Longlac was begun in 1939 and paved in 1953.

In 1912, construction was underway on a southern Canadian National Railway (CNR) between Port Arthur and Longlac. This line passed under the Canadian Pacific Nipigon Bridge and turned north, staying on the west bank of the Nipigon River for ten kilometers (six miles) and then crossing the river on a multispan bridge. After running a further six and a half kilometers (four miles) on the river's east bank, the line turned northeast along the shore of Orient Bay, a long, narrow inlet on the southeast end of the main lake. Leaving the lake, the line headed for Longlac, 316 kilometers (198 miles) to the east and only fifty-one kilometers (32 miles) south of the National Transcontinental main line at Nakina. Transcontinental service for

passengers began to move on this line in 1915 (Kelso and Demers 1993).

When railway access was established, a significant commercial fishery on Lake Nipigon followed. The fishery was a result of “an emergency food supply measure” for the war (Kelso & Demers 1993). Fishing outfits descended in large numbers to Macdiarmid from all directions in the spring of 1917. Most of these fishing outfits were unloaded off CNR flat cars at Orient Bay and the smaller gas boats were unloaded further north on the Pijitawabik Bay at Macdiarmid (King 1971). Icehouses were established at Macdiarmid where Federal Department employees acted as fish buying agents until 1958. Fish were unloaded at Macdiarmid and transported by horse-drawn wooden sled over cleared ground to the Orient Bay CNR rail stop for shipment.

The earliest sport fishing on Lake Nipigon occurred in the early 1920s, as spill over from the crowded Nipigon River. The fishing was focused on famous brook trout in addition to walleye and northern pike. Tourist outfitters using converted fish tugs, based mainly in Orient Bay were offering extended guided boat excursions around the lake.

6.3 NATURAL ENVIRONMENT AND RESOURCES

6.3.1 EARTH SCIENCES

The Nipigon Palisades Conservation Reserve lies within the Canadian Shield, which consists predominantly of Precambrian igneous and metamorphic rocks. This area was formed about 1.2 billion years ago.

The Southern Province bedrock is dominated by Logan and Nipigon basaltic diabase sills, which make up the famous “*Nipigon Plate*”, a sub-province of the Southern Province of the Canadian Shield. The Nipigon Plate rocks are approximately 200 meters thick and cover the older Archean rocks underneath.

Perhaps the most well known geological feature is the towering cliffs near Orient Bay,

known by Quaternary geologists as the Palisades of the Pijitawabik. This area was formed by a geological process called columnar jointing, a cooling phenomenon that developed during the solidification of the magma. Over time, the softer sedimentary stratum has been eroded away, in part by glacial events, leaving spectacular displays of cliffs and outcrops. These cliffs tower over 140 metres above Lake Nipigon. The canyon was likely formed by the sinking of one downthrust fault block. The talus fields of diabase rock lining both sides of the canyon are not covered by glacial debris. Their recent formation suggests that the canyon is larger now than it was during the last glacial period.

The surficial geology of the Nipigon Palisades Conservation Reserve is dominated by complex events that occurred during the late Wisconsin glacial period. The passing of the last glacier during this period, caused catastrophic events in the Orient Bay area. The huge amount of water from the melting glacier was unable to drain north due to the formation of the Kaiashk interlobate moraine, which trends northeast to the southwest of Lake Nipigon. Consequently a massive ancestral lake called Glacial Lake Agassiz was formed. This massive body of water covered eastern Saskatchewan, a large portion of Manitoba and western Ontario.

Subsequently, the ice retreated to the north and east then re-advanced during the Marquette stadial approximately 10,000 years ago. This likely formed the Nipigon Moraine which is a North-South trending moraine, roughly paralleling but inland of the present western shore of Lake Nipigon. As the ice retreated from this position, the Onaman interlobate moraine formed along a weakness within the glacier, to the northeast of Lake Nipigon. At the same time (approximately 9,500 years ago) Glacial Lake Kelvin formed along the ice margin, eventually occupying all of the current Lake Nipigon Basin.

The water level continued to increase until it reached the levels of outlets to the south. Glacial Lake Kelvin drained into the ancestral Lake Superior, through the Black Sturgeon River and through the Pijitawabik Spillway,

9,500 years ago. Thus, the Pijitawabik Palisades are an ancient glacial spillway.

There is a great deal of evidence in the Orient Bay area of these glacial events. Moving water transports undissolved materials. The higher the velocity of the water, the greater the mass that can be transported. As the water continues to slow down, the materials being carried along fall to the bottom in a predictable manner.

These results are visible because of the phenomena known to geologists as “*glacial rebound*”. This is the process whereby land, compressed by the weight of huge ice sheets, rebounds when the glacier melts. Consequently, underwater structures become visible.

Most of the Orient Bay valley is floored with spillway deposits, unconsolidated coarse gravel and sand trapped in the gravel. This heavy

material could only have been carried by fast-moving water. The shore of ancient Lake Superior is located at the south end of the spillway where there is a considerable change in the terrain. As the spillway water flowed into ancient Lake Superior, its velocity slowed enormously, halting the movement of many of the suspended materials. The coarser sand was deposited first (furthest north), then finer and finer sands were deposited. This is referred to as a Glaciolacustrine delta, and is located south of Wanogu Lake.

Many of these deposits are pocketed by kettles, formed when big blocks of ice break off glaciers and get covered up by the sand and gravel of outwash plains. When these monstrous pieces of glacial ice melt, the earth above them collapses into the void they create. Some of these features are located in the Wanogu and Shamrock Lake area and measure up to 40 metres deep.

TABLE 11. Artic-alpine disjunct native, vascular plant species document for the Nipigon Palisades Conservation Reserve (C2238) listed in taxonomical order. Nomenclature follows Newmaster et al. (1998). Source for arctic status as follows: Ontario Plant List (Newmaster et al. 1998); Checklist of Vascular Plants of Thunder Bay District (Thunder Bay Field Naturalists 1998).

SCIENTIFIC NAME	HABITAT	LOCATION	COMMON NAME	SOURCE	
				NEWMASER ET AL (1998)	THUNDER BAY FIELD NATURALISTS
LYCOPODIACEAE					
Huperzia selago (L.) Bernh Ex schrank & Martius	Moist rocks and mixed boreal forest; cliff ledges	Reflection Lake; Orient Bay	Northern fir-moss	✓	
DRYOPTERIDACEAE					
Dryopteris fragrans (L.) Schott	Moist crevices in talus boulders	Shadow Creek	Fragrant wood fern		✓
Woodsia alpina (Bolton) S.F. Gray	Shaded, moist cliff, ledges/crevices	Orient Bay	Alpine cliff fern	✓	
SALICACEAE					
Salix planifolia Pursh	Gravel ditches and sand beach	Orient/Pijitawabik Bays	Flat-leaved willow	✓	
CYPERACEAE					
Scirpus cespitosus L. boreal	Moist shoreline rock crevices	Reflection Lake	Cespitose bulrush	✓	✓
POACEAE					
Poa glauca M. Vahl spp.	Rock crevices and rocky shores	Reflection Lake; Hwy 11	Glaucous poa		✓

6.3.2 VEGETATIVE COMMUNITIES

Ecologically, this conservation reserve is one of the most diverse areas in the Lake Nipigon Basin Signature Site. The major forest type represented in the Nipigon Palisades Conservation Reserve is a mixed wood forest type, consisting of white birch (*Betula papyrifera*), trembling aspen (*Populus tremuloides*) and white spruce (*Picea glauca*). These forests occur on flat terrain to moderate slopes with mesic moisture conditions and tills that are shallow to deep (North-South Environmental Inc. 2001).

At Kefkatigwan Mountain, located a few kilometers north-east of Keemle Lake, white birch forests are characteristic of moveable

boulder talus, and they grade downslope into mixedwoods composed of white spruce, balsam fir (*Abies balsamifera*) and white birch. On more stable slopes trembling aspen and aspen mixedwoods are typical. On less stable slopes, mixedwoods are composed of white cedar (*Thuja occidentalis*), white spruce, balsam fir and white birch, and these become extensive on the west-facing slopes in the Keemle Lake area (North-South Environmental Inc. 2001).

Black spruce (*Picea mariana*) lowland stands dominate in sites where the water drainage is impeded and along riparian zones with accumulations of peat. The areas around Slipper Lake and Froggy Lake are examples of deep sandy soils with the natural cover of jack

TABLE 12. Provincially significant native, vascular plant species document for the Nipigon Palisades Conservation Reserve (C2238) listed in taxonomical order. Nomenclature follows Newmaster et al. (1998). Provincial status is based on Natural Heritage Information Centre (2000).

SCIENTIFIC NAME	HABITAT	LOCATION	COMMON NAME	G RANK	S RANK
LYCOPODIACEAE					
<i>Diphasiastrum x zeilleri</i> (Rouy) Holub	Shaded, moist boulders	Orient Bay	Savin-leaf club-moss	G4	S3
<i>Hyperzia selago</i> (L.) Bernh. Ex Schrank & Martius	Moist rocks and mixed boreal forest; cliff ledges	Reflection Lake; Orient Bay	Northern fir-moss	G5	S3S4
DRYOPTERIDACEAE					
<i>Gymnocarpium robertianum</i> (Hoffm.) Newman	Moist rock crevices	Reflection Lake	Limestone oak fern	G5	S2
<i>Woodsia alpina</i> (Bolton) S.F. Gray	Shaded, moist cliff ledges/crevices	Orient Bay	Alpine cliff fern	G5	S2
JUNCACEAE					
<i>Juncus vaseyi</i> Engelm.	Ephemeral boggy pool	Orient Bay	Vasey's rush	G3G5	S3

* G-Rank refers to the global ranking of a particular species:

- G1 - Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining hectares) or because of some factor(s) making it particularly vulnerable to extinction.
- G2 - Imperiled globally because of extreme rarity (6 to 20 occurrences or few remaining hectares) or because of some factor(s) making it very vulnerable to extinction throughout its range.
- G3 - Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g. a single province or physiographic region) or because of other factor(s) making it vulnerable to extinction throughout its range; in terms of occurrences, in the range of 21 to 100.

**S-Rank refers to the provincial ranking of a particular species:

- S1 - Extremely rare in Ontario; usually 5 or fewer occurrences in the province, or very few remaining hectares.
- S2 - Very rare in Ontario; usually between 5 and 20 occurrences in the province, or few remaining hectares.
- S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with some extensive examples remaining.
- Communities that are assigned lower ranks, such as S4 and S5, are considered to be common and widespread in Ontario. A rank of S4 denotes a community that is apparently secure in the province, with many occurrences, while S5 indicates it is demonstrably secure in the province.

TABLE 13. Regionally significant native, vascular plant species documented for the Nipigon Palisades Conservation Reserve (C2238) listed in taxonomical order. Nomenclature follows Newmaster et al. (1998). Regional Status is based on Thunder Bay Field Naturalists (1998).

SCIENTIFIC NAME	HABITAT	LOCATION	COMMON NAME
POLYGONACEAE			
<i>Polygonum pensylvanicum</i> L.	Moist sand beach	Pijitawabik/Orient Bay	Pennsylvania smartweed
VIOLACEAE			
<i>Viola lanceolata</i> L.	Boggy depression	Orient Bay	Lance-leaved violet
BRASSICACEAE			
<i>Arabis holboellii</i> Hornem. Var. <i>secunda</i> (Howell) H Jepson	Sandy roadside	Reflection Lk.	Holbell's rock-cress
ONAGRACEAE			
<i>Epilobium leptophyllum</i> Raf.	Shaded peat bog	Shadow Creek	Narrow-leaved willow-herb
POTAMOGETONACEAE			
<i>Potamogeton friesii</i> Rupr.	Shallow water	Pijitawabik Bay, Orient Bay	Fries' pondweed
CYPERACEAE			
<i>Carex gracillima</i> Schwein. <i>Scirpus torreyi</i> Olney	Moist woods; stream banks Shallow Water	Pijitawabik Bay Orient Bay	Graceful sedge Torrey's bulrush
POACEAE			
<i>Brachyelytrum erectum</i> (Schreb.) P. Beauv.	Shaded, moist stream banks	Postagoni R.; Orient Bay	Bearded short-husk
SPARGANIACEAE			
<i>Sparganium americanum</i> Nutt.	Shallow Water	Shawdow Ck. At Orient Bay	Nuttall's bur-reed

pine (*Pinus banksiana*) (North-South Environmental Inc. 2001).

Dry rocky sites are covered by open Jack pine forests, and these are extensive both on the flat ridges and on the rugged upper slopes below the vertical cliffs of the Palisades. In similar situations, white pine mixedwoods and white pine-red pine coniferous stands may also be found.

An example of a red pine mixedwood stand is found between the highway and Reflection Lake. South of the lake are excellent examples of red pine-jack pine stands and red pine-white pine communities on exposed ridges (North-South Environmental Inc. 2001).

The unstable boulder talus at the foot of slopes can vary from hard rock covered by crustose lichens and mosses with sparse herbs growing in crevices and soil pockets, to more robust vegetation consisting of deciduous white birch

stands. In other cases, stable talus slopes are characterized by white cedar, mixedwood communities. Such is the case with fringe cedar communities along some of the lakeshores in this conservation reserve (North-South Environmental Inc. 2001).

Fire plays an important role in local forest ecology, having swept through the area over 150 years ago, leading to the evolution of the current forest types. The majority of the Nipigon Palisades Conservation Reserve appears to be undisturbed by fire in recent years, although a large fire renewed the vegetation in the southern portion of the area in 1998. These sites are currently undergoing early stages of regeneration.

Natural disturbance by spruce budworm has occurred throughout the Nipigon Basin and within the Palisades it is evident within the aspen-fir mixedwoods (North South Environmental Inc. 2001).

Less than 1% of the total area of the Nipigon Palisades Conservation Reserve is comprised of open wetlands (marshes, fens, etc.). This is the case along the shores of McKirdy Lake (also known as Bulrush Lake) where the extensive marsh is dominated by broad-leaved cattail (*Typha latifolia*) and common reed grass (*Phragmites australis*) (North-South Environmental Inc. 2001).

6.3.3 FLORA

Thirty-two vascular plant species with arctic alpine affinities have been documented for the Lake Nipigon Basin as defined by Newmaster et al. (1998) and Thunder Bay Field Naturalists (1998), several of which are found in the Nipigon Palisades Conservation Reserve. These plants are often associated with specialized habitats in which they survived from the post-glaciation times on northerly exposed rock faces, cool crevices, cliff ledges and talus slopes, where there is little or no competition from forest vegetation and the microclimate supports a more northerly flora.

The Pijitawabik Palisades area contains favorable microclimates resulting in a high diversity of arctic-alpine disjunct and rare plant species on the talus slopes and cliffs as listed in Table 11 (North-South Environmental Inc., 2001). Examples of arctic-alpine species known to occur in the Nipigon Palisades Conservation Reserve include; the northern fir-moss (*Huperzia selago*) found in moist rock crevices and cliff ledges in the Reflection Lake and Orient Bay area; the flat-leaved willow (*Salix planifolia* Pursh) which inhabits gravel ditches and sand beaches; and the alpine cliff fern (*Woodsia alpina*) found on shaded moist cliff ledges and crevices at Orient Bay.

Newmaster et al. (1998) and Thunder Bay Field Naturalists (1998) list eight arctic-alpine disjunct species known to occur within the Lake Nipigon Basin, but without a specific location. Some of these species may occur within the Nipigon Palisades Conservation Reserve. Plausible species may include the alpine saxifrage (*Saxifraga paniculata* Miller) and the northern painted-cup (*Castilleja*

septentrionalis Lindl.) which have been documented by the Thunder Bay Field Naturalists (1998) as occurring within the Lake Nipigon Basin, and are known to inhabit moist shorelines and rock ledges/crevices.

There are 5 provincially significant plant species and 9 regionally significant vascular plants within the Nipigon Palisades Conservation Reserve, as listed in Tables 12 and 13 (North-South Environmental Inc. 2001).

6.3.4 BIRDS

The Pijitawabik Bay location is significant to a number of bird species. Several of these species of restricted distribution are at the northern edge of their range including: ruby-throated hummingbird (*Archilochus colubris*), house wren (*Troglodytes aedon*), veery (*Catharus fuscescens*), and the brown-headed cowbird (*Molothrus aeneus*). Several species of restricted distribution are characteristic of early or mid successional habitat: killdeer (*Charadrius vociferus*), least flycatcher (*Empidonax minimus*), barn swallow (*Hirundo rustica*), house wren (*Troglodytes aedon*), mourning warbler (*Oporornis philadelphia*), savannah sparrow (*Passerculus sandwichensis*) and the American goldfinch (*Carduelis tristis*). Lincoln's sparrow (*Melospiza lincolni*), a species of restricted distribution requiring large peatland habitat is also found in the Pijitawabik Bay area (Thunder Bay Field Naturalists 1991-1993 c.i. North-South Environmental 2000).

A number of "Species at Risk" including the bald eagle (*Haliaeetus leucocephalus*) and the peregrine falcon (*Falco peregrinus*) use the Nipigon Palisades Conservation Reserve.

Bald eagle nests in the Nipigon area are almost exclusively located below the treetops of large poplar trees that protrude above the forest canopy (Swainson and McNaughton 2001). While bald eagles have been known to nest just north of Orient Bay on the west side of Pijitawabik Bay (North South Environmental Inc. 2001), this nesting site is no longer there (Swainson per. comm. 2002). This species is listed "Endangered" under the

Endangered Species Act. Their population suffered a decline during the late sixties and early seventies due to the contamination with toxic chemicals (DDT and PCB) of the fish portion of their diet. Since the early eighties, their numbers have been dramatically increasing around Lake Nipigon.

Peregrine falcons are listed as “*Endangered*” under the *Endangered Species Act*. Project Peregrine, initiated in the late 1970s, has reintroduced peregrine falcons to the wild in Ontario, including a reintroduction to the Nipigon River area in 1991. There are now over 50 pairs of peregrines in Ontario, many along the north shore of Lake Superior (Ratcliff and Armstrong 2000). Peregrine falcons nest on high cliffs near vast open areas such as lakes or grasslands and several have been sighted within the Lake Nipigon Basin near suitable nesting habitat.

The nesting of peregrine falcons in the Pijitawabik Palisades has yet to be confirmed. However, an abundance of suitable nesting sites have been mapped by Ratcliff and Armstrong (2000), including the stretch of the Pijitawabik Palisades adjacent to Wanogu Lake north to Macdiarmid. Ratcliff and Armstrong (2000) noted that this area has 10 km of excellent peregrine nesting habitat cliffs. It is likely that as peregrine falcon numbers increase, the utilization of these sites will occur (Swainson and McNaughton 2001).

6.3.5 MAMMALS

The Nipigon Palisades Conservation Reserve is significant to a number of large and small mammal species. The central portion of the conservation reserve includes the Cash Creek Gorge, a prominent geological canyon/ravine. This deep protected valley shelters the watercourse that provides warmer-than-normal habitat. This area is used as a major moose travel corridor (North-South Environmental Inc. 2001). Several moose aquatic feeding areas have been documented that fall within the conservation reserve, particularly in the southeast corner around the Gretel Lake and Wanogu Lake area.

There are six species of bats observed in the Lake Nipigon Basin Signature Site including the little brown bat (*Myotis lucifugus*), the northern long-eared bat (*Myotis septentrionalis*), the little silver-haired bat (*Lasionycteris noctivagans*), big brown bat (*Eptesicus fuscus*), red bat (*Lasiurus borealis*) and hoary bat (*Lasiurus cinereus*). Canadian bats hibernate when weather conditions become harsh and the food supply of insects disappears. The little and big brown bat are known to migrate from a few kilometers to several hundred kilometers.

6.3.6 REPTILES AND AMPHIBIANS

The Nipigon Palisades Conservation Reserve harbours reptiles and amphibians with requirement for warmer-than-normal habitats. The western painted turtle (*Chrysemys picta belli*), a species that requires a warm microclimate, was noted by Dymond et al. (1928) at the south end of Orient Bay and in recent years in this area (S. Carroll pers. comm. 2001). This species is at the northern edge of their range (North-South Environmental Inc. 2001). The Eastern Newt (*Notophthalmus viridescens*) was reported in 1928 in Orient Bay by Dymond (1928). It was reported again in 2001 by S. Carroll (pers. comm. 2001).

The blue-spotted (*Ambystoma laterale*) and Jefferson complex (*Ambystoma jeffersonianum*) salamanders have been reported in the conservation reserve. The Jefferson and blue-spotted salamanders are difficult to separate and much hybridization has occurred (*Jefferson complex*). Dymond et al. (1928) collected "Jefferson" salamanders (actually undifferentiated hybrids of Jefferson and blue-spotted salamanders) from the southern extremity of Orient Bay. While these records date far back into the past, they provide a basis for further investigations.

6.3.7 FISH

Very little is known about the tributaries and lakes in the Nipigon Palisades Conservation Reserve. An electro-shock fishing survey was conducted by Beak International Incorporated (1998). The purpose of their survey was to collect fish catch data for the watercourses

traversed by the TransCanada PipeLines Limited mainline valve. Seven of the sampled tributaries were within the northern section of the conservation reserve, including the Kefatikgwan Creek, Gorge Creek, North Sinclair Creek, South Sinclair Creek, Obie Creek, Or Creek and Norma Creek.

As shown in Table 14, species present in these tributaries include brook trout (*Salvelinus fontinalis*), northern pike (*Esox lucius*), white sucker (*Catostomus commersoni*), slimy

sculpin (*Cottus bairdi*), northern redbelly dace (*Phoxinus eos*), pearl dace (*Margariscus margarita*), finescale dace (*Phoxinus neogaeus*), fathead minnow (*Pimephales promelas*), and brook stickleback (*Culaea inconstans*).

Many of the tributaries in the area including the Gorge Creek, Shadow Creek and Palisades Creek, are also used by smelt (*Osmerus mordax*) as spawning areas (Swainson pers comm. 2001). This species is indiscriminate in

TABLE 14. Fish species present in tributaries within the Nipigon Palisades Conservation Reserve assessed using an Electro-shock sampling technique (Beak International Inc 1998).

COMMON NAME	SCIENTIFIC NAME	Kefatikgwan Creek (1998)	Gorge Cr. (1998)	North Sinclair Cr. (1998)	South Sinclair Cr. (1998)	Obie Creek (1998)	Orr Creek (1998)	Norma Creek (1998)
Brook Trout	<i>Salvelinus fontinalis</i>		✓					
Northern Pike	<i>Esox lucius</i>	✓						
White Sucker	<i>Catostomus commersoni</i>		✓					
Slimy Sculpin	<i>Cottus bairdi</i>		✓					
Northern Redbelly Dace	<i>Phoxinus eos</i>			✓		✓	✓	
Pearl Dace	<i>Margariscus margarita</i>					✓		
Finscale Dace	<i>Phoxinus neogaeus</i>				✓	✓		
Fathead Minnow	<i>Pimephales promelas</i>			✓				
Brook Stickleback	<i>Culaea inconstans</i>					✓	✓	

TABLE 15. Fish species present in surveyed lakes within the Nipigon Palisades Conservation Reserve.

COMMON NAME	SCIENTIFIC NAME	Shamrock Lake (1975)	Reflection Lake (1960)	Wanogu Lake (194)	Marilyn Lake (1979)	McKirdy Lake (1954)	Kemlee Lake (1977)
Brook Trout	<i>Salvelinus fontinalis</i>	✓	✓				
Lake Whitefish	<i>Coregonus clupeaformis</i>	✓					✓
Northern Pike	<i>Esox lucius</i>	✓		✓		✓	✓
White Sucker	<i>Catostomus commersoni</i>	✓					✓
Perch	<i>Perca flavescens</i>		✓				
Cisco	<i>Coregonus artedii</i>						✓
Northern Redbelly Dace	<i>Phoxinus eos</i>				✓		
Spottail Shiner	<i>Notropis hudsonius</i>						✓
Finscale Dace	<i>Phoxinus neogaeus</i>				✓		
Fathead Minnow	<i>Pimephales promelas</i>				✓		
Iowa Darter	<i>Etheostoma exile</i>						✓

their choice of spawning streams, seeking all sizes of tributaries with gravel riffle areas from April to early May.

Brook trout are known to occur in several tributaries in the Nipigon Palisades Conservation Reserve. Gorge Creek and Shadow Creek appear to be popular brook trout streams. These tributaries along with the cold headwater lakes provide the brook trout with cool, clear, well-oxygenated water.

The lakes within the Nipigon Palisades Conservation Reserve have a variety of native and non-native fish species present. Sampled lakes, as listed in Table 15, demonstrate typical fish species. These include brook trout, Lake Whitefish (*Coregonus clupeaformis*), pike, white sucker, yellow perch (*Perca flavescens*), Cisco (*Coregonus artedii*), northern redbelly dace, Spottail shiner (*Notropis hudsonius*),

finescale dace, fathead minnow and Iowa Darter (*Etheostoma exile*).

An abundant northern pike (*Esox lucius*) population is found in the stretch of lakes between Wanogu Lake to Keemle Lake, with the exception of Marilyn Lake. This species also uses the mouths of the tributaries such as the Shadow Creek, for spawning habitat.

Black bullheads (*Ictalurus melas Rafinesque*) have been introduced into Marilyn Lake. This species is rare in Canada and is generally not found above Lake Superior. Likely the introduction was a result of a transfer by bait bucket (Swainson, pers.comm).

Smallmouth bass (*Micropterus dolomieu Lacépède*) were released in two separate locations in the 1920. Approximately 240 adults were released into Keemle Lake in 1920.

TABLE 16. Lakes within the Nipigon Palisades Conservation Reserve that have been stocked since 1985. The species, number (#), and age (in months) of the released fish are detailed by year.

YEAR	KEEMLE LAKE			MARILYN LAKE			MCAVAY LAKE		
	Species	#	Age (mo)	Species	#	Age (mo)	Species	#	Age (mo)
1986				Brook Trout	2,250	16			
1987				Brook Trout	720	16			
1988								100	34
1989				Brook Trout	1500	16		100	34
1990	Lake Trout	10,270	24					332	59
		139	84						
1991				Brook Trout	2,000	16	Brook Trout	100	70
								189	59
1992	Lake Trout	114,200	5					450	36
								50	60
1993				Brook Trout	5,000	14		58	70
								446	38
1994	Lake Trout	210	144	Splake	1500	18		634	40
								342	52
1995	Lake Trout	1,208	84					180	52
1996				Splake	4,500	18		1190	28
1997					4,000	18		3000	16
1998					3,000	18			
1999					3,000	18		500	84
2000								1000	17
2001				Splake	3,000	18	Brook Trout	500	12

They were also stocked in Orient Bay the same year. The young of the year were observed in 1923 (Dymond 1926).

As shown in Table 16, several lakes within the Nipigon Palisades Conservation Reserve have a long history of brook trout stocking. Both Marilyn Lake and McAvay Lake have records of brook trout stocking dating back as far as 1988 and 1986 respectively. Lake survey records at the Nipigon Ministry of Natural Resources indicate that in the spring of 1970, 17 unauthorized hatchery trout were planted in Marilyn Lake by a local individual.

Lake trout (*Salvelinus namaycush* Walbaum) stocking has also occurred within the Nipigon Palisades Conservation Reserve, dating as far back as 1924. The large size and depth of Keemle Lake were thought to be suitable for supporting a lake trout population. Keemle Lake was stocked at that time with 20,000 lake trout.

Additional stocking took place in 1926 (20,000), 1928 (20,000) and 1955 (3,000 yearlings).

Surveys done in 1971 concluded that the Keemle Lake trout stocking was never an exceptional lake trout producer, although recently, this lake has begun to be stocked again with lake trout.

In 1995 approximately 1,200 lake trout adults were planted. In light of the conclusion that Keemle Lake was not producing a successful lake trout population, the decision was made to attempt walleye stocking. In 1970, 200 adult walleye (*Stizostedion vitreum*) were released. These walleye were taken from Wabinoosh Bay on Lake Nipigon.

No additional stocking of this species occurred in Keemle Lake in the years following.

In addition, there are likely other lakes within the conservation reserve that have had surplus stock released. A survey compiled in 2001 identified a lake that borders on the conservation reserve that is suitable for stocking. This 7.13 ha lake borders the south edge of the conservation reserve, approximately 500 metres east of Highway 11

TABLE 17 Limnological characteristics for lakes surveyed between 1954 and 1977 within the Nipigon Palisades Conservation Reserve

PARAMETER	SHAMROCK LAKE (1975)	REFLECTION LAKE (1960)	WANOGU LAKE (1954)	MARILYN LAKE (1979)	MCKIRDY LAKE (1954)	KEEMLE LAKE (1977)
Local names	Laurie Lake				Bulrush Lake	
Location						
Latitude	49° 16'	49° 20'	49° 14'	49° 15'	49° 16'	49° 17'
Longitude	88° 08'	88° 07'	80° 11'	88° 09'	88° 08'	88° 07'
Surface Area (ha)	43.13	2.79	58.68	15.78	26.31	152.30
Maximum Depth (m)	23.57	11.89	18.29	24.38	21.95	35.66
Mean Depth (m)	11.22		8.69	4.2	7.62	13.11
Lake Perimeter (km)	3.05					9.66
Oxygen (mg/l)	6.0-7.0		3.0	7.4		6.8-8.8
PH	6.5-7.5		7.8	6.5-7.0	7.2-8.0	7.0-8.0
Alkalinity (mg/l)				13.4-20.5		41.0-47.9
Transparency measured with secchi disk (m)						2.8
Total dissolved solids (mg/l)				36.0-41.0		

(49 degrees 5 minutes latitude and 88 degrees 10 minutes longitude).

6.3.8 WATER

Very little information has been collected on the physical and chemical properties of the lakes and tributaries in the Nipigon Palisades Conservation Reserve. Generally, the direction of water flow is north from Shamrock Lake into Keemle Lake, Sinclair Lake, into Pijitawabik Bay. The waterflow from McKirdy Lake moves south to Wanogu Lake into Cash Creek.

Only six of the lakes within the Nipigon Palisades Conservation Reserve have been surveyed. None of the tributaries within the conservation reserve have been surveyed.

These lake surveys were conducted between 1954 and 1977. Parameters were sampled to varying extents. These parameters included depth, pH, alkalinity, transparency and the Total Dissolved Solids. Based on these limited lake surveys, as shown in Table 17, it is evident that these are generally oligotrophic lakes with high oxygen, neutral pH, and low alkalinity.

6.4 SOCIAL AND ECONOMIC ASPECT

6.4.1 FISHERIES RESOURCE USE

Sport fishing occurs year round in the Nipigon Palisades Conservation Reserve. Although it is difficult to assess angling pressure in this area, generally the lakes and tributaries of this area are underfished. One of the more popular brook trout fishing destinations includes the southern portion of Cash Creek.

There are four actively managed baitfish blocks assigned to fishermen that include part of the Nipigon Palisades Conservation Reserve. These include 493881, 492881, 493882, 492882. It is difficult to assess the harvest that takes place strictly within the conservation reserve as the block boundaries do not coincide with the boundaries of the conservation reserve.

6.4.2 FOREST AND MINERAL RESOURCE USE

Logging has occurred in the past in the conservation reserve. The proximity to

Thunder Bay and extensive river system made sections of the forest accessible to early horse logging operations and river drives. Early operations concentrated on white pine and spruce saw logs, and later on spruce pulpwood.

With the designation of the Nipigon Palisades Conservation Reserve as a protected area through the Lands for Life and Ontario's Living Legacy planning processes, forestry and mineral exploration are no longer permitted uses within the conservation reserve boundaries. Road access for forestry and mining purposes through the conservation reserve to reach the forest stands in the Orient Bay Peninsula Enhanced Management Area to the north is permitted.

6.4.3 WILDLIFE RESOURCE USE

Wildlife resource use in the Nipigon Palisades Conservation Reserve includes wildlife viewing, trapping and hunting. Wildlife viewing is increasing in popularity and is now often considered an integral and important part of any outdoor experience, be it an angling expedition or kayaking trip. The opportunity to view wildlife in their natural surroundings is a thrill for any outdoor enthusiast.

Hunting is an important social and economic activity in the Nipigon Palisades Conservation Reserve. Deer, moose and bear seasons provide commercial and local hunting opportunities within the Conservation Reserve. Several charter boat operators that cater to moose and bear hunting operate out of Orient Bay. Under the Land Use Strategy (1999), sport hunting will continue to be permitted within the new conservation reserves.

Moose are the principal big game animal in the conservation reserve. Since the migration of moose to the Lake Nipigon area in the late 1800s, Native and European settlers have hunted them for subsistence purposes.

Within the Nipigon Palisades Conservation Reserve, there is one Wildlife Management Unit (WMU 21A) and moose tags are allocated on a per unit basis. Aboriginal and treaty rights allow First Nation people to hunt for

subsistence purposes. The extent to which subsistence hunting occurs within the area is unknown.

White-tailed deer have become more abundant in the area due in part by the disturbance caused by forestry activities and the resulting availability of early successional habitat. There is currently a season for white-tailed deer in WMU 21A. Other animals hunted in the area include upland game birds, and waterfowl.

Black bear has steadily increased in importance as a big game animal. Bear hunting is done primarily by non-residents using local bear outfitter services. There are a number of bear management areas that fall partially or wholly within the boundaries of the conservation reserve. These include: NG-21A-006, NG-21A-010, and NG-21A-014.

Trapping is the oldest commercial industry in the Nipigon Palisade Conservation Reserve. Trapping was not controlled until 1947 when the Department of Lands and Forests implemented a licensed trapping system with registered traplines. Today, trapping continues to provide economic benefit to local people. There are four actively managed traplines that

intersect the boundaries of the conservation reserve. As of the 1998 trapping season, the predominant species trapped were marten, beaver and weasel. Other trapped species include muskrat, otter, mink, lynx, fisher, wolf, red fox and red squirrel.

6.4.4 TOURISM AND OUTDOOR RECREATION

Non-consumptive recreational resource use is steadily increasing in the Nipigon Palisades Conservation Reserve. Camping, swimming, canoeing, kayaking, wildlife viewing, and ice/rock climbing are some of the most popular activities in the area.

6.4.4.1 Nature Appreciation

The scenic nature of the conservation reserve and the wildlife viewing opportunities make it an attractive place for outdoor enthusiasts. The striking cliffs and cascading waterfalls are a major highway viewing resources along Highway 11, offering several kilometers of impressive scenery for tourists to the area, passing motorists and summer cyclists.

TABLE 18. Tourism Facilities located at Orient Bay and the services offered.

OUTFITTER	SERVICES OFFERED									
	Boat Launch	Boat Rental	Marina	Charter Service	Cabins	Camping	Outfitting	Fishing	Moose Hunting	Bear Hunting
Royal Windsor Lodge	✓	✓	✓		✓	✓	✓	✓	✓	✓
McCollum's Reflection Lake Cabins	✓			✓	✓			✓	✓	✓
Taisey's Cabins				✓	✓	✓			✓	✓
Nighthawk Charters Cruiser Service				✓				✓	✓	
Shadow Mountain Charters				✓				✓	✓	
Paul's Charter Service				✓				✓	✓	
Sandy's Charter Service			✓	✓				✓	✓	

6.4.4.2 Cottaging and Camping

A cottage development occurs at Orient Bay. Camping also takes place at a number of private tourist facilities at Orient Bay.

Some of the lodges located there offer housekeeping cabins, RV and trailer camping, and tent camping facilities. Table 18 lists these facilities.

6.4.4.3 Hunting and Fishing

Several tourist operators have established facilities at Orient Bay which is located directly north of the Nipigon Palisades Conservation Reserve. These businesses cater to several user groups including anglers, hunters, and paddlers. These businesses range from charter and cruiser boat services, housekeeping cabins, and canoe outfitting services, as listed in Table 18.

Fishing and hunting charters continue to be an important part of the economy to local Orient Bay residents. These charter boat operators offer day-trips and over-night opportunities for individuals and groups. Brook trout, lake trout, lake whitefish, walleye and northern pike are among the more sought after sport fish species.

Deer, moose, and bear seasons provide commercial hunting opportunities within the area.

6.4.4.4 Rock/Ice Climbing

Over the last 20 years, rock and ice climbing at the Pijitawabik Palisades has seen an explosion of interest, dramatically increasing from a handful of climbers in the early eighties to hundreds today. The Palisades attracts climbers from the area, North America and overseas.

The area is already home to dozens of rock climbing routes. The Taj-Mahwall hosts a concentration of excellent sport climbing routes while a concentration of shorter sport lines is found in Da'Projects. Potential exists here for new routes, as well as in the Schoolhouse, Mount Olympus and numerous other areas.

Lengthy winters mean that ice climbing routes form reliably from late November to late April every year. The North of Superior Orient Bay Ice Fest, a yearly event in March, attracts local, continental, and international ice climbing enthusiasts. *"The area around Orient Bay has the most extensive, accessible assortment of frozen waterfall climbing routes east of the Rocky Mountains"* (Parent, 1993).

The valley of Orient Bay holds more than 100 ice climbing routes along a single 20 km stretch of highway, many of which are visible from Highway 11. These routes represent all grades from Grade 2 to 6 (Parent, 2000). A few of the more popular climbing routes at Orient Bay are listed in Table 19 (taken from Parent 2000).

6.4.4.5 Hiking

A number of established trails have been developed in the Pijitawabik Palisades area. These trails are mostly used by ice and rock climbers to access the various climbing routes. Hikers also use these trails to access the scenic waterfalls. One popular destination is the Kefkatikgwam Falls located just northeast of the TransCanada PipeLine CoGeneration station. There are a few trails that branch off the pipeline across the highway from McKirdy Lake and Sinclair Lake. Another trail is the Loop Trail which has two access points on Highway 11 referred to as the south and north loops (directly across from Scenic View Road).

6.4.4.6 Snow Route Activities

The Ontario Federation of Snowmobile Clubs (OFSC) operates an 18,000 kilometer border to border system called the TransOntario Provincial Snowmobile (TOPS) Trails. The Ontario Federation of Snowmobile Clubs (OFSC) Trail A between Nipigon and Geraldton runs approximately 1 km south of the southern most tip of the Nipigon Palisade Conservation Reserve along Limestone Lake Road. Logging roads, hydro lines and natural gas pipelines are also used by snowmobile enthusiasts. These trails afford a spectacular view of the area.

TABLE 19. Popular ice climbing routes in the Orient Bay area as taken from Parent (2000). Grade denotes difficulty, ranging from Grade 1 to Grade 5 (requiring the most skill). Location is taken from nailed red-on-black "0" sign on a tree to the right of Highway 11, 25 kilometers (15 miles) north of the intersection of Highways 11 and 17.

CLIMB	GRADE	HEIGHT(m)	LOCATION (km)	DESCRIPTION
MELLOW YELLOW	3+	60	2.8 km (1.8 miles)	Easily visible from Highway 11 and distinctly yellow in colour. Variety of ice types and difficulty levels
CASCADES	3	40	15.7 km (9.8 miles)	This is the Orient Bay classic, growing up to 10 meters thick, offering a wide variety of climbing grades and ice variations.
OBSESSION	4	60	16.0 km (10 miles)	Located less than 50 meters from Highway 11; it is a steep, ice-filled chimney with a widening apron.
TEMPEST	2+	70	16.7 km (10.4 miles)	This is one of the most climbed routes with a wide variety of terrain.

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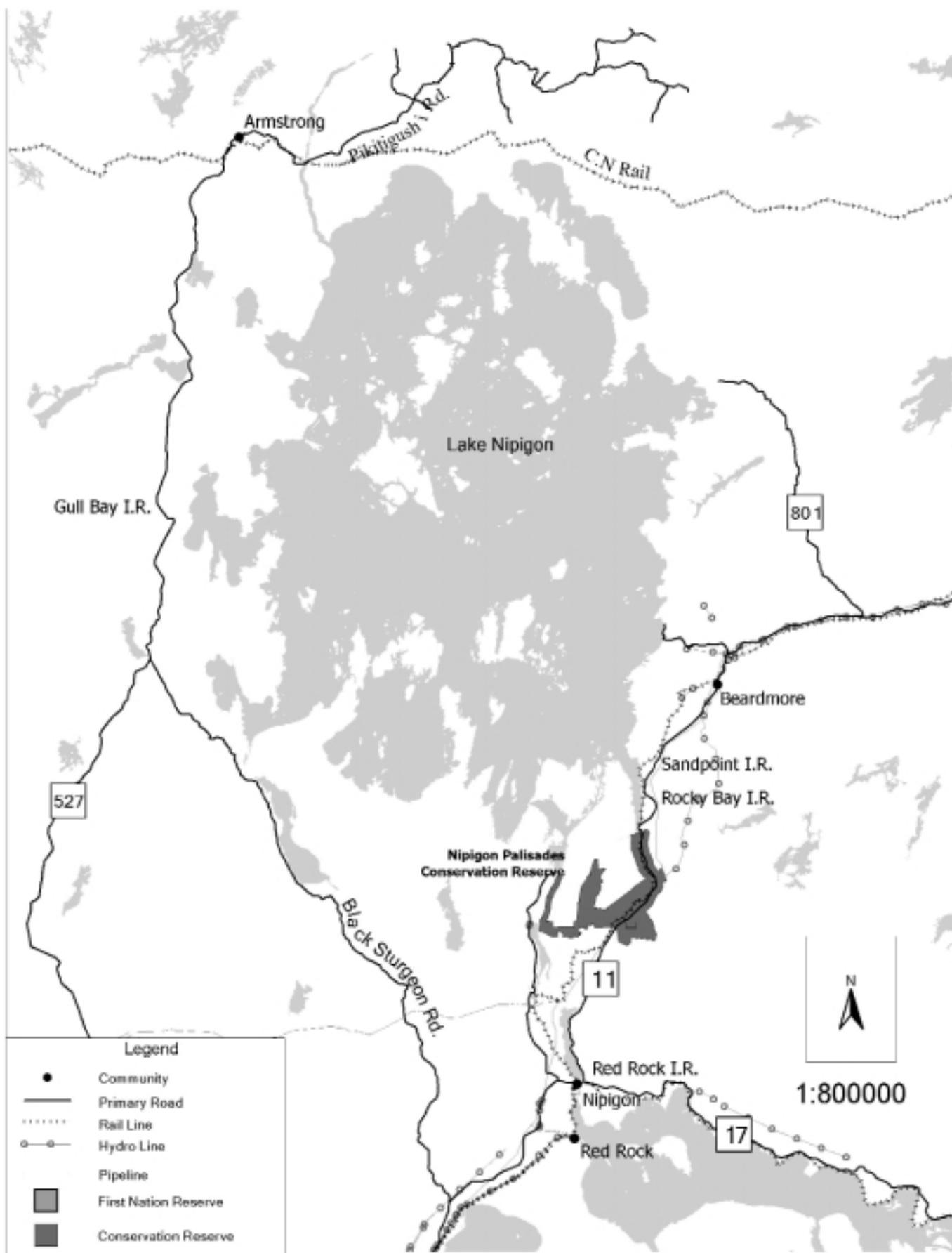
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FIGURE 7: REGIONAL SETTING MAP FOR PALISADES CONSERVATION RESERVE



Data Source: MNR NRVIS Database
 Projection: Universal Transverse Mercator, Zone 16
 North American Datum, 1983
 Date: 06/03/02

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INSERT FIGURE 8

BOUNDARY MAP FOR PALISADES CONSERVATION RESERVE

INSERT FIGURE 9

REGIONAL SETTING MAP FOR PALISADES CONSERVATION RESERVE

FIGURE 8: BOUNDARY MAP FOR PALISADES CONSERVATION RESERVE

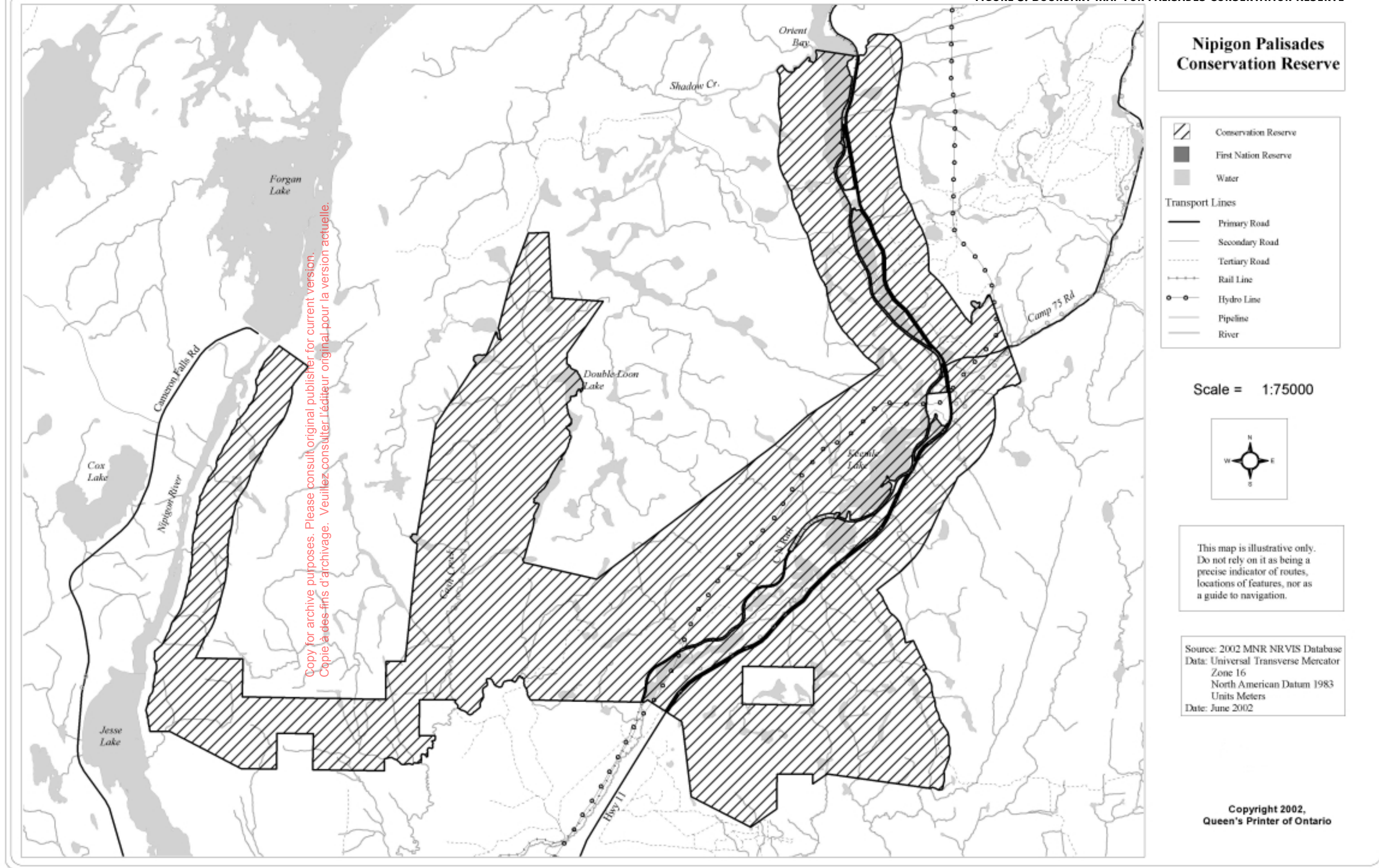
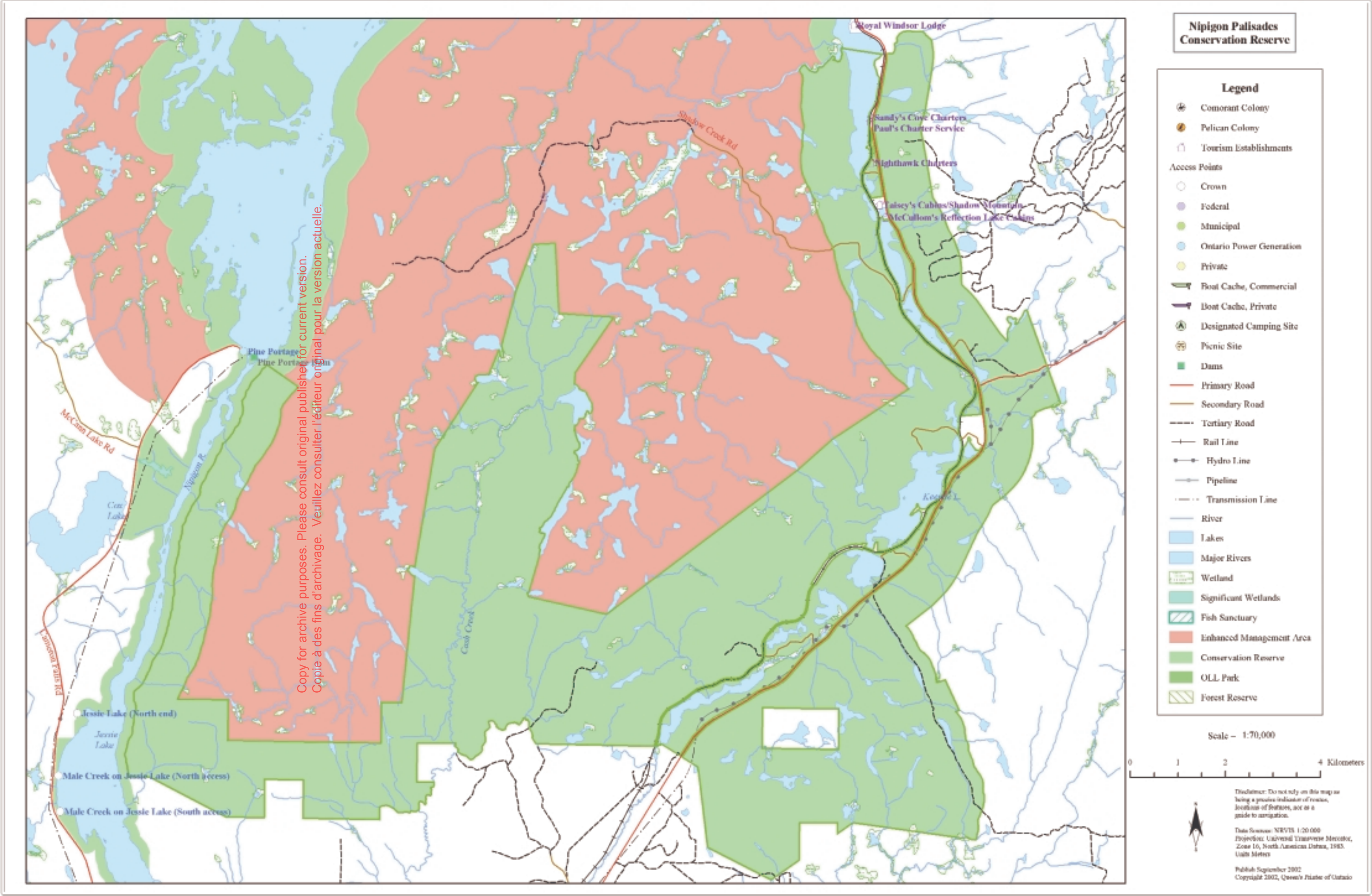


FIGURE 9: RESOURCE MANAGEMENT MAP FOR PALISADES CONSERVATION RESERVE



NIPIGON RIVER CONSERVATION RESERVE RESOURCE MANAGEMENT PLAN

CHAPTER 4

July 2003

APPROVAL STATEMENT:

I am pleased to approve the Management Plan for the **Nipigon River Conservation Reserve**.

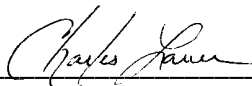
This Management Plan provides guidance for the management of the Conservation Reserve and the basis for ongoing monitoring activities.

The **Nipigon River Conservation Reserve** is located within the Lake Nipigon Basin Signature Site, one of 9 such areas featured in the *Ontario's Living Legacy Land Use Strategy* (1999). Signature Sites are identified for their range of natural and recreational values and their potential to contribute to future recreation and tourism.

This Management Plan has been developed under the general direction of the Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy, which provides the overall context for land use and resource management activities in the basin.



Ian Hagman
District Manager
Nipigon District



Charlie Lauer
Regional Director
Northwest Region

STATEMENT OF ENVIRONMENTAL VALUES AND THE ENVIRONMENTAL BILL OF RIGHTS

In accordance with the provisions of the *Environmental Bill of Rights*, the Ministry of Natural Resources prepared a *Statement of Environmental Values*. It describes how the purposes of the *Environmental Bill of Rights* are to be considered whenever decisions are to be made which might significantly affect the environment.

The primary purpose of the *Environmental Bill of Rights* is “to protect, conserve and wherever possible, restore the integrity of the environment.” From the Ministry’s perspective, that broad statement of purpose translates into four objectives in its *Statement of Environmental Values*:

- To ensure the long-term health of the ecosystems by protecting and conserving our valuable soil, aquatic resources, forest and wildlife resources as well as their biological foundations;
- To ensure the continuing availability of natural resources for the long-term benefit of the people of Ontario;
- To protect natural heritage and biological features of provincial significance; and,
- To protect human life, the resource base and the physical property from the threats of forest fires, floods and erosion.

The Ministry’s *Statement of Environmental Values* has been considered in the development of this resource management plan for Nipigon River Conservation Reserve.

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1.0 INTRODUCTION

The Nipigon River Conservation Reserve was established as part of *Ontario's Living Legacy Land Use Strategy*, released in 1999, that guides the planning and management of Crown lands in central and portions of northern Ontario (OMNR 1999). Under this initiative, 378 new protected areas were identified, including the Nipigon River Conservation Reserve.

This conservation reserve is one of seventeen Land Use Designations that form the Lake Nipigon Basin Signature Site. The Lake Nipigon Basin Signature Site is one of nine signature sites within the Province of Ontario. It was identified as having a range of highly significant values that warrant special strategies (OMNR 1999).

The Nipigon River Conservation Reserve was designated to preserve the diverse, world-class fishery as well as rare plants and raptors (including eagles), and to protect archeological and historic sites of provincial significance. The designation of conservation reserve permits many traditional land uses to continue, including active and passive recreation with their associated facilities, while excluding timber harvesting, mining, disposition of Crown land and hydroelectric development (OMNR 1999).

The planning process and public consultation required for the development of this resource management plan was an integral part of the overall development of the *Ecological Land Use and Resource Management Strategy for the Lake Nipigon Basin*. Detailed information relating to the process followed and the public input obtained can be found in Appendix A of the strategy document.

2.0 PLANNING AREA

2.1 REGIONAL SETTING

The Nipigon River Conservation Reserve is located in the northwest region of the Province of Ontario, within the Nipigon administrative District of the Ontario Ministry of Natural Resources (OMNR). The river flows from the southeast corner of Lake Nipigon, and is approximately 170 kilometers northwest of Thunder between 88 and 89 degrees longitude and between 49 degrees 15 minutes and 50 degrees 15 minutes latitude (OMNR 2001) (Figure 10).

The Nipigon River Conservation Reserve covers 2,700 hectares of Crown land south of Lake Nipigon as shown in Figure 11. The Cameron Falls Road (Highway 585) runs along the west side of the river, providing several access points. This road connects at the south end to the Highway 11/17 corridor, west of the Town of Nipigon and terminates at Lake Nipigon.

Specifically, this conservation reserve runs along the Nipigon River south of Pine Portage on Forgan Lake in the north, to the mouth of the river at Lake Helen in the south. The section of the river at Cameron Falls and Alexander Dam is excluded from the reserve. The reserve consists of the Nipigon River between the banks and the adjacent valley lands within approximately 200 metres of the shoreline. The boundary has been revised from that originally identified in the *Ontario's Living Legacy Land Use Strategy* to include significant wetland area and a scenic hiking trail at the northwest corner of the reserve.

This conservation reserve abuts with other conservation reserves and enhanced management areas of the Lake Nipigon Basin Signature Site. The Nipigon Palisades Conservation Reserve is located adjacent to the northeast section of the Nipigon River Conservation Reserve. The South Lake Nipigon Enhanced Management Area is located adjacent to the northwest tip of the Nipigon River Conservation Reserve. The northern boundaries of the conservation

reserve also border the Lake Nipigon Conservation Reserve.

Red Rock First Nation located at the south end of Lake Helen is in close proximity to the conservation reserve. Nearby communities include Nipigon, Red Rock, Beardmore and Macdiarmid (within the newly created Municipality of Greenstone), and Biinjitiwaabik Zaaging Anishinaabek (Rocky Bay). These communities provide essential services such as gas, shopping, groceries, restaurants, hotels and medical care. The City of Thunder Bay has an international airport and is the largest service centre in the region. The Parmacheene Indian Reserve, which is associated with the Red Rock First Nation, is located on Lake Helen adjacent to the southern tip of the conservation reserve and used mainly in the summer.

2.2 DESCRIPTION OF THE STUDY AREA

Aboriginal people have inhabited the area around the Nipigon River since the last ice age. The extensive trade routes developed by First Nations people, coupled with their intimate knowledge of the landscape were the foundations upon which the historical fur trade was built. The Nipigon River was an important trade route, linking Lake Superior in the south with Lake Nipigon and the Albany River to the north.

Starting in the mid 1800s, word of the famous brook trout fishery spread, and gentlemen anglers started arriving by steamer on Lake Superior to the mouth of the Nipigon River. In 1887, the American based Forest and Stream magazine named the Nipigon River the finest trout stream in the world. This publicity coupled with access made easy with the completion of the railroad in 1885 caused a noticeable decline in the fishery. While the fishing had declined, by world standards the Nipigon River was still a high quality fishing destination. In 1915 a world record was set when a brook trout was caught at Rabbit Rapids weighing 6.58 kg (14.5 lbs.).

The construction of the CPR through Nipigon between 1883 and 1885 required extensive

use of forest resources. Thousands of ax-made ties were taken from within and adjacent to the right-of-way. The first attempt to drive logs down the Nipigon River was made by James Whalen in 1900 and continued until 1907. There was no dam construction at that time and the river was rough and proved to be a challenge.

The Cameron Falls Dam was constructed in 1918 and initiated the full log drive which started again in 1923 and continued until 1973. Alexander Falls Dam was constructed in 1930 and Pine Portage in 1950. With the completion of Pine Portage, the water level on the Nipigon River was raised by 31 metres (100 feet). Almost 16 kilometres of white water, rapids and waterfalls were flooded.

Today, the area surrounding the Nipigon River is home to a variety of vegetative communities including wetlands, coniferous forests, and mixed coniferous-deciduous forest. Gore and Storrie Ltd. (1994) reported a total of 359 plant species during their reconnaissance survey of the Nipigon River. Three of these species are considered to be arctic-alpine species, several are regionally significant vascular plant species and two are provincially rare.

These vegetation communities and the talus slopes of the diabase sills, provide habitat to a number of significant wildlife species. Both the bald eagle and the peregrine falcon have been sighted along the river, although nesting has yet to be confirmed. Other significant bird species include the great grey owl and the red-necked grebe. Many cougar sightings have been reported in recent years, although none have been verified with physical evidence. There have also been scattered records of sightings of wolverine around the Nipigon River. Deer, moose, and bear are all found within the conservation reserve, and provide commercial and local hunting opportunities.

The greatest diversity of fish species (both native and exotic) within the Lake Nipigon watershed is associated with the Nipigon River. While brook trout is the most valued sport fish species on the river, other species

include lake whitefish, lake trout, rainbow trout, northern pike, walleye and Chinook salmon as well as smelt. Sport and First Nation's subsistence fishing occurs year-round on the Nipigon River.

In addition to hunting and fishing, the Nipigon River Conservation Reserve provides canoeing, kayaking, boating, swimming, wildlife viewing, hiking, cultural appreciation and snowmobiling opportunities for local residents and tourists.

3.0 PLAN GOAL AND OBJECTIVES

Goal Statement: To protect, enhance and where necessary, restore the natural ecosystems, populations and wilderness qualities of the Nipigon River Conservation Reserve, while allowing for recreational development that will not compromise the integrity and environmental values of the conservation reserve ecosystem.

A number of specific objectives have been developed for the Nipigon River Conservation Reserve from the overall objectives for the Lake Nipigon Basin Signature Site. The intent is to implement strategies to achieve these objectives which in turn will further the objectives for the Basin.

3.1 ACCESS

- To review current access points along the Cameron Falls Road (Highway 585) and other roads in the area to determine if they should be removed, improved, or left status quo
- To work towards maintaining/developing a few good quality access points along the Nipigon River
- To ensure that the existing access on the Nipigon River does not damage the integrity of the river environment

3.2 CROWN LAND USE

- To ensure fair and equal access to Crown land resources by enforcing the 21 day Crown land camping rule at access points open to Crown land camping
- To improve the day use facilities (i.e. fire pits, picnic tables, pit privies, etc.) at a few selected access points along the Nipigon River
- To promote the continued enjoyment of Crown land recreation activities along the Nipigon River Conservation Reserve, such as hiking, fishing, and nature appreciation, in an ecologically sustainable manner

3.3 TOURISM/RECREATION

- To consider the development of new tourism and recreation opportunities along the Nipigon River including enhanced day-use facilities and hiking trail development
- To ensure any tourism/recreation development and activities will occur such that the capacity of the supporting natural resource base is not exceeded

3.4 FISH COMMUNITY AND FISHERIES

- To protect, rehabilitate (e.g. spawning beds, upwellings, nursery areas) and sustain healthy aquatic ecosystems and fish populations and their habitats within the Nipigon River based on naturally reproducing species
- To ensure that the necessary information for improved management of the Nipigon River ecosystem is collected and analysed
- To restore depleted stocks of native brook trout, walleye and lake sturgeon populations
- To manage for a sustainable, high quality, world class sportfishery on the Nipigon River

- To assist with the rehabilitation of the walleye population in the lower river to ensure that walleye are sustained within the conservation reserve
- To protect, rehabilitate and sustain the lake sturgeon population
- To provide a world class, high quality brook trout fishery based on a memorable sized catch
- To provide a high quality, sustainable lake trout fishery within Jessie Lake
- To allow for the social and economic benefits of First Nation subsistence fishing in addition to sport and bait fishing
- To encourage First Nations to be co-stewards in the management of the Nipigon River fisheries

3.5 WILDLIFE

- To protect and sustain and where necessary rehabilitate wildlife habitat and populations in the conservation reserve while allowing for the benefits of wildlife viewing, Aboriginal subsistence hunting, sport hunting and trapping
- To promote opportunities for non-consumptive uses of wildlife (nature appreciation, viewing areas, interpretation, education and scientific study)
- To work to maintain and where possible, expand the populations of wildlife species at risk (i.e. peregrine falcon, bald eagle, etc.)

3.6 VEGETATION

- To manage vegetation where possible through fire management in the conservation reserve to ensure a natural diversity of vegetation cover and structure

- To identify, document and protect arctic-alpine disjunct species as well as regionally and provincially significant plant species/communities and their habitats within the Nipigon River Conservation Reserve
- To maintain and where necessary enhance riparian and bankside vegetation (herbaceous and woody) in order to maintain the integrity and stability of stream banks and as a long-term source of wood to the channel

3.7 WATER RESOURCES

- To ensure the continued maintenance, and where necessary, improvement of water quality and to ensure that no degradation of water quality occurs as a result of tourism, recreational or industrial activities/development in and around the Nipigon River Conservation Reserve
- To reduce the probability of the introduction of exotics into the Nipigon River
- To work with Ontario Power Generation and other Power generators to manage flow regimes in the river in order to maintain and restore the structural (i.e. geomorphic/morphological) health of the river channel and its geomorphic processes

4.0 MANAGEMENT DIRECTION FOR CONSERVATION RESERVE

The management direction that follows in this section must be considered along with the direction contained in MNR's conservation reserve policy. Where this resource management plan does not address a specific activity, the provisions of the conservation reserve policy will apply.

4.1 ACCESS

4.1.1 DISCUSSION

Existing road development in the Nipigon River Conservation Reserve is a combination of public highways and public secondary access roads. These gravel roads facilitate access to the Nipigon River at several locations. These access roads are used by subsistence hunters and anglers, commercial bait and fur harvesters, recreational anglers, hunters, canoeists and kayakers, cyclists, Crown land campers, hikers, naturalists and many other types of recreational enthusiasts.

Currently, there are 12 named access points and a number of smaller unnamed ones along the Nipigon River, located on both Crown and private land. The Crown land access points include Birch Point, South Male Creek, North Male Creek and the North end of Jessie Lake. Alexander Landing, which has been developed and maintained as an access point by MNR, is currently owned by Ontario Power Generation. The intent is that this property will be sold back to the Crown. The future status and management of the remaining access points located on private land are not within MNR's control.

Alexander Landing has a parking lot and concrete boat launch. Crown land camping is currently not permitted at the Alexander Landing access point. Birch Point, North and South Male Creek and the North end of Jessie Lake access points all have earthen boat launches and parking lots. Crown land trailer camping is popular at these sites.

Members of the public using the sites for Crown land camping have modified the areas with trailer pads, fire pits, outhouses, garbage facilities and wood storage facilities. This activity has negatively impacted the area to a certain degree. Improper garbage disposal is also an ongoing problem at the access points.

The heavy camping use that these access points have historically received during the summer, and the lack of adherence by some individuals to the 21 day Crown land camping regulation, reduces day-use opportunities for other people.

4.1.2 DIRECTION

No new access will be created on the Nipigon River. The intent is to maintain and promote Birch Point and Alexander Landing as high quality, day use access points to focus the use along the river. The improvement of facilities at these access points will be explored through the formation of partnerships. No overnight camping will be permitted at Birch Point or Alexander Landing. Access and Crown land camping will continue to be permitted but not promoted, or expanded at the North end of Jessie Lake and North and South Male Creek access points in deference to the local users.

4.1.3 MANAGEMENT STRATEGIES

- Allow no new Crown land access on the Nipigon River
- This will be accomplished through active communication with local stakeholder groups such as the recreational angling and hunting communities
- Physically remove any new access discovered and sign immediately
- Improve access to the Nipigon River at Birch Point and Alexander Landing
- Work in partnership with stakeholder groups (Land of the Nipigon Waterways Development Association, Township of Nipigon) to improve and maintain the facilities at these access points

- Improvements to Birch Point may include pit privies, garbage facilities, concrete boat launch, picnic tables, and site clean-ups
- Improvements to Alexander Landing may include garbage facilities, pit privies, improved parking and site clean-ups
- Erect signage indicating no Crown land camping permitted at the access points
- Leave North and South Male Creeks and the North end of Jessie Lake Crown land access points open but do not promote them through brochures or signage and provide no improvements
- Institute an access point clean-up along the river as part of a Basin-wide initiative involving local volunteers and stakeholder groups
- Work to enlist Ontario Power Generation's cooperation in leaving the access point at Alexander Forebay (Point) open in order to maintain access to this portion of the river

4.2 CROWN LAND USE

4.2.1 DISCUSSION

Crown land use includes the array of outdoor activities that take place on Crown land. These activities include trailer and tent camping, hiking, cycling, berry picking, swimming, picnicking, boating, canoeing, kayaking, hunting, angling and snowmobiling. Crown land use also includes the construction of facilities on Crown land for certain purposes (i.e. trap cabins, commercial fish cabins, recreation camps) that are authorized through land use permits, leases or letters of authority.

Although recreation is popular and promoted in the Nipigon River Conservation Reserve, Crown land activities may have a negative impact on the environmental resources if not managed properly. These recreational activities can impact on the ecological, cultural and wilderness values of the Nipigon River Conservation Reserve. Some of these impacts include destruction of vegetation,

garbage, damage to sensitive wildlife habitat, degradation/erosion of shoreline and soil contamination. Campers at various access points along the Nipigon River have adversely altered Crown and private land areas with the construction of trailer pads, docks, latrines, fire pits, signage, and other facilities. Garbage is also a major problem at these locations. This is particularly the case with the access points on Jessie Lake.

In addition to the negative ecological impacts, modifications such as these are prohibitive to other individuals looking for recreational opportunities. This is further compounded by the heavy use these access points receive during the summer and the lack of adherence by some individuals to the 21-day Crown land camping regulation.

4.2.2 DIRECTION

Many opportunities for Crown land activities exist in the Nipigon River Conservation Reserve. Activities such as canoeing, boating, picnicking, hiking and nature appreciation will be encouraged in a manner that does not jeopardize any of the river's significant environmental or cultural values. Areas of high sensitivity will be identified and managed to prevent negative impact to these sites. Use will be directed to existing and future approved trail, access and viewing facilities. Birch Point and Alexander Landing access points will be managed for day-use only. This means no overnight camping will be permitted.

Crown land camping and access will continue to be permitted at North and South Male Creek and North end of Jessie Lake Crown land access points. The 21-day Crown land camping rule will apply so that all members of the public have fair access to the recreational opportunities available at these sites. The MNR will monitor the use of these access points for any indication of environmental or site quality degradation and will take corrective measures if deemed necessary.

Remote tent camping (not road accessible) will be permitted on Crown land within the Nipigon River Conservation Reserve

(Figure 12). There are currently no trap/bait fish cabins located in the conservation reserve. Construction of new cabins within the reserve boundaries will not be permitted.

4.2.3 MANAGEMENT STRATEGIES

- Prohibit overnight Crown land camping at Birch Point and Alexander Landing Crown land access points along the Nipigon River within the conservation reserve
 - Post signs to inform the public of the no overnight camping restriction
 - Encourage day-use activities such as swimming, boating, and picnicking
- Improve the environmental condition of remote campsites within the Nipigon River Conservation Reserve through a campsite clean-up involving volunteers and stakeholder groups
- Allow for overnight camping at the existing sites; North end of Jessie Lake, North and South Male Creek. Enforce the 21 day camping rule in these areas
 - Do not allow improvement or expansion of the existing sites
 - Monitor the sites regularly (at least twice) during the spring and summer season for signs of degradation, ensuring environmental condition and site quality are documented at each visit
 - Post 21-day Crown land camping signs at each access point.
- Encourage remote camping on the Nipigon River
 - Institute an education program through partnerships, as part of a larger initiative in the Basin, to promote these opportunities while discouraging negative impacts on the environment (e.g. human waste, multiple fire pits, destruction of vegetation to build structures, etc.)
 - Erect signage promoting good stewardship at remote campsites
- Restrict Crown land use in all areas of critical fish and wildlife habitat. For example;
 - within 200 metres of a bald eagle nest between March 15 and August 15
 - within 200 metres of an osprey nest between March 15 and August 15
 - within 1000 metres of a peregrine nest between March 15 and August 15
 - Educate the public regarding restricted use zones through brochures, maps and signage
 - Place educational signage outlining the restriction on Crown land use and the reasons for them at Alexander Landing and Birch Point
- Distribute educational brochures and maps through the local MNR office and through partners such as tourist outfitters, municipalities, Thunder Bay Field Naturalists, Ontario Federation of Anglers and Hunters and tourist information centres

4.3 TOURISM AND RECREATION

4.3.1 DISCUSSION

The Nipigon River provides easily accessible outdoor recreation opportunities to local residents and tourists within close proximity to surrounding communities. These activities include camping, hiking, cycling, nature appreciation, swimming, picnicking, boating, canoeing, kayaking, hunting, angling and snowmobiling.

As discussed in the sections 4.1.1 and 4.2.1, the heavy use of Crown land access points for camping and the ensuing degradation of these areas are arguably the largest recreational issues on the Nipigon River. The individuals that have historically used these sites for camping have built pit privies, constructed storage shelters, trailer pads, docks, and erected signage. These structures are prohibitive to other individuals seeking Crown land recreation opportunities.

While the Nipigon River is within a short drive to a number of communities, the area has few day-use opportunities. There are a number of locations that would be excellent picnicking locations, but they are without appropriate facilities. Also lacking are interpretive/educational facilities and literature (i.e. brochures, maps, interpretive signage) to promote the area to visiting tourists.

One activity that appears to be increasing in popularity in the area is hiking. However, the Split Rock Trail that overlooks Split Rock Rapids on the Nipigon River is one of the only hiking trails in the conservation reserve and is poorly developed. The trail extends north along a challenging trail on the steep cliffs overlooking the river. Sections of the trail are steep and dangerous, and marked only with flagging tape. There is no interpretive signage along the trail to date, nor are there any pamphlets with maps advertising the trail.

While historically, canoeing played an important role on the Nipigon River, opportunities for day-use canoeing and canoe tripping have been relatively unexplored in recent years. The possibilities of promoting day-use, overnight canoe trips, and extended canoe trips that retrace the historical trade routes should be investigated. Easy access to the river increases the feasibility of these opportunities.

4.3.2 DIRECTION

Well accessed already, tourism and recreation strategies will focus on developing new and/or improving existing facilities (e.g. trails, access, look-outs, kiosks, parking, brochures etc.) in areas already disturbed rather than disturbing new areas for development.

A review of existing tourism and recreation infrastructure/activities will be undertaken for this area with the intent of removing facilities or restricting activities that are found to be negatively impacting the environment (e.g. trails impacting sensitive vegetation, boat launches affecting fish habitat). Opportunities exist for the development, through

partnerships, of a riverside trail to Split Rock Rapids.

4.3.3 MANAGEMENT STRATEGIES

- Enhance the Split Rock Trail overlooking Split Rock Rapids on the Nipigon River
 - Work in partnership with stakeholder groups (i.e. the Nipigon Section of the Voyageur Trail Association, the Thunder Bay Hiking Club, Land of the Nipigon Waterways Development Association, and/or the Township of Nipigon)
 - Improvement should include trail signage, trail markers, interpretive signage at strategic lookouts highlighting the history of the river, railings, and stairs
 - Promote this trail through partnerships via a brochure highlighting the trail route and history of the Nipigon River
- Establish a hiking trail along the historic Nipigon Tramway that stretched close to 29 km (18 miles) from Alexander Landing to South Bay on Lake Nipigon
 - Work in partnership with stakeholder groups (i.e. the Nipigon Section of the Voyageur Trail Association, the Thunder Bay Hiking Club, Land of the Nipigon Waterways Development Association, and/or the Township of Nipigon) to establish the trail route and clear the trail
 - Work in partnership to erect trail signage, interpretive displays, trail markers, and to develop promotional material
- Encourage canoeing and kayaking opportunities on the Nipigon River
 - Work in partnership with stakeholder groups to develop a brochure highlighting the day-use and overnight remote camping opportunities for recreational canoeing and kayaking on the river
 - Highlight the history of the fur trade, early gentlemen anglers, the log drives, and hydro development in a brochure and through interpretive signage

- Work with local outfitting businesses to explore the possibility of developing canoe trips based on the historical trade routes. To retrace the voyageur routes, trips could start at the site of the first North West Company trading post at the mouth of the Nipigon River and move upstream towards Lake Nipigon
- Investigate the opportunity to develop a self-guided historical water trail along the Nipigon River with a historical photo brochure
- Work with stakeholder groups to develop interpretive signage that corresponds to the numbered stops in a brochure. Highlights might include; the river before hydro development; historic campsites; historic portages; historical log drive landmarks; the community of Cameron Falls; etc.
- Develop a brochure for a self-guided cycling or driving tour along Highway 585
- In partnership with the local municipalities, tourist outfitters, etc. develop good quality colour map handout of the Nipigon River Conservation Reserve and surrounding protected areas. Identify access points, trails, day-use facilities and restricted use zones and include information on species at risk, trails, campsites, low impact camping, local prehistory/history and significant plant species. This would be part of a larger initiative to develop similar material for the entire Lake Nipigon Basin.

4.4 FISH COMMUNITIES AND FISHERIES

4.4.1 DISCUSSION

The Nipigon River is an aquatic resource of international significance. The brook trout fishery has held legendary appeal since the mid-1800s. Starting in the early 1900s, a decline in brook trout numbers was reported. Consequently, from the 1960s to the 1980s, brook trout on the river became increasingly rare. A brook trout rehabilitation plan was developed in 1989. This, coupled with the water management plan, has improved the

condition of the fishery.

Although a water management plan is in place, there are still concerns that rapid rates of flow change may cause stranding of small fish and aquatic insects or may be dislodging insects. Fish attempting to migrate downstream are unable to withstand the high velocities of the water power turbines and may be killed when they are drawn into the penstocks at the power dams on the Nipigon River. The number and species of fish killed by the dams has not been quantified.

Angling pressure is still high in the river, with preliminary results of an angler tagging study showing brook trout recapture rates as high as 50%, meaning one out of every two brook trout is caught. The entire length of the Nipigon River receives high angling pressure, especially the brook trout stocks at Virgin Falls. Even the existing one brook trout over 51 cm size limit may not be adequate to allow for recovery. Furthermore, high rates of non-compliance have been encountered when enforcement patrols have been conducted.

Currently there is no method in place to directly regulate the amount of fish killed by sport fishermen. Further impeding the recovery of brook trout and walleye stocks is that while more anglers are practicing live release because of size restrictions and changing ethics, a lack of education results in improper fish handling techniques.

One of the major impediments to the management of the Nipigon River fisheries is the lack of inventory information for portions of the river between Pine Portage and Cameron Falls. A long-term biological monitoring program has not been established for the river. Areas of data deficiency include fish stock status, movement patterns, spatial and temporal information on spawning, critical habitats for specific vulnerable life stages (i.e. spawning, migration, over-wintering) and barriers to fish migrations in the tributaries.

Another area of deficient inventory, is the current level of baitfish harvest. Three actively managed baitfish blocks include a

portion of the Nipigon River. Currently, baitfishermen are not required to specify the water body from which harvesting occurs. No evaluation of baitfish harvest levels for Nipigon River, as part of the larger Lake Nipigon system has been conducted.

4.4.2 DIRECTION

Fish community efforts will focus on rehabilitating and sustaining healthy aquatic ecosystems and fish populations based on naturally reproducing species. Depleted stocks of brook trout, walleye and sturgeon will be restored in the lower Nipigon River downstream of Alexander Dam. Jessie Lake will be managed for healthy lake trout and whitefish populations. All other species will be managed to maintain current levels of abundance.

Collecting and analyzing information for the improved management of this aquatic ecosystem is considered of paramount importance. Subject areas requiring study include fish stock status, movement patterns, stock discreteness, spawning areas and time of spawn, barriers to fish migrations, and developing recovery plans for fish species at risk. Partnerships will be approached to assist in research and analysis. The Anishinaabek Ontario Fisheries Resource Centre is seen to be a significant partner in this regard with the ability to contribute traditional knowledge as well as participate in science and information gathering.

Fish habitat restoration projects could include restoring fish passage to tributary streams. Sport fish management priority will continue to focus on protection and rehabilitation of brook trout with secondary priority given to walleye and sturgeon stocks. Baitfish harvesting priority will focus on the need for an improved reporting system.

The Nipigon River will be managed for a high quality, sustainable sport fishery. The brook trout fishery will focus on providing a high quality memorable angling experience. The chance to catch a memorable sized brook trout will be maximized. This could include direct harvest control regulations that may

include a tag system and may be complemented with gear restrictions to facilitate live release such as allowing single barbless hooks and artificial lures only. Jessie Lake will also be managed to provide a high quality lake trout fishery. Other species such as walleye and sturgeon will be rehabilitated downstream of Alexander Dam to achieve self-sustaining status with the long-term goal of providing angling opportunities.

4.4.3 MANAGEMENT STRATEGIES

- Improve knowledge base of fish populations and habitat in the Nipigon
 - Carry out studies and programs in conjunction with partners to obtain and analyze resource and user information
 - Conduct studies on fish stock status, movement patterns, stock discreteness, spawning areas and time of spawn
 - Habitat work will focus on Alexander Forebay to ensure protection from drawdown
 - Determine an accurate estimate of subsistence harvest
 - Determine current levels of baitfish harvest
 - Identify and improve knowledge of fish habitat including areas under stress due to access points or pollution
- Restore depleted stocks of native species (brook trout, walleye and sturgeon)
 - Develop restoration plans and investigate management options for restoring these species to target levels of abundance
- Investigate management actions that allow for greater control of harvest to ensure harvest of all species are within the allocation consistent with species specific management goals
 - Implement complementary gear restrictions to facilitate live release of all species on the river

- Allow only artificial lures and single barbless hooks on the river. This will lessen the incidence of deep hooking and reduce handling time
- Provide educational material and training to sport fishermen concerning live release survival rates and recommended handling techniques. Materials might include brochures, wallet cards, rulers, videos, fact sheets, and summaries of the scientific literature. Hosting seminars should also prove beneficial
- Encourage angling for non-traditional species to relieve the pressure on traditional fisheries
- Manage the brook trout fishery to achieve a success rate of one fish per two hours of fishing effort and one brook trout greater than 55 cm for every eight hours of fishing
 - Investigate options for achieving these targets including a direct harvest control system (i.e. tag system), increased size limits or live release only for the brook trout fishery
 - Identify, protect and where appropriate, enhance spawning habitat
- Manage walleye downstream of Alexander Dam to support efforts to restore walleye populations in Nipigon Bay with the long-term goal of providing sport fishing opportunities
 - Continue with the walleye fishery closure on the river until rehabilitation has occurred
- Initiate efforts to restore the sturgeon fishery to historical levels on the Nipigon River with the long-term goal of establishing a limited sport fishery
 - Initiate studies to investigate stock status, movement patterns and spawning information
 - Develop and implement a recovery plan for sturgeon on the Nipigon River
- Manage the lake trout fishery on Jessie Lake to provide a catch rate of one lake trout for every three hours of fishing
 - Through public consultation, options for achieving this catch rate will be developed and implemented
- Manage fishing exploitation of non-depleted stocks of fish to maintain stable self-sustaining status
- Assess and monitor the success of the fisheries strategies with respect to achieving targets
 - Conduct angler surveys in addition to the continuation of the volunteer angler diary program
- Improve public awareness of consumption restrictions
 - Collect and provide fish samples to the Ministry of the Environment (MOE) for contaminant sampling on a routine basis and encourage the timely processing and reporting to the OMNR
 - Ensure that local residents (Township of Nipigon, Township of Red Rock, Municipality of Greenstone, and First Nations communities) are made aware of consumption restrictions. Provide public notice when changes occur
 - Assist the Ministry of the Environment in posting consumption advisories at all access points on the Nipigon River and provide notice whenever changes occur
 - Assist the Ministry of the Environment in working with local communities to develop a communication system to ensure that contaminant levels are well known and any changes in levels are quickly communicated to local residents
- Improve the system of reporting for bait fishing on the Nipigon River

- Work with bait fishers to develop a reporting system that specifies the water body from which harvesting occurs. This will be part of a larger initiative in the Lake Nipigon Basin
- Improve enforcement on the Nipigon River in conjunction with improved enforcement on Lake Nipigon
 - Encourage/promote enforcement partnerships through the Wildlife Guardian program
 - Non enforcement MNR staff will be encouraged to assist officers wherever possible to alleviate the problem of having enforcement personnel travel in pairs
 - Provide regulation information at all access points
- Incorporate First Nation participation in science information gathering to answer questions regarding the fishery
 - Work with Anishinaabek Ontario Fisheries Resource Centre as part of a larger inventory program for the Lake Nipigon Basin

4.5 WILDLIFE

4.5.1 DISCUSSION

The distribution of wildlife species around the Nipigon River has changed in the past one hundred years as a result of over-hunting, climate change and habitat loss, in particular the loss of fragmented and older successional forests. Logging and fire suppression have had the greatest impact on the landscape. Species sensitive to these disturbances and their habitats must be managed, along with the diversity and distribution of wildlife species in the conservation reserve.

Studies of the wildlife along the Nipigon River have been conducted. These studies supply managers with good general wildlife information, including rough species lists. However, there is a lack of specific wildlife surveys within the present boundaries of the conservation reserve. This includes an

improved inventory of birds, insects, amphibians, reptiles and small mammals. Inventory and monitoring must be established at various locations including sensitive sites such as wetlands.

Ontario's species at risk that use the Nipigon River, are extremely sensitive to human disturbances. Peregrine falcons require isolation for successful breeding. Human activity could impair breeding success. Similarly, human disturbance near bald eagle nesting sites during the breeding period can negatively impact nesting success. The public remains uninformed on the breeding behaviour, feeding behaviour, and the role in the ecosystem of these species. Furthermore, the scientific community has little understanding of the habitat use and long-term population trends of these and other sensitive species along the Nipigon River.

4.5.2 DIRECTION

Public education about the species at risk in the Basin will be achieved through the production of brochures to be distributed and through the placement of interpretive signs. Local businesses, municipalities, naturalists, academia, and outdoor groups will be approached to partner in this endeavor. Research and education programs will be initiated with the intent of establishing long term monitoring stations for birds, small mammals and amphibians, and conducting inventories of wildlife habitat and species at risk. Wildlife habitat and wildlife species sensitive to human disturbance/activity will be identified within the Nipigon River Conservation Reserve. Modified management practices will be implemented to ensure their protection (Figure 12).

4.5.3 MANAGEMENT STRATEGIES

- Improve inventory of small mammals, birds, amphibians, reptiles and insects
 - Conduct, support and seek partnerships and funding for inventories of rare habitats on the Nipigon River as part of a larger inventory in the Lake Nipigon Basin

- Establish long term trend-through-time monitoring stations at various locations including rare habitats following standardized protocols (i.e. Forest Bird Monitoring, Small Mammal trapping surveys)
- Establish scheduled regular monitoring for species at risk populations (i.e. peregrine falcons, bald eagles) to determine long-term population trends and habitat use
- Develop a detailed protection plan for each species at risk as part of a larger initiative in the Lake Nipigon Basin
 - Public education regarding the life history of species at risk (e.g. Peregrine falcon and bald eagle) will be improved
- Develop estimates of current and future subsistence demand for wildlife in the conservation reserve, as part of a larger initiative in the Basin
 - In consultation with Aboriginal communities around the river, develop estimates of subsistence harvest for each of moose, deer, bear, hare, grouse, and waterfowl
 - Determine where non-Aboriginal and Aboriginal harvests combined are sustainable
 - Encourage and assist in the development of a harvest reporting program to be administered by the Aboriginal communities in conjunction with the MNR

4.6 VEGETATION

4.6.1 DISCUSSION

Gore and Storrie Ltd. (1994) conducted a detailed study of the vegetation and flora along the Nipigon River. This provides important baseline data for the diverse habitats, ecological conditions and processes and flora. However, the information is not complete. Numerous interesting communities may have been overlooked and some of the vegetative communities would probably be better separated into more specific types. Additional surveys during the growing season

are needed, particularly around areas of heavy disturbance where sensitive vegetation may be threatened.

4.6.2 DIRECTION

The intent is to ensure that the diversity and distribution of native vegetation is maintained and where possible enhanced within the Nipigon River Conservation Reserve. Further fieldwork will be encouraged through partnerships to better map and define the vegetative communities within the conservation reserve. This information will increase knowledge of sensitive or unique vegetative communities as well as allowing for a better understanding of the number of habitat types and their availability.

Rare or infrequent old growth areas will be identified and a management plan will be developed for each.

Significant flora data collected to date is not complete. Efforts will be made through literature research and fieldwork to identify and locate regionally and provincially significant flora within the conservation reserve. This effort will likely be tied in with other fieldwork ongoing in the Basin and will take advantage of any partnership possibilities. Efforts will focus on rare habitats such as wetlands, cliffs, talus slopes, mineral seeps, and exposed shoreline first. As new information becomes available, sites with flora sensitive to disturbance will be designated as no use or limited use zones.

4.6.3 MANAGEMENT STRATEGIES

- Identify and protect infrequent and under represented vegetation types
 - Work with the Natural Heritage Information Centre, Thunder Bay Field Naturalists, the academic community and other interested partners to consolidate, collect, and document information on the vegetation communities, flora and unique habitat present in the Nipigon River Conservation Reserve
 - Implement management strategies to protect and/or rehabilitate rare/unique

species/communities, such as zoning sensitive vegetation communities as restricted from Crown land use

- Increase protection for sensitive floral species in the conservation reserve. Develop interpretive signage and brochures highlighting protection for sensitive species by working with stakeholder groups
- Expand knowledge base of sensitive species abundance and distribution by working with First Nation groups
- Conduct vegetation surveys during the growing season that focus on rare habitats, particularly in the spring and early summer, including areas of heavy use
- Investigate and implement vegetation management techniques using fire, through the preparation of a fire management plan, to ensure the continued availability of wildlife habitat and a healthy ecosystem

4.7 CULTURAL HERITAGE

The Nipigon River has an interesting past that includes prehistoric peoples, the fur trade, the building of the railway, early gentlemen anglers, and log drives.

4.7.1 DIRECTION

The intent with regard to cultural heritage is to improve the current level of knowledge, to increase public appreciation and understanding and to ensure the protection of cultural heritage values in the conservation reserve. This direction will be achieved through partnering and by managing Crown land use activities. In all cultural heritage management initiatives, MNR will endeavor to work with local Aboriginal communities to encourage their involvement in collecting and recording cultural heritage information and in educating the public.

4.7.2 MANAGEMENT STRATEGIES

- Improve the knowledge base of prehistoric and historic sites and associated activities in the conservation reserve

- Encourage the collection, consolidation and interpretation of cultural heritage information through partnerships with local historical societies, museums, Aboriginal communities, universities, municipalities and other ministries
- Keep an up-to-date record of known cultural values in the MNR office to assist in managing Crown land use to prevent negative impacts to cultural resources
- Ensure that the exact location of archaeological/cultural sites is not divulged to the public in order to limit the impacts of site disturbance
- Incorporate cultural heritage information in displays and public handouts to improve public awareness and understanding
- Proposed displays at highway access points will incorporate cultural heritage information pertaining to the Nipigon River Conservation Reserve and surrounding area

4.8 WATER RESOURCES

4.8.1 DISCUSSION

Power generation is arguably the most disruptive development that has occurred in the Nipigon watershed. The beginning of construction of the Cameron Falls Dam in 1918 marked the first of a long series of human induced changes that would impact the Nipigon watershed indefinitely. The first Nipigon River Water Management Strategy was developed in 1994. From this strategy, an Operating Plan to guide the day to day dam operations was recently developed and released to the public in 2001. However, drawdown continues to impact the productivity of the Nipigon River by stranding fish and losing aquatic invertebrates to desiccation.

Management of the Nipigon River is impeded by the poor interagency transfer of information such as limnological and contaminant monitoring data. Contaminant levels are elevated in at least some species of

fish in the Nipigon River. Often, the public is not aware of the consumption restrictions.

Another impediment to management of the river is the lack of information or a lack of recent data collection. Sporadic water quality monitoring on the river has occurred in the past with no monitoring within the last decade. Levels of pollution occurring from access areas of heavy use and camping areas are unknown.

The introduction of exotic species is a concern to the MNR and members of the public. These are organisms that have been introduced into habitats where they are not native. The introduction of invading species is an extensive problem and is a serious threat to biodiversity. Invading species can cause widespread and unpredictable changes to habitats. These changes can result in damage to ecosystems and native fish and wildlife populations.

4.8.2 DIRECTION

Hydro development on the Nipigon River at Pine Portage, Alexander Falls and Cameron Falls will be managed with the first priority being the health of the river's water resources. The Ministry will continue to work with the Federal Department of Fisheries and Oceans and Ontario Power Generation to further build on the successes achieved through the Nipigon River Water Management Plan. The Plan will be refined through the new Water Management Planning process to address concerns for ramping rates, fish entrapment in the turbines (entrainment) and instantaneous flow rates versus daily averages. Regular auditing will occur to ensure all aspects of the Nipigon River Water Management Plan are being followed and that the plan objectives are being achieved.

In co-operation with other regulatory agencies, inventories and studies will be conducted to better assess the level of pollution occurring on the Nipigon River from areas of high use and point source locations (access points, community development etc.). Where point source pollution problems are identified, the nature of any required

remedial action will be determined and management strategies put in place with the intent of achieving zero discharge (Figure 12).

4.8.3 MANAGEMENT STRATEGIES

- Ensure that the Nipigon River Water Management Plan objectives are being met, and that all aspects of the plan are being achieved including water level management and Operating Plan commitments to reporting and informing the public
 - Conduct regular auditing to ensure compliance
 - Ensure that the Nipigon Watershed Advisory Committee receives an annual report
 - Initiate studies or partnerships with OPG to determine; where fish habitat impacts (including drawdown on spawning beds) are continuing to occur on Nipigon River; the rate of fish entrapment in the turbines (entrainment); and locations of fish stranding whenever spilling or drawdown occurs
 - Modify river bed where feasible to allow fish to escape from areas where stranding occurs
 - Establish ramping rates and specify how flows will be managed on a daily basis to avoid pulsing flows and to achieve the daily level specified in the water management plan
 - Investigate the feasibility of creating a weir to maintain water levels and to minimize fluctuations in Alexander back pool area
 - Work jointly with the Federal Department of Fisheries and Oceans (DFO) and Ontario Power Generation (OPG) to revise the Water Management Plan as new information becomes available
 - Identify important flow events and regime characteristics necessary to maintain the health of the river channel and its floodplain structure

- Improve understanding of water quality on the Nipigon River
 - Initiate water quality, zooplankton and benthos studies on the river with the goal of establishing long-term trend-over-time monitoring stations at key locations
 - Investigate the standardized sampling protocol within the scientific community. Implement this protocol on the Nipigon River
 - Investigate the possibility of developing partnerships with local anglers and boaters to collect key data on a regular basis that follow standard protocols
- Reduce the probability of exotic species introduction on the Nipigon River
 - Post signage educating the public about the importance of keeping exotics out of the Nipigon River and the correct methodology to follow (e.g. no dumping of bait buckets, washing equipment, etc). Signs will be posted at all Crown land access points
 - Educate local tourist operators and campground operators and enlist their support in the education of the public
- Improve interagency transfer of monitoring data
 - Establish communication with other agencies and Universities to ensure that any data collected is forwarded to the Nipigon District Ministry of Natural Resources. This will eliminate the duplication of data collection and contribute to improved water management
 - Establish conditions on all scientific collector's permits that data must be forwarded to the Nipigon District MNR within a specific time period

5.0 PLAN IMPLEMENTATION AND REVIEW

MNR has the lead role in implementation of this plan and is committed to keeping it current and relevant through appropriate monitoring and amendments. Plan implementation will ensure that the Environmental Assessment Act, Environmental Bill of Rights and other pertinent legislation are adhered to at all times.

Completion of the projects and activities described in this plan and any ancillary plans is dependent on the availability and allocation of funding in accordance with priorities established by the Ministry of Natural Resources and the Government of Ontario. The MNR will pursue opportunities for partnerships with other agencies and interest groups in the funding and implementation of activities and programs identified.

Operational and work plans developed to implement the direction of this resource management plan must be consistent with the objectives and strategies identified herein. Some flexibility in applying plan direction in site-specific operational situations to address biophysical circumstances and include technical expertise is recognized.

5.1 INVENTORY, MONITORING, ASSESSMENT AND REVIEW

Inventory, monitoring, assessment and review are essential to the effective implementation of this plan and are an integral part of the management strategies identified. This includes, for example, inventory and monitoring of fish and wildlife populations, vegetative communities, habitat availability and recreational use and impact. Other sources of important information include creel surveys, data gathered by the Lake Nipigon Fisheries Assessment Unit, regular consultation with the Nipigon Watershed Advisory Committee and statistics collected by the Ministry of Tourism. All of this information is necessary to ensure that plan objectives are being met and policies remain current and relevant.

5.2 PLAN REVIEW AND AMENDMENT

There is no intent to carry out a comprehensive review of the Nipigon River Conservation Reserve Resource Management Plan at any prescribed interval. Using adaptive management, the resource management policies in this document will be kept current through periodic amendments resulting from changes in government policy, new resource information or in response to public need.

Proposed amendments must not alter the overall intent of the Nipigon River Conservation Reserve Resource Management Plan. An amendment to the plan may be requested at any time and the District Manager will decide whether or not to consider it. Requests for amendments must have a basis in fact, demonstrably relate to the scope of the plan, and respond to changing resource conditions, new information, changing government policies or public need. The MNR also has the authority to initiate amendments in response to new information or changed conditions.

Amendments will be classified as either minor or major. Minor amendments are those changes that do not have a negative effect on the public, adjacent landowners or the environment and are generally administrative in nature. Minor amendments will be approved by the District Manager and will not normally be subject to public consultation.

Major amendments have a significant social, economic and/or environmental impact. Major amendments will be reviewed by the MNR District Manager and submitted to the Regional Director for approval. Public consultation will occur for all major amendments and notice of all major amendments will be posted on the EBR electronic registry.

6.0 BACKGROUND INFORMATION

6.1 INFRASTRUCTURE

The Cameron Falls Road (Highway 585) starts at Highway 11/17, west of the Town of Nipigon. It is located west of the Nipigon River, and runs north as far as Pine Portage. The road is within the conservation reserve boundaries at the Cameron Falls Generating Station, and is directly alongside the western boundary at the north end of Jessie Lake.

The Nipigon River has been well developed for hydroelectric generation. Three power generating stations are located along the river. The land is leased by Ontario Power Generation and excluded from the boundaries of the conservation reserve. Pine Portage is located at the north end of the river. Cameron Falls dam is located south of Jessie Lake. Alexander Falls Dam is the most southerly power generating station. Hydro transmission lines extend southward from the Nipigon River power facilities.

A gas pipeline, operated by TransCanada PipeLine, traverses the Nipigon River at two locations south of Alexander Falls Dam. The transcontinental Canadian National Railway (CNR) line travels through the Nipigon River Conservation Reserve. It extends north from the Town of Nipigon along the west side of the river for a short distance, crosses the river and runs along the east side of the Nipigon River. South of the Alexander Falls Dam, it leaves the conservation reserve boundaries, running northeast to the Pijitiwabik Palisades and Beardmore.

There are numerous aggregate pits used for forest access road construction, highway maintenance and other construction needs. Some of these pits fall within the boundaries of the Nipigon River Conservation Reserve. Ministry of Transportation (MTO) operates two aggregate pits in Purdom and Booth Townships on the west side of the Nipigon River.

Boat launch facilities are found at several locations along the Nipigon River, including a

TABLE 20. Description of access points located on the Nipigon River. Presence of descriptor is denoted with a checkmark (✓), absence is indicated by a blank. Location refers to the distance north from Highway 11/17 on Highway 585 (Cameron Falls Road). Boat launch refers to the presence/absence of either a cement or earthen launch site. Signage refers to a Crown Land Camping Length of Stay sign except where noted. The tenure of these sites is an estimate, and will be clarified through a land title search to be completed in 2002.

ACCESS POINT	LOCATION	BOAT LAUNCH		DOCK	FIRE PIT	PARKING	SIGNAGE	OUT-HOUSE	TENURE	OTHER
		Cement	Earthen							
1. Pine Portage (south of dam)	45	✓			✓	✓		✓	OPG private	
2. Jessie Lake (North end)	37		✓	✓	✓	✓	✓	✓	Crown	fish cleaning stations firewood storage lean-to swingset/picnic table hiking trail to the south
3. Male Creek on Jessie Lake (North Access)	34				✓	✓	✓		Crown	picnic table
4. Male Creek on Jessie Lake (South Access)	33		✓		✓	✓	✓		Crown	table / swing
5. Birch Point (on Jessie Lake)	27							Canvas covered	Crown	trail continuing to south
6. Skunk Hollow	24		✓		✓	✓		✓	OPG private	garbage storage /Trailer pads / Picnic tables
7. Bailey Bridge (South of Cameron Falls on west side)	24				✓				OPG	
8. Alexander Forebay (Frazer Creek)	23		✓		✓	Limited			OPG Private	No camping signage
9. Alexander Forebay (Point)	23		✓		✓	✓		✓	OPG	
10. Alexander Lookout	20						✓	✓	OPG	Viewing platform for Alexander Dam
11. Alexander Landing	20	✓			✓		✓		OPG Private	Exotic Species Signage Dangerous Waters and Fluctuating Water Levels Signage
12. Just north of Bailey Bridge at Purdom Creek	19								OPG	Trail access to falls
13. Parmacheene Reserve	3								Federal	

cement boat launch at Alexander Landing. Some of these access points are owned by the Crown or leased by OPG. A private cement boat launch and camping facilities are also located on the Parmacheene reserve land adjacent to the southwestern boundary of the conservation reserve. A description of each access point is listed in Table 20. Members of the public have placed additional facilities at these access points including picnic tables, fire pits, and toilet facilities.

A number of trails are found within the conservation reserve. The Split Rock Trail (see Section 6.5.5) is used as a hiking trail and runs east towards the river for 580 metres, then jaunts north along a challenging section of trail along the edge of the river overlooking Split Rock Rapids Portage and Split Rock Island. This trail provides a breathtaking view 75 metres (250 feet) above the river. In 2001, the Land of the Nipigon Waterways Development Association built a scenic lookout at Alexander Landing. This provides a view of the Alexander Dam and the Nipigon River. A short hiking trail connects the lookout with the boat launch at Alexander Landing. The Ontario Federation of Snowmobile Clubs (OFSC) Trail A between Nipigon and Geraldton crosses the Nipigon River Conservation Reserve at the Cameron Fall Dam.

6.2 ACCESS POINTS AND FACILITIES

There are twelve named access points located along the Nipigon River within the boundaries of the conservation reserve as well as a number of smaller, unnamed sites. As shown in Table 20, many of these sites are leased or owned by Ontario Power Generation (OPG), some are Crown owned, and the Parmacheene site is on Federal Reserve land. The Nipigon District MNR is currently conducting a title search to clarify the ownership of these access points. Most of these accesses have established boat launches, two of which are cement boat launches (Pine Portage and Alexander Landing). Additionally, all access points have parking areas and fire pits. As shown in Table 20, some of these access points have additional facilities established by

members of the public, including pit privies, signage and picnic tables.

6.3 CULTURAL HISTORY

6.3.1 EARLY EUROPEAN CONTACT AND THE FUR TRADE

Since the last ice age, Aboriginal people have inhabited the area around Lake Nipigon. These nomadic hunters and gatherers relied on the fish, wild plants, small game and big game (likely caribou) in the area. Trade routes were developed and expanded during these early times. Extensive exchange networks were established which stretched from the eastern seaboard to the Rocky Mountains. These routes were used for thousands of years to transport trade materials over great distances (Old Fort William 2000). These routes and the intimate knowledge the Natives had of the landscape, were the foundations upon which the historical fur trade was built.

European entrepreneurs arrived at the mouth of the Nipigon River in the early 1650s, drawn by the seemingly limitless beaver, otter, fox and muskrat associated with the Nipigon waterways (OMNR 1987). The first well-documented excursion to Lake Nipigon dates back to 1667 when Father Claude Allouez, a Jesuit Missionary, came in search of a band of Nipissing Indians who had fled southern Ontario in the wake of the Iroquois wars of 1650 (Allouez 1672).

The Hudson Bay Company was created in 1670 with the support of King Charles II of England. Company posts were established along the Hudson Bay coast and the company conducted trade by having the Natives travel to them. In order to reach the Albany River, Native traders traveled in freighter canoes constructed from white cedar, birchbark, rootlets and spruce gum (Hudson Bay Company 2002). The area around Lake Nipigon became the most profitable fur-bearing district along the north shore of Lake Superior.

The French, having lost a large portion of the trade, moved into the interior of Northern

Ontario to establish trading posts. It was more convenient for the Natives of the northern forest to trade with the French who were close by, rather than to travel the Albany River to James Bay. Consequently, trade with the Hudson's Bay company declined dramatically. Thus ensued a long battle between the English and the French for the fur trade. The Nipigon Basin was at the centre of this conflict and was the site of many fur trading posts.

These Montreal fur traders banded together in 1779 to reduce expenses and eliminate the rivalry between individual traders. The group became known as the North West Company and grew into the Hudson Bay Company's fiercest competitor (MNR 1987). In 1786, the North West Company built their first post in the Nipigon area at the mouth of the Nipigon River called Nipigon River House (Umfreville 1929). By 1800, the North West Company dominated the fur trade in northern Ontario (OMNR 2001).

The competition between the two companies resulted in the over-exploitation of the fur resources of the area. Furthermore, business expenses increased as each company struggled to outdo the other by building more posts and offering more trade goods to the Natives. Consequently, the two companies merged under the name "*Hudson Bay Company*" on March 26, 1821.

There are no historical Hudson Bay Company trading posts in the Nipigon River Conservation Reserve. However, an historical trading post was located just outside the southern portion of the conservation reserve (OMNR 2000). This HBC trading post is believed to have existed around 1895 at the north end of Lake Helen. Another post, called Red Rock House (a HBC post) was located at the mouth of the Nipigon River between 1859-1903.

6.3.2 EARLY GENTLEMEN ANGLERS

As early as 1865, gentlemen anglers were found on the Nipigon River. Between 1870 and 1880, Red Rock House, located at the mouth of the Nipigon River was at the height

of its growth and was an important outfitting station (OMNR 2001).

Anglers reached Nipigon mainly through the Campbell line of steamers on Lake Superior that stopped regularly in Nipigon (Wilson 1991). Tourists were outfitted for their trips up the Nipigon River by a Hudson Bay Company Trading Post called Red Rock House and by Clarks Trading Post, both located on the Nipigon Waterfront (Wilson 1991). For a small fee, the tourists hired a Native guide, rented a canoe and traveled up the Nipigon River to fish for the famous brook trout.

Those who fished the Nipigon met with great success. By the 1870s, word of the tremendous brook trout fishing was spreading. The famous American outdoor writer Charles Hallock (1873) wrote:

"Passengers, while waiting for the departure of the steamer, have caught within an hour or so from off the dock trout ranging from one and one half pounds to five pounds each. Of the 150 fish which we have caught, the average, by actual test, was a little above two pounds and one half pounds."

In 1887, the American Forest and Stream magazine named the Nipigon River the finest trout stream in the world. This article, and the 35 other articles published in this journal between 1873 and 1910 about the Nipigon River, served to attract crowds of wealthy and famous anglers from the United States, Canada, and Europe.

With all the publicity, and the access to the area made easy with the completion of the railroad in 1885, it was only a matter of time before the fish populations declined. A.R. MacDonough, an American sport fisherman and outdoor writer wrote:

"It is no longer possible, as it was twenty-five years ago, to take in a day, a barrel of trout averaging four pounds, nor can the angler now quickly fill his basket within sight of Red Rock landing (MacDonough 1889)".

In the final line of his article, MacDonough warns:

"Unless it is cherished, the glory of the Nipigon may fade and the story of its marvelous attractions may become a tradition of the past." (MacDonough 1889).

The number of tourists swelled and the costs for outfitting and guides increased. In 1901, landings, improved portages and trails to fishing pools were constructed between Lake Nipigon and Camp Alexander on the Nipigon River (Anon. 1912).

In 1898, the federal Department of Marine and Fisheries relinquished their control over the inland rivers and lakes in Ontario. Ontario responded by forming a new Fisheries Branch. In the early 1900s, the Fisheries Branch received reports that the average size of fish had declined and that the fish were not as numerous. Consequently, the new Fisheries Branch singled out Lake Nipigon and the Nipigon River for special protection through a set of separate fishery regulations that were published alongside the regular Ontario fishery laws in an appendix to their 1899 Fishing and Shooting along the lines of the Canadian Pacific Railway (CPR 1899 ci Thoms 1995). These regulations required anglers wanting to fish the Nipigon River, to purchase special five to twenty-five dollar permits (Thoms 1995).

Despite the noticeable decline in the Nipigon River fishery, the tourists continued to arrive in Nipigon and the overseers reported steady increases in revenues collected from resident and non-resident anglers. In 1902, Overseer McKirdy estimated that, although only \$1095 was spent on permits, \$10,000 was spent in Nipigon on guides and supplies (Fisheries Branch 1902).

From the revenue generated from the fishing permits rangers were employed to work on the river. By 1912, as many as eight rangers were employed on the Nipigon River to keep the portages clear, provide well-situated landing sites and numerous convenient camping sites (Game and Fisheries Commission 1912).

While the fishing had declined, by world standards the Nipigon River was still a high

quality angling destination. Distinguished visitors continued to descend on the area (Swainson 2001a). In 1913, a New York Herald journalist inspected the Nipigon overseer's license registry and reported *"few towns of its size in the world have sheltered so many of earth's distinguished ones"* (Anon. 1913).

In 1915 a world record was set when a brook trout was caught at Rabbit Rapids on the Nipigon River. Dr. J.W. Cook of Fort William, Ontario, caught a 6.58kg (14.5lbs) brook trout with a live minnow. This record has yet to be broken and of course served to enhance the legendary appeal of the *"Nepigon"*. This prompted a royal visit in 1919 from Edward, Prince of Wales and heir to the British Throne, who became King Edward the VIII. Ten British noblemen accompanied the Prince on his first visit to Canada, along with an entourage of attendants, journalists and photographers (Whalen 1998).

While the degradation of the fishing stocks was severe, it was insignificant compared to what was to come. A.W.G. Wilson from the Ontario Department of Mines proclaimed in 1910 *"The water-powers of the Nipigon River will be of more local importance, when utilized, as they are probably one of the largest and best of the more readily accessible undeveloped water-powers in Canada"* (Wilson 1910).

From the 1960s to the 1980s, brook trout on the river became increasingly rare, although the Nipigon continued to routinely produce 5 to 8 pound winning entries for the Field and Stream and the Ontario Federation of Anglers and Hunters (OFAH) Big Fish Contests each year (Wilson 1991).

Chinook and pink salmon were observed in the lower Nipigon River by 1976 and became plentiful by the late 1980s. According to creel surveys conducted in the late 1980s and early 1990s, rainbow trout and salmon became the most sought after species in the lower river, while lake trout and brook trout were popular in the upper portions (Kushnier 1995).

6.3.3 THE RAILWAY

In the spring of 1871, Sanford Fleming, Chief Engineer of government surveys for the proposed Pacific Railway, sent a party of surveyors to the Nipigon region. Their mission was to locate a practical route for a railway running east to west from a point about 32 kilometers north of Lake Nipigon (Todd 1977). At that time, running a rail line along the rocky northern shores of Lake Superior was not considered feasible (OMNR 2001).

The Canadian Pacific Railway was built through the Nipigon region from 1883-1885. Nipigon town site and the river were important links in the supply route from Lake Superior to the railway location. This section of the Canadian Pacific was among the most difficult and expensive to complete due to the rocky and rugged topography (OMNR 2001).

A second transcontinental line was deemed necessary to deal with the increasing occupation and economic activity in western Canada. This line was to run north of the Canadian Pacific from Quebec to Vancouver (Todd 1977). Government survey crews selected a route north of Lake Nipigon. Transporting equipment and supplies into this remote northern location proved to be a difficult task. Horse and dog teams were used to haul supplies to various construction sites. In the summer, the Nipigon water route was used. The problem of portaging supplies around the Nipigon River was resolved in 1908 by building an eighteen mile long 3-foot gauge tramway along the Nipigon River called the Nipigon Tramway (Todd 1977).

This tramway ran 3 miles west of the river from Alexander Landing to South Bay on Lake Nipigon. At Lake Nipigon, the supplies were transported north by steamer.

No sooner had construction on the National Transcontinental begun than the intention to build a Pacific and eastern extension to the railway, creating a third Trans-Canada railway was announced. After running along the Nipigon River, the line crossed and turned northeast along the shore of Orient Bay. The

construction of this railway was completed in 1914 and transcontinental service for passengers began to move along this line in 1915.

6.3.4 THE LOG DRIVE

The construction of the Canadian Pacific Railway through the Nipigon area between 1883 and 1885 required extensive use of forest resources. Thousands of axe-made ties were taken from within and adjacent to the right-of-way. A similar demand for ties occurred with the construction of the National Transcontinental Railway in 1908-1910 and the Canadian Northern Railway in 1913-1915.

The first attempt to drive logs down any part of the Nipigon River was made by James Whalen in 1900. At this time, prior to the dam construction, the river was very rough and proved to be a challenge. Karas (1997) describes the river of the past.

“It was composed of a large river that varied in width from 50 to 200 yards, with a voluminous flow of water; 5500 cu. feet per second. In its 32-mile southerly course from Lake Nipigon, it once descended 313 feet over 15 well-accelerated rapids and seven waterfalls, losing its identity only temporarily when it flowed through four lakes. It has been described as having three ecologies: 10 miles of lakes, 10 miles of river, and 10 miles of rapids.”

Log jams often occurred on sections of the river between Alexander Falls and Jessie Lake. Whalen established camps along the Nipigon River. Pine logs were cut along the river and driven down to Nipigon. Whalen's operation continued until 1907. Full log drive started again on the Nipigon River in 1923 after the construction of the Cameron Falls dam and continued until 1973.

All the log boom towing on the Nipigon River was done by Abitibi Power and Paper Company. Abitibi held the rights to the river drive and their employees carried out the drives. Companies paid Abitibi an annual toll that was based on the amount of wood they

expected to move and on Abitibi's estimate of expenses. There were 2-6 different companies operating log drives from ice out to late September. Wood was towed in booms of up to 7,000 cords each to Virgin Falls. The annual volume was between 200,000 and 400,000 cords.

The release of the boom into the river was controlled by opening the boom with a winch (Mutch 1991). Once the logs were "*spilled*", river crews kept them moving down the river to Lake Superior. A single drive took a month from the time wood was spilled above Virgin Falls until it cleared Lake Helen. Company records show that the number of drives ranged from a high of 10 in 1942 to two in 1971 with an average of five drives a year (Mutch 1991).

Approximately 100 workers were required to handle the logs. These workers were predominantly French Canadians and First Nations with a few Finnish and Swedish workers (Mutch 1991).

The main drive camp was located above MacDonald's Rapids. There were four other camps located further downstream to house the men who worked the lower stretches of the Nipigon River. These camps were located at strategic points along the Nipigon River including Virgin Falls, Pine Portage, Cameron Falls, and Lake Helen. They were all linked by short-wave radio, by which the Drive Supervisor got reports and gave orders (Mutch 1991).

The river was divided into sections, with the wood from any one drive (i.e. the wood of one particular company) being confined to one section at a time. Once it was in a given section of the river, that area would be closed at both ends with booms, so that some other company's wood could be released into the section above. Logs were stored in Lake Hannah above White Chutes, above the dams at Pine Portage and Cameron Falls (at the south end of the Lake Jessie) and to a limited extent above Alexander Falls. Pine Portage and Alexander Falls dams had control booms and lug chutes; Cameron Falls had no chutes;

the movement of wood was controlled by stop logs (Mutch 1991).

Once the drive moved through each section of the river, the boom was closed and the river was "*reared*" up to release any wood that was held within that section. If water levels had been lowered while the logs were being driven down a section, Hydro would restore it to its original level to facilitate the rearing effort. This might mean high water levels were restored for two or three days at a time, then returned to the lower levels before the next phase of the drive was begun (Mutch 1991).

6.3.5 HYDRO DEVELOPMENT

The Nipigon River has been significantly altered from its original state by the construction of four waterpower dams (Swainson 2002b). Hydro development was initiated on the Nipigon River in 1918 with the construction of the Cameron Falls Hydro Dam. It backed up water on the Nipigon River 23 metres (75 feet), creating a new East Arm, flooding out the Narrows, Cedar Rapids, Split Rock Rapids Portage and extending Jessie Lake over the former basin of Lake Maria (HEPC 1926).

In 1926 came the construction of the Virgin Falls dam, built to control water levels in Lake Nipigon and to "*enable the total flow of the Nipigon River to be utilized for power development as the load requires it*" (HEPC 1927). This created the largest storage reservoir in existence (HEPC 1931) and raised Lake Nipigon by 15 centimetres (0.48 feet). A dam was required to be built at the end of Black Sturgeon Bay on Lake Nipigon to stop spillage into Black Sturgeon Lake (Swainson 2001b).

In 1930, with the increasing demand for power from Thunder Bay due to new pulp and paper mills, grain elevator construction and the associated increase in population, the next development was built at Camp Alexander, 2.4 kilometres downstream from the Cameron Falls Dam. The Alexander Dam raised the water levels by 18.5 metres (60 feet) and flooded out the 2.4 km of white

water called Long Rapids from Alexander Falls upstream to the existing Cameron Falls Dam. This dam had both control booms and a log chute to facilitate the log drive (Swainson 2001b).

Through a 1940 agreement with the United States, approval was given to Canada “to utilize immediately for the increase of power output at Niagara for war purposes, an additional flow of water equivalent to that which will be added to the Great Lakes as a result of diverting water from portions of the Albany Watershed...” (HEPC 1941). This led to the construction of the Ogoki River Diversion which sent water south into Lake Nipigon. In 1942, the Hydro-Electric Power Commission (HEPC) promised the diversion will “increase the power resources of Southern Ontario and Quebec and improve levels of the Great Lakes for the benefit of Canada and the United States” (HEPC 1942).

The Waboose Dam was built on the Ogoki River in 1942. This flooded the waters back to the height of land where a channel was created to allow the water to flow south. The Summit Control Dam was built across this channel. From this dam, the water flows through a series of lakes into the Little Jackfish River to Lake Nipigon and subsequently down the Nipigon River (Near 1982).

The Ogoki diversion increased the Lake Nipigon level by 35 centimetres and increased the flows by 50% in the Nipigon River. The two existing generating plants on the river could not use this water efficiently, which in turn led to the construction of Pine Portage Dam (Swainson 2001b).

The completion of the Pine Portage Dam in 1950 raised the water level on the Nipigon River by 31 metres (100 feet) and flooded out almost 16 kilometres of white water, rapids and waterfalls including the White Chutes, Victoria, Canal, Devil, Rabbit and Miner’s Rapids. Lake Emma and Hannah were both flooded out and the whole area was renamed Forgan Lake (Swainson 2001b).

Pine Portage cost approximately \$26,300,000 for the generation and step-up transformation. Approximately 1,300 men were involved in the construction. These workers were accommodated with dormitories, a hospital, school, post office, and recreation hall. After construction was completed, many of these structures were moved into the Town of Nipigon. While the river was used in transportation of materials during the initial stages, eventually the Cameron Falls Road was built. The total length of the dam spans 3,000 feet and has a maximum height of 140 feet. The Pine Portage Dam raised the Lake Nipigon water level by 12 cm, flooding over the Virgin Falls Dam (Near 1982).

From the 1940s until the 1960s, in an attempt to control black flies, the streams within a five-mile radius of the community of Cameron Falls were poisoned with DDT on a twice-weekly basis during black fly season (Swainson 2001a). The devastating impacts of DDT on aquatic life and fish and its cumulative bioconcentration effects on the food chain have been well-documented.

Water level fluctuations were at times severe between the late 1960s and late 1980s, varying by as much as 3 metres every day. It was believed that this drawdown was destroying brook trout spawning beds, but it was not until April of 1990 that it was proven when exposed spawning beds with dead stranded brook trout fry were found by MNR staff. Also that same year, fluctuating water levels and other factors triggered a major landslide that dumped tons of sediment into the river. Flow testing followed and by the fall of 1990, an interim flow agreement was struck with Ontario Hydro (now Ontario Power Generation) to maintain water over the spawning beds throughout the fall and winter brook trout incubation periods (Atria 1994).

By 1994, a long-term Nipigon River Water Management Strategy was developed. From this strategy, an Operating Plan to guide the day to day dam operations was developed and released to the public in 2001 (Swainson 2001a).

Today, all three of the Nipigon River generating stations are operated by Ontario Power Generation (OPG). Alexander Dam has a capacity of 67.5 mega watts (MW) and in 200 produced 522 giga watt hours (GWh) valued at \$21 million. Cameron Falls Dam has a capacity of 75 MW and in 2000 produced 643 GWh valued at \$26 million. Pine Portage Dam has a capacity of 128.7 MW and in 2000 generated 979 GWh, valued at \$39 million (Crawford 2001). In 2000, total value of the Nipigon River production was \$86 million.

6.4 NATURAL ENVIRONMENT AND RESOURCES

6.4.1 EARTH SCIENCES

The Nipigon River Conservation Reserve lies within the James Bay Region of the Precambrian Shield (Bostock 1972 ci Mollard & Mollard 1981), a large bedrock dominated plain consisting of Precambrian crystalline igneous and metamorphic rocks with a small number of occurrences of sedimentary rocks.

The Nipigon Plain physiographic region is a flat-lying region that surrounds Lake Nipigon and consists of Early Precambrian metasediments and metavolcanic and Late Precambrian mafic sills. The Nipigon River dissects this plain which ends at the north end of Jessie Lake. These sills stand out as flat hills with near vertical southern boundaries and extensive talus slopes (Mollard & Mollard 1981).

South of the Nipigon Plain, the Severn Upland physiographic region is underlain by early Precambrian (Archean) crystalline rocks, characterized by a broadly rolling topography (Mollard & Mollard 1981). These areas are covered by glacial and post-glacial deposits. Generally, these areas are thinnest to the north, increasing in depth to the south.

The diabase sills of the northern most section of the Nipigon River are thinly covered with silty to sandy till (Zoltai 1965) with organic deposits in a few low-lying depressions. Talus slopes are common in the river valley,

especially along the eastern side. Below the escarpment that rises above Jessie Lake, the till remains shallow. Consequently, a few extensive areas of exposed bedrock tablelands are present along the eastern edge of Jessie Lake (Gore and Storrie Ltd. 1994).

The thickness of overburden increases in the vicinity of Cameron Falls and Alexander dams. In this area, the lacustrine deposits of clay and silt line the broad spillway channel where the river now flows through Lake Helen. The eastern shore of Lake Helen consists of mountainous bedrock formations, while the western shore is lower, more gently rolling bedrock overlain with silty to sandy till (Zoltai 1965).

6.4.2 VEGETATION COMMUNITIES

6.4.2.1 Wetlands

Wetland communities are located along the Nipigon River, including marsh, fens, bogs, and swamps. These isolated communities make up less than 0.5% of the total area of the conservation reserve (North-South Environmental Inc. 2001).

Marshes

Marshes are open wetland communities dominated by herbaceous emergents such as sedges, grasses, cattails and reeds or low shrubs (OMNR 1993). Within the conservation reserve, marshes are found along the river delta emptying into Lake Helen. They are also locally developed throughout the river in sheltered embayments and creek inlets (Gore and Storrie Ltd. 1994).

These communities tend to exhibit strong patterns of zonation, where the dominance of species changes visibly in relation to water depth. This phenomena is especially noticeable in areas with shallow gradients. The marshes along the Nipigon River and in the Lake Helen delta exhibit the following zonation pattern. Water horsetail (*Equisetum fluviatile*) usually occurs in the deepest waters, followed by creeping spike-rush (*Eleocharis palustris*) closer to the shore. Those species in turn are replaced by float grass (*Glyceria borealis*), water sedge (*Carex*

aquatilis), beaked sedge (*Carex utriculata*) and finally Canada bluejoint (*Calamagrostis canadensis*) and redtop (*Agrostis gigantea*) on the driest wetland areas. Deep areas with strong currents support stands of rushes (*Scirpus* spp.) (Gore and Storrie Ltd. 1994).

A number of interesting species are located in these marsh communities, including calciphiles such as Buxbaum's sedge (*Carex buxbaumii*), purple-stemmed gentian (*Gentiana linearis* var. *latifolia*) and greater arrow-grass (*Triglochin maritimum*) (Gore and Storrie Ltd. 1994).

Gore and Storrie Ltd. (1994) identified a marsh community, located along a creek 3.5 km south of Pine Portage. A "beaver meadow" has developed on the exposed bed of an old beaver pond. This area is dominated by blue-joint. A number of species found at this site were not identified elsewhere during the reconnaissance survey of the Nipigon River, including flat-leaved bladderwort (*Utricularia intermedia*), swamp loosestrife (*Lysimachia terrestris*) and St. John's-Wort (*Hypericum majus*).

Fens

Along the Nipigon River, fens are not a common vegetative community. They develop on organic soils. While most fens are in contact with mineral-rich groundwater (minerotrophic), other fens are weakly minerotrophic with a floristic composition and structure similar to ombrotrophic bogs (acid peatlands not in contact with mineralized groundwater), including a prevalent groundcover of Sphagnum spp. moss (Gore and Storrie Ltd. 1994).

An open graminoid-dominated floating fen is found close to the east shore of the west arm of Jessie Lake. A weakly minerotrophic fen is located where a lowland area drains into Jessie Lake. The lowest, wettest areas support a substrate of brown mosses. Elsewhere, Sphagnum spp. mosses are established on drier hummocks, which form acidic microhabitats. Dominant species include sedges such as lesser panicled sedge (*Carex diandra*), bog sedge (*Carex paupercula*) and

little prickly sedge (*Carex echinata*). Other common species are bog goldenrod (*Solidago uliginosa*), bog Solomon's-seal (*Smilicina trifolia*) and willows (*Salix lucida* var. *intosa*; *Salix bebbiana*). Small stunted black spruce (*Picea mariana*) and other trees occur as scattered individuals throughout (Gore and Storrie Ltd. 1994).

A number of species are present which are considered to be strict fen indicators. These include arrow-grass (*Scheuchzeria palustris*), Hudsonian club rush (*Scirpus hudsonianus*), sage-leaved willow (*Salix candida*), bog buckbean (*Menyanthes trifoliata*), mountain fly honeysuckle (*Lonicera villosa*) and bog goldenrod. A number of species are found both in bogs and fens, including tamarack (*Larix laricina*), black spruce, round-leaved sundew (*Drosera rotundifolia*), bog-laurel (*Kalmia polifolia*) and labrador tea (*Ledum groenlandicum*) (Gore and Storrie Ltd. 1994).

Bogs

Bogs are acidic, nutrient poor peatlands which support a distinctive vegetation characterized by a substrate of Sphagnum spp. moss with ericaceous shrubs, sedges, and coniferous species such as black spruce (Damman & French 1987). Only a small portion of one bog community, located on the west side of the river near Split Rock, occurs within the Nipigon River Conservation Reserve (Gore and Storrie Ltd. 1994).

A ground layer of Sphagnum spp. moss, leatherleaf (*Chamaedaphne calyculata*) and sedges (*Carex leptalea*; *Carex oligosperma*; *Carex trisperma*; and *Carex pauciflora*) dominate most of the bog. The large central area of the bog is treed with stunted black spruce. Present are three strict bog indicator plant species (few-seeded sedge [*Carex oligosperma*]; few flowered sedge [*Carex pauciflora*]; and hare's-tail [*Eriophorum spissum*]), two strict fen indicators species (buckbean; goldenrod), and nine species which typically occur in both (black spruce; three-fruited sedge [*Carex trisperma*]; dwarf birch [*Betula pumila*]; pitcherland [*Sarracenia purpurea*]; round-leaved sundew; bog rosemary [*Andromeda glaucophylla*];

leatherleaf; sheep-laurel [*Kalmia angustifolia*]; bog laurel; and labrador tea). Consequently, it appears likely that this community is not truly ombrotrophic (receiving only atmospheric water and nutrients) and is therefore intermediate between a bog and fen (Gore and Storrie Ltd. 1994).

Swamps

Swamps are wooded wetlands that develop on peat soils that receive mineral groundwater. Substrate moisture varies from wet to wet-mesic and dry to mesic in mid-summer. Most of the swamps located along the length of the Nipigon river are dominated by a mixture of deciduous and coniferous species, including black spruce, white cedar, balsam fir, balsam poplar (*Populus balsamifera*) and willows. Also included in this community type are shrub swamps or thickets, which are dominated by willows and alders. These occur in small areas along the upper Nipigon River and in the vicinity of the river delta emptying into Lake Helen (Gore and Storrie Ltd. 1994).

The understory vegetation varies from areas with sparse sedges under dense thicket and tree canopies, to open canopy areas with a well-developed understory of shrubs, herbs, graminoids, and mosses. Common species include marsh fern (*Thelypteris palustris*), bluejoint, beaked sedge, speckled alder, red-osier dogwood, marsh marigold, dwarf raspberry (*Rubus pubescens*) and purple-stemmed aster (*Aster puniceus*) (Gore and Storrie Ltd. 1994).

Black spruce swamps are located within the conservation reserve near the north end of Jessie Lake on both sides of the river, in addition to the west side of the river just north of the river delta into Lake Helen. While this swamp type is strongly dominated by black spruce, other species such as balsam fir and white birch may also be present. Site moisture conditions are wet to wet-mesic. These swamps develop on organic soils overlying glaciolacustrine clay soils. The groundlayer consists of *Sphagnum* spp. moss and feather moss (*Pleurozium schreberi*).

Common understory species include soft-leaved sedge (*Carex disperma*), sheathed sedge (*Carex vaginata*), bluebead lily (*Clintonia borealis*), naked mitrewort (*Mitella nuda*), bog Solomon's-seal, and low blueberry (*Vaccinium angustifolium*). At the wooded edge and along openings, shrubs such as green alder (*Alnus viridis* spp. *crispa*) are established (Gore and Storrie Ltd. 1994).

6.4.2.2 Forest

Coniferous forests dominated by black spruce and/or white spruce are developed on a wide range of site types, varying from mesic sites overlying glaciolacustrine clay soils to areas of thin soil overlying bedrock. Other tree species present include balsam fir, birch and jack pine. On sites with deeper soils, the understory vegetation is abundant and diverse. The rocky sites have a poor herbaceous understory. Both the mesic and dry sites frequently have an extensive groundlayer of feather moss, with local areas of *Sphagnum* spp. The most abundant herbaceous species are the common boreal elements that include bunchberry (*Cornus canadensis*), bluebead lily, starflower (*Trientalis borealis*), wild lily-of-the-valley (*Maianthemum canadense*) and club-mosses (*Lycopodium* spp.). Other shared dominants include labrador tea, blueberry (*Vaccinium* spp.), twinflower, prickly wild rose and creeping snowberry (*Gaultheria hispidula*) (Gore and Storrie Ltd. 1994).

Mixed coniferous-deciduous forest on deep (>1 metre) soils are found predominately along the southern portion of the Nipigon River where ground moraines, glaciolacustrine plains and eskers form deep soils. As a result of the nutrient rich conditions and the high productivity of these sites, these forests are floristically the most diverse vegetation types found along the river (Gore and Storrie Ltd. 1994).

These mixed forests represent a mid-successional phase on deep, fine-textured soils. They are intermediate between early successional deciduous forests of balsam poplar (*Populus balsamifera*) and trembling aspen (*Populus tremuloides*) and later stages

dominated by balsam fir and other conifer species (Gore and Storrie Ltd. 1994).

Principle canopy species include balsam fir, trembling aspen, white spruce, black spruce, balsam fir, and jack pine (*Pinus banksiana*). Although formerly a dominant, balsam fir has been largely removed as an overstory dominant through spruce budworm mortality. However this species remains dominant in the reproductive layer as saplings (Gore and Storrie Ltd. 1994). The understory vegetation in these stands is variable, ranging from open to densely shrubbed. Typical shrubs include red-osier dogwood (*Cornus stolonifera*), mooseberry (*Viburnum edula*), mountain maple (*Acer spicatum*), mountain ash (*Sorbus decora*) and bush honeysuckle (*Diervilla lonicera*). Common groundlayer species include the bigleaf aster (*Aster macrophyllus*), bunchberry, starflower, wild lily-of-the-valley, bluebead lily, naked mitrewort, club-mosses and wild sarsaparilla (*Aralia nudicaulis*) (Gore and Storrie Ltd. 1994).

Mixed deciduous-coniferous forests also develop on bedrock areas with shallow soil. These sites are extensive along the steep slopes and tops of the diabase mesas north of Jessie Lake at the mouth of the river, as well as on bedrock islands in the river. The principle tree species are the same as those of mixed forests on deeper soils, largely white spruce, black spruce, trembling aspen and white cedar. However, other species such as white pine (*Pinus strobus*) and jack pine are prominent on the shallow soils and are largely absent from mixed forests on deep soils (Gore and Storrie Ltd. 1994).

Gore and Storrie Ltd. (1994) documented an exceptionally large white spruce near Split Rock that was determined to be approximately 120 years old and measured 27 metres in height and 46 cm diameter at breast height (d.b.h). This would date its establishment to approximately 1873, likely predating the earliest logging period (1883 – 1885) when axe-made ties were needed for the construction of the CPR through the Nipigon area. The understory vegetation in these stands is composed of very little herbaceous vegetation with mosses forming

the prominent groundlayer. The most abundant mosses are feather moss, step-moss (*Hylocomnium splendens*) and Sphagnum spp. The herbs present are common species such as bunchberry, starflower, bluebead lily, wild lily-of-the-valley, club-mosses and blueberry (Gore and Storrie Ltd. 1994).

Deciduous forests along the Nipigon River are predominately on sites with deep soils. These forests typically represent the early stages of forest succession. Dominant overstory tree species include trembling aspen, balsam poplar and white birch. Forests dominated by trembling aspen and especially balsam poplar, are located closest to the river. The older deciduous stands usually have a pronounced understory of shade-tolerant balsam fir (Gore and Storrie Ltd. 1994).

These forests are generally species-rich. In addition to typical understory species such as bunchberry, bluebead lily, starflower, wild lily-of-the-valley, bigleaf aster and wild sarsaparilla, a number of species requiring rich mesic habitats are also found. These include bladder sedge (*Carex intumescens*), two-edged sedge (*Carex leptoneurva*), nodding trillium (*Trillium cernuum*) and wild ginger (*Asarum canadense*) (Gore and Storrie Ltd. 1994).

Along the Nipigon River, these communities develop following natural and anthropogenic (human-induced) caused disturbances. Natural disturbances include forest fire, windthrow, tornadoes, felling by beaver, pathogens and insect infestations. Anthropogenic disturbances in the study area are mostly harvesting (both clearcutting and selective logging) and clearing but also include herbicide application and mowing. Another disturbance which is natural but appears augmented by human activity (fluctuating water levels by hydro) is bank erosion and failure (Gore and Storrie Ltd. 1994).

Old fields and roadsides represent the communities that are the most disturbed. In addition to native species of open habitat and pioneers species, introduced species from Eurasia are also established in these areas.

Examples of native species which are prominent in these communities are field horsetail (*Equisetum arvense*), bracken fern (*Pteridium aquilinum*), bluejoint, poverty grass (*Danthonia spicata*), willow, speckled alder, tall meadow-rue (*Thalictrum dasycarpum*), common strawberry (*Fragaria virginiana*), red raspberry, fireweed (*Epilobium angustifolium*), cow parsnip (*Heracleum maximum*), sagewood wormwood (*Artemisia campestris*), pearly everlasting (*Anaphalis margaritacea*), Joe-pye-weed and Canada goldenrod (*Solidago canadensis*). Introduced species include quack grass (*Agropyron repens*), awnless brome (*Bromus inermis*), timothy (*Pbleum pratense*), curled dock (*Rumex crispus*), common buttercup (*Ranunculus acris*), many legumes (eg. Sweet clover [*Melilotus spp.*], birdsfoot trefoil [*Lotus corniculatus*] etc.), butter and eggs (*Linaria vulgaris*), common plantain (*Plantago major*), yellow rattle (*Rhinanthus minor*), ox-eye daisy (*Chrysanthemum laucanthemum*), Canada thistle (*Cirsium arvense*), orange hawkweed (*Hieracium aurantiacum*) and common dandelion (*Taraxacum officinale*) (Gore and Storrie Ltd. 1994).

6.4.2.3 Rock Barrens/ Cliffs/ Talus Slopes

The northern portion of the Nipigon River consists of bedrock shallowly overlain by till soils. In some places the dominant substrate is exposed bedrock with soil and vegetation scattered in the crevices. The physiological stress caused by either drought or moisture saturation where the water pools, is an important process that determines the formation of vegetation (Gore and Storrie Ltd. 1994).

The poor productivity of these sites results in conifer trees (mainly white pine and white spruce) with large diameters and heights of less than 25 metres. A white spruce was measured to be 46 cm dbh, 23 metres in height and aged at 124 years.

A similar sized white pine was 109 years old. Other tree species include white birch and trembling aspen (Gore and Storrie Ltd. 1994).

Shrubs which are abundant here include upland willow (*Salix humilis*), chokeberry and oblong-fruited juneberry (*Amelanchier bartramiana*).

Mosses are prominent in the groundlayer, forming carpets in which herbaceous species take root. In dry areas, feather moss (*Pleurozium schreberi*) is the dominant species with Sphagnum spp. mosses usually found in wet depressions. The most abundant graminoid in dry places is tickle grass (*Agrostis scabra*), which covers extensive areas with a pink hue. Other common graminoids are common hairgrass (*Deschampsia flexuosa*), poverty grass, and bronze sedge (*Carex aenea*). The herbs which are most common are typical boreal species such as bluebead lily, starflower, wild-lily of the valley and low blueberry. Wet depressions support a thick layer of Sphagnum spp. moss and shrubs such as willows and green alder (*Alnus viridis spp. crispus*). Graminoids are also prominent in these, including wood-grass (*Scirpus cyperinus*), bluejoint and tufted hairgrass (Gore and Storrie Ltd. 1994).

One species which is generally restricted to rockland vegetative communities is moccasin flower (*Cypripedium acaule*). Other species which were found only in rockland areas include bronze sedge, bristly wild gooseberry (*Ribes oxycanthoides*), bristly sarsaparilla (*Aralia hispida*), Canada hawkweed (*Hieracium canadense*) and hairy goldenrod (*Solidago hispida*) (Gore and Storrie Ltd. 1994).

Cliffs and talus slopes are found predominantly along the northern section of the Nipigon River. Steep cliffs also occur along the mouth of the Nipigon River. Steep slopes with some small local areas of talus are present along the east bank of the bank of the river between Jessie and Lake Helen. These exposed rock environments present a challenge to plant growth (Gore and Storrie Ltd. 1994).

Along cliffs, vascular plants are generally restricted to the few sites where soil has been able to accumulate, including ledges, cracks

and rock crevices. Species composition is variable. In places where there is a sufficient accumulation of soil and moisture, trees such as white birch, white cedar, and black spruce may grow. Often their form is stunted (Gore and Storrie Ltd. 1994).

Shrubs such as common juniper (*Juniperus communis*) are typically found in these sites. Other common native species found in these environments include; ferns such as rusty woodsia (*Woodsia ilvensis*) and bladder fern (*Cystopteris bulbifera*); herbs such as harebell (*Campanula rotundifolia*), rock cress (*Arabis divaricarpa*), pink corydalis (*Corydalis sempervirens*) and early saxifrage (*Saxifraga virginensis*); and graminoids, including umbel-like sedge (*Carex umbellata*) and Canada bluejoint (*Poa compressa*). Nearer the water, trisetum (*Trisetum spicatum*) can be found. Most of the common boreal species are also established in cliff habitats. A number of introduced species are also present on the cliffs. These include hard fescue (*Festuca brevifolia*), quack grass (*Agropyron repens*), white sweet clover, and ox-eye daisy (Gore and Storrie Ltd. 1994).

Talus communities usually have even less soil especially those composed of coarse boulders, where soil particles fail to accumulate since they fall through the interstices. These talus areas are dominated by lichens and mosses. Typical lichen genera include rock tripe

(*Umbilicaria* spp.), veined lichens (*Peltigera* spp.) and reindeer moss (*Cladonia* spp.). Mosses include *Grimmia* spp., *Hedwigia* sp., and feather moss (*Pleurozium schreberi*). Some vascular plants are also present. There are usually ferns such as rusty woodsia, rock polypody (*Polypodium virginianum*) and more rarely scented fern (*Dryopteris fragrans*) (Gore and Storrie Ltd. 1994).

6.4.2.4 Beaches

Dry sandy beaches occur locally along some areas of shoreline. Extensive sand and gravel flats are occasionally present in the embayment south of Alexander during low water conditions. Frequently these habitats are disturbed by waves, high water and winds resulting in the removal or deposition of sands. These dynamic communities consist of pioneer species as well as species adapted to frequent flooding and erosions. Furthermore, the species composition can change annually and even seasonally, on the basis of storm events, chance dispersal, high water levels, etc.

Species generally restricted to sandy or gravelly shores are toad rush (*Juncus bufonius*), silverweed (*Potentilla anserina*) and creeping spearwort (*Ranuncular reptans*). Numerous common pioneering species are also established, such as Canada goldenrod (*Solidago canadensis*), balsam

TABLE 21. Arctic-alpine disjunct native, vascular plant species documented for the Nipigon River Conservation Reserve (C2238) listed in taxonomical order. Nomenclature follows Newmaster et al. (1998). Source for arctic status is Gore and Storrie Ltd. 1994)

SCIENTIFIC NAME	HABITAT	COMMON NAME	SOURCE	
			Gore and Storrie Ltd (1993)	Thunder Bay Field Naturalists (1998)
<i>Lycopodium selago</i>		Mountain Club-moss	✓	
<i>Dryopteris fragrans</i> (L.) Schott	moist crevices in talus boulders	Scented Fern		✓
<i>Trisetum spicatum</i>	Rock crevices and rocky shores	Narrow False Oats		✓

poplar seedlings (*Populus balsamifera*) and bluejoint grass (Gore and Storrie Ltd. 1994).

6.4.3 SIGNIFICANT FLORA

Gore and Storrie Ltd. (1994) reported a total of 359 vegetative species during their reconnaissance survey of a 300 metre buffer along the Nipigon River. Of these, 314 (87.5%) are native species and 45 (12.5%) are introduced, having their origin elsewhere in Eurasia or other parts of North America. These figures indicate a relatively intact flora with a high percentage of native species.

Gore and Storrie Ltd. (1994) reported three species present in the Nipigon River Conservation Reserve (as shown in Table 21) which are considered to be arctic-alpine species: mountain club moss (*Lycopodium selago* spp. *Selago*), scented fern (*Dryopteris fragrans*) and trisetum (*Trisetum spicatum* spp. *pilosiglume*). The presence of these species is of considerable interest from a scientific perspective. Examination of the pattern of distribution of these species and their associated communities supplies an indication of unique local microclimates in addition to their post-glacial migration pathways. These species were distributed south of the margin of the Wisconsin glacier which covered the area 12,000 years before present. When the ice receded, the distribution of these species shifted, and followed the glacial retreat. In areas with an appropriate cooler-than normal microclimate, such as the Lake Superior shoreline, and deep shaded canyons, these plants persisted.

Mountain club-moss was found at the north end of the river along the south edge of the beaver meadow which feeds the first stream south of Pine Portage along the west side of the river. It was growing in a shaded site where rocky upland meets the organic soils of the meadow. Scented fern is present along the talus slope at the base of the escarpment at the north of the river, where the escarpment turns away from the river to the east and west. Found on the east bank, it is likely scattered on much of the talus areas.

Trisetum has been found at two locations and is suspected at many more. Both sites were rocky cliffs and ledges near the water. One was located at the mouth of the river on cliffs of the east side and the other on the first island south of Pine Portage.

North-South Environmental Inc. (2001) documents several regionally significant, native vascular plants species for the Nipigon River. These are listed in taxonomic order in Table 22. There are likely others located within the Nipigon River Conservation Reserve that have yet to be specifically located within the conservation reserve.

Gore and Storrie (1994) reported that based on label data from the rare vascular plants of Ontario database held by the National Museum of Natural Science, two provincially rare plants were allegedly collected from the study area: blue wild-rye (*Elymus glaucus*) and heart-leaved Alexanders (*Zizia aptera*). Blue-wild-rye was collected by the great botanist John Macoun on July 22, 1884, “along streams; Pine Portage; Nipigon River”. Presently, there is only one stream in this vicinity, about 3.5 km to the south of the dam, and a thorough search along its length, and the beaver meadow at its headwaters failed to detect it. Gore and Storrie Ltd. (1994) suggest that the area from whence it was collected now forms the bottom of Forgan Lake. Other provincially rare species which have apparently been collected from the study area include smooth woodsia (*Woodsia glabella*) and alpine woodsia (*Woodsia alpina*).

6.4.4 BIRDS

Gore and Storrie Ltd. (1994) reported 159 species of birds recorded within a 300 metre buffer along the Nipigon River stretching from Forgan Lake to the mouth of the Nipigon River at Nipigon Bay. That area is larger than the conservation reserve boundaries. Significant bird breeding habitat such as the marsh at the mouth of the Nipigon River south of the Town of Nipigon that is outside of the conservation reserve boundaries, was counted by Gore and Storrie Ltd. (1994). North-South Environmental (2001) reported

TABLE 22. Regionally significant native, vascular plant species documented for the Nipigon River listed in taxonomical order. Nomenclature follows Newmaster et al. (1998). Regional status is based on Thunder Bay Field Naturalists (1998) (Adapted from North-South Environmental Inc. 2001)

SCIENTIFIC NAME	HABITAT	COMMON NAME
Ericaceae		
<i>Kalmia angustifolia</i> L.	bogs, conifer forest/swamp, Jack pine flats	sheep laurel
<i>Monotropa hypopithys</i> L.	conifer forest/swamp	pinetop
Gentianaceae		
<i>Gentiana linearis</i> Froel.	meadows, shores, streambanks	narrow-leaved gentian
Schripulariaceae		
<i>Euphrasia nemorosa</i> (Pers.) wallr.	rock crevices and ledges	field pussytoes
Asteraceae		
<i>Antennaria howellii</i> Greene spp.	rock outcrops, sandy/rocky woodland,	field pussytoes
<i>petaloidea</i> (Fern) R.J. Bayer	moist shores, bog, roadsides	
<i>Gnaphalium obtusifolium</i> L.	Jack pine flats, burnt woods, gravel pits	fragrant cudweed
Potamogetonaceae		
<i>Potamogeton praelongus</i> Wulfen	deep water (lakes)	white-stemmed pondweed
Juncaceae		
<i>Juncus articulatus</i> L.	moist sandy/ marly shores, bogs,	jointed rush
<i>Juncus militaris</i> Bigelow	streambanks, bogs	bayonet rush
Cyperaceae		
<i>Carex cf. ormostachya</i> Wiegand	roadsides, open rocky woods	necklace-like spiked sedge
<i>Eleocharis ovata</i> (Roth) Roem. & Schult.	shallow water, bogs, conifer swamps, shores	ovoid spike-rush

the bird count at approximately 150 breeding bird species. There are a number of significant breeding birds in the Nipigon River Conservation Reserve.

Bald Eagle

Canada's national assessment body, Committee on the Status of Endangered Wildlife in Canada (COSEWIC), ranks the bald eagle globally as G4. This is defined as uncommon to common, with usually more than 100 occurrences usually not susceptible to immediate threats. Provincially, the bald eagle is a species at risk and is listed as "Endangered" under the *Endangered Species Act*. While the bald eagle is a rare sight in most of its Ontario range, it is seen frequently along the cliffs and shorelines of the Nipigon River (Swainson and MacNaughton 2001).

Bald eagles rely on open water for food in winter and generally migrate to large rivers to

find a food source. In the winter, the open water adjacent to hydroelectric plants provides eagles with abundant waterfowl, stunned fish and other food items. Eagles, particularly juveniles are found in fall and early winter along the Nipigon River, scavenging spawning salmon. Counts conducted on the river have grown since 1989 from a maximum of 26 birds on the river at one time in the early 1990s to a high of 60 eagles during the fall of 2000 (Swainson and MacNaughton 2001).

Peregrine Falcon

Peregrine falcons are a species at risk in Ontario and are listed as "Endangered" under the *Endangered Species Act*. Eggshell thinnings, due to DDT and PCB poisoning, resulted in a serious and rapid decline in the numbers of new recruits to breeding populations, beginning in the 1940s and continuing to the late 1970s. Since the late

1970s, programs such as Project Peregrine throughout Ontario have successfully reintroduced the peregrine falcon to the wild. A reintroduction was initiated along the Nipigon River in 1991. In that same year, a wild breeding pair established a nesting site near the Nipigon River mouth, just outside the conservation reserve and has nested there each year since (Swainson 2002).

Great Grey Owl

The great grey owl is not listed as a species at risk in Ontario however, it is an indicator species of extensive mature coniferous forest. The great grey owl has been observed during nesting season along the Nipigon River although there are no confirmed reports of nesting (Ratcliff, 2002, personal communication, ci North-South Environmental Inc. 2001).

Red Necked Grebe

The red-necked grebe is considered to be a species at risk in Ontario. This means that they are rare to uncommon with between twenty and one hundred nesting colonies in Canada. This bird has been reported along the Nipigon River, however, nesting has not been observed (Ratcliff personal communication ci. in North-South Environmental Inc. 2001).

6.4.5 MAMMALS

Several species of mammals in the Nipigon River Conservation Reserve are at the northern edge of their range. This includes: white-tailed deer, long-tailed weasel, bobcat, several shrews (short-tailed shrew and smoky shrew), hairy-tailed mole and the eastern chipmunk. There are also several species at the southern limit of their range including caribou, wolverine, cougar, northern flying squirrel, and arctic shrew. There is also a subspecies overlap between the east and west. For example, short-tailed shrew, red squirrel, woodland jumping mouse, eastern chipmunk, raccoon, ermine and moose have two recognizable subspecies in this area (Swainson and MacNaughton 2001).

Woodland Caribou

Woodland Caribou have not been reported along the Nipigon River, though they occur on some southern islands of Lake Nipigon and near Onaman Lake. A caribou antler was recently found buried in the mud near Alexander Dam on the Nipigon River (Kushnier, pers. comm. 1995). Caribou are commonly reported to be wanderers, and Dymond (1928) reported that they had a tendency to summer in out of the way places throughout the district. It is possible that they wander south along the river occasionally, as long as they can find continuous cover (Gore and Storrie Ltd. 1994). During the fall of 2001, a bull was observed on the Cameron Falls Road, just north of Loftquist Lake (Swainson, per. comm. 2002).

Eastern Cougar

The cougar (*Felis concolor*) is listed as “Endangered” in Ontario and is protected under *Ontario’s Endangered Species Act*. Historically, the cougar was well distributed across Ontario in relation to deer, its chief prey. Due to early persecution by European settlers, cougar has virtually disappeared in eastern Canada.

Lake Nipigon and the Nipigon River area is considered a “*hotbed*” for cougar sightings, with 150 sightings reported between 1948 and 1998. Though many sightings have occurred, none have been verified with physical evidence. Cougar inhabit extensive forests, have large territories and exist at very low densities even where populations have been well established. They are intolerant of human disturbance. Cover, in the form of vegetation and broken topography, is more important to cougars than any particular vegetation type. This topographic requirement is characteristic of the terrain within the conservation reserve, and surrounding area (Gore and Storrie Ltd. 1994).

Wolverine

The wolverine is ranked as “*Vulnerable*” in Ontario (COSSARO) but has recently been recommended for reclassification as “*Threatened*”. This species requires large undisturbed tracts of forest with little or no human disturbance. There are scattered records of wolverine sightings around the Nipigon River.

White-tailed Deer

White-tailed deer reached areas north of Lake Superior in the late 1800’s or early 1900’s. Unlike moose, deer have never been plentiful in the area around Lake Nipigon. Deer adapt to forest disturbance caused by fire and insect disturbance and timber harvest and thrive on secondary growth browse. Deer, however, are not well adapted to survive northern Ontario winters. Deep snows (greater than 85cm) prolonged cold temperatures and strong chilling winds are believed to be limiting factors to an increase in deer population in the Lake Nipigon area. Wolves may also be a partial limiting factor, especially during winters of heavy snow buildup.

Deer are present all along the Nipigon River. Deer are carriers of a brainworm parasite (*Paralephostrongylus tenuis*) that is fatal to moose and caribou.

6.4.6 REPTILES AND AMPHIBIANS

Only five (5) species of amphibians and no reptiles were found by Gore and Storrie Ltd. (1994) or reported in the OMNR District records. Nine amphibian and two reptiles were reported by Dymond et al (1928) from Lake Nipigon, including species not recorded by District staff such as:

- Red-spotted Newt (*Notophthalmus viridescens*)
- Jefferson Salamander (*Ambystoma jeffersonianum*)
- Green Frog (*Rana clamitans*)
- Mink Frog (*Rana septentrionalis*)

- Common Garter Snake (*Thamnophis sirtalis*)
- Western Painted Turtle (*Chrysemys pictabelli*)

It appears likely that the winter climate along the Nipigon River is more severe than that in the sheltered bays and lagoons around Lake Nipigon. For example, the western subspecies of painted turtle (*Chrysemys picta belli*), was said to be absent from the Nipigon River. Red-spotted newt, green frog, and garter snake were also reported to be not common and were found in sheltered areas away from large water bodies. Garter snakes may also have been overlooked because searches for reptiles and amphibians were more concentrated in forests, bogs and fens, rather than in the earlier successional habitats favoured by garter snakes.

Sheltered bays are probably therefore the most critical habitat for many species of reptiles or amphibians along the Nipigon River, and connections between them and other habitat are probably highly important. Again, western subspecies such as western painted turtle may be limited by an interaction of climate and lack of sheltered habitat from dispersing into this area along the north shore of Lake Superior.

6.4.7 FISH

The greatest diversity of fish species within the Lake Nipigon watershed is associated with the Nipigon River as listed in Table 30. However, at least some of this diversity is associated with non-native species and those that interchange their movement with Lake Superior, including lake trout, round and lake whitefish. The river used to function as a channel connecting Lake Nipigon and Lake Superior, but is now described by Momot and Stephenson (1996) as a series of impoundments connected by short stretches of flowing tailwaters. The Alexander dam creates a complete barrier for fish between Lake Superior and Lake Nipigon.

Brook trout is one of the most valued sport fish species on the Nipigon River. Many of the

reports, stories, diaries and accounts of the Nipigon River from the mid 1800s, focus on the quantity and size of the famous brook trout for which the anglers came. The largest brook trout ever reported (14.5 lbs.) was caught in the Nipigon River in 1915, at Rabbit Rapids below Virgin Falls (Scott & Crossman 1973).

Brook trout spawn in the fall over areas of groundwater upwelling on the Nipigon River. They require high quality cold water environments for survival and reproduction. Brook trout spawning areas in the Nipigon River have been impacted by the regulation of the river for power generation. Forgan Lake, created by the Pine Portage dam, flooded the best brook trout waters of the river, including Virgin Falls. Numerous other factors affect brook trout spawning include: competition for spawning beds by introduced Pacific Salmon; eggs that are highly susceptible to siltation; scouring from log drives; and the impacts of gravel extraction on areas of groundwater upwelling (Swainson 2001a).

Roving angler surveys were conducted sporadically on the river between 1987 and 1994 and volunteer angler diary programs have been in place since 1988. Brook trout fishing quality has varied from one fish per 20 hours of fishing in 1987 to one fish per 7-8 hours in 1994 and has stayed at this average ever since. Tagging and tracking studies have also provided information about brook trout movements and migration patterns. Some brook trout have been caught and released as many as three times in the same location. Brook trout tagged in the Lower River have been recovered as far away as Rossport and in the Gravel River area. In 1989 and 1990, brook trout in Jessie Lake and the lower Nipigon River were implanted with radio and sonic transmitters and tracked to locate their spawning beds.

Field studies from 1988 to 1990 demonstrated that fluctuating water levels, caused by hydroelectric dam operations, exposed up to 90% (21 of 23) of the identified brook trout redds in the Nipigon River causing desiccation and freezing during the spawning and incubation period.

In response to public demand to save the Nipigon brook trout, as part of the Nipigon District Fisheries Management Plan 1989-2000, a detailed restoration plan was developed and implemented in 1989. Flow tests were conducted to determine minimum requirements to allow spawning and to protect brook trout redds during the incubation period.

Spawning habitat was created by constructing two artificial upwelling areas by piping and dispersing groundwater up through gravel in the Nipigon River. In addition, a large area (1000 m²) and several small (1.5 m²) areas where groundwater discharged through unsuitable substrate were improved by replacing or covering the native bottom material with suitable gravel materials. To provide additional spawning and nursery habitat, a small groundwater fed tributary was reshaped and resurfaced with gravel substrate. Nursery habitat was also enhanced in a nearby, small groundwater fed tributary by excavating a 31 m² pool.

To provide access for spawning fish and to avoid stranding during rapid drawdown events caused by hydro-electric dam operations, the littoral zone was recontoured near a natural spawning area and near the habitat enhancement projects.

Since the establishment of the flow agreement a maximum of 20% of the identified brook trout redds have been exposed to desiccation and freezing. Through a public consultation process directed by the Remedial Action Plan for the Nipigon Bay, the 1990 interim flow agreement was expanded in 1994 to a Watershed Management Plan for the Nipigon River and Lake Nipigon and from this a Nipigon River Operating Plan was developed in 1999. The plan gives first priority to protecting brook trout habitat while considering the needs of other stakeholders. Details can be found in Atira (1993), Atria (1994) and Ontario Hydro (1998).

Additional sportfish which contribute to the river's fishery include Lake Whitefish, Lake trout and also introduced western gamefish such as Rainbow Trout and Chinook Salmon.

Other sportfish which are occasionally taken in the river include yellow perch, sauger, brown trout and pink salmon.

Lake Helen was formerly renowned for its northern pike, which reached sizes of 30 to 40 lbs., but this species declined greatly in the late 1950s. Walleye were also formerly more abundant and also experienced a severe decline at this time. It is thought that this decline may have been related to pulp and paper mill effluent near the rivermouth.

There is a single record of a paddlefish (*Polydon spathula*) being caught in Lake Helen in 1913. Authentication of this occurrence is questioned however, and the paddlefish is listed as “Extirpated” by COSEWIC, in Canada today. MacCallum (1989) reported that sturgeon and sauger were also numerous in Lake Helen in the early 1900s. Today, sturgeon is a species of concern that is being tracked by the Natural Heritage Information Centre (NHIC 2000).

In the 1902 Annual Report of the Fisheries, there is concern about the large numbers of pike, walleye, and suckers in the river and their possible impact on the brook trout.

References to smallmouth bass near Alexander Dam occur as early as 1883 (Vail, 1994) and Dymond (1926) says they are native to Bass Lake, a small lake which drains into Nipigon River near Alexander portage."

The lower section of the river, downstream of Alexander dam, provides varied habitat ranging from short sections of fast flowing riverine habitat to lake habitat and is home to most of the species found in Lake Superior. This includes exotics such as sea lamprey, alewife, carp, brown trout, rainbow trout and Pacific salmon species. This section of the river provides some of the most important spawning habitat for the largest remnant population of the famous “coaster” brook trout of Lake Superior. Although genetic research is ongoing, it has been suggested that the “coaster” brook trout is a unique strain and can be considered an “*Evolutionarily Significant Unit*” of brook trout species. Protecting the Nipigon River

brook trout population and spawning habitat has been identified as a high priority in the Lake Superior Brook Trout Restoration Plan and doing so is critical to the survival and recovery of brook trout in Lake Superior.

Spawning area for rainbow trout and salmon are also found on the lower river. A detailed description of the habitat in the lower river and substrate mapping is in Atria (1993).

Fish migration from Lake Superior further upstream is blocked by Alexander dam.

6.4.8 WATER

Water quality has been monitored sporadically on the Nipigon River. In response to concerns about fish tainting and other concerns associated with the effluent from the pulp and paper mill at Red Rock, a survey of water quality and biota in Nipigon Bay on Lake Superior was conducted in 1966-1967. Sampling from Forgan Lake, Jessie Lake, Lake Helen and the lower Nipigon River was conducted to compare with the water near the mill effluent. Measures of suspended solids, dissolved solids, pH, turbidity, alkalinity, iron, sulfates, and sulfides are presented in Table 24.

A water quality monitoring station at Highway 17 on the Nipigon River is one of several that monitored nutrient loading along the north shore of Lake Superior, under an agreement with the International Joint Commission. The raw data from this 1973-1990 sampling is provided in MacCulum 1989. A summary of data and a comparison of the Nipigon River quality with other north shore streams is provided in OMOE (1992).

The Nipigon River was considered to be nutrient poor, had few solids and lower levels of conductivity, phosphorus, and metals than any other tributary. Zinc and Copper levels have declined since 1983, although they were never considered high. Similar to the north shore streams, the level of bacteria was low (OMOE 1992).

Detailed water quality monitoring was conducted following the massive landslide on the river in April 1990. Transparency readings

TABLE 23. Fish species present in the lower Nipigon River, 2001. Asterisk (*) denotes a non-native species

COMMON NAME	SCIENTIFIC NAME
Sea lamprey*	<i>Petromyzon marinum</i>
Alewife*	<i>Alosa pseudohaarengus</i>
Pink Salmon*	<i>Oncorhynchus gorboscha</i>
Coho Salmon*	<i>Oncorhynchus kisutch</i>
Chinook Salmon*	<i>Oncorhynchus tshawytscha</i>
Rainbow Trout*	<i>Oncorhynchus mykiss</i>
Brown Trout*	<i>Salmo trutta</i>
Brook Trout	<i>Salvelinus fontinalis</i>
Lake Trout	<i>Salvelinus namaycush</i>
Lake Whitefish	<i>Coregonus clupeaformis</i>
Lake herring/cisco	<i>Coregonus artedii</i>
Round Whitefish	<i>Prosopium cylindraceum</i>
Rainbow smelt*	<i>Osmerus mordax</i>
Northern Pike	<i>Esox lucius</i>
Longnose sucker	<i>Catostomus catostomus</i>
White sucker	<i>Catostomus commersoni</i>
Shorthead redhorse	<i>Moxostoma macrolepidotum</i>
Lake chub	<i>Couesius plumbeus</i>
Carp*	<i>Cyprinus carpio</i>
Emerald Shiner	<i>Notropis atherinoides</i>
Spottail shiner	<i>Notropis hudsonius</i>
Burbot	<i>Lota lota</i>
Brook stickleback	<i>Culaea inconstans</i>
Ninespine stickleback	<i>Pungitius pungitius</i>
Trout-perch	<i>Percopsis omiscomaycus</i>
Yellow perch	<i>Perca flavescens</i>
Smallmouth Bass	<i>Nicropterus dolomieu</i>
Walleye	<i>Stizostedion vitreum</i>
Least darter	<i>Etheostoma microperca</i>
Johnny darter	<i>Etheostoma nigrum</i>
Logperch	<i>Percina caprodes</i>
Mottled sculpin	<i>Cottus bairdi</i>
Slimy sculpin	<i>Cottus cognatus</i>

TABLE 24. Chemical characteristic of near-surface water of Forgan Lake, Jessie Lake and Lake Helen in 1968

PARAMETER	FORGAN LAKE	JESSIE LAKE	LAKE HELEN		
			STATION 1	STATION 2	STATION 3
Total Solids	102	116	142	136	130
Suspended Solids	1	1	12	20	15
pH			7.6	8	8
COD			27	23	8
Turbidity Units			5	6.5	8.5
Alkalinity (CaCO ₃)	78	85	77	72	74
Iron (Fe)	0.07	0.05	0.24	0.34	0.26
Sulphate (SO ₄)	2	3	5	2	2
Sulphide (H ₂ S)	0	0	0	0	0
Phenol (ppb)	2	4	0	4	4

went from 6 metres to 4 centimetres following the slide. A report is on file at the Nipigon District Ministry of Natural Resources Office.

Water quality data from a lake survey of Jessie Lake (1974) is shown in Table 25. Detailed flow data for the Nipigon River has been recorded since hydroelectric development occurred on the river in 1920 and is provided in detail in Atria (1993). Flows vary from 70 m³/s to 550 m³/s with average flows of 330 m³/s.

A comparison of actual flows in the river now, relative to a model of flows in the river without the dams show that the natural flows would be much less variable and would have only one peak flow period attributed to the spring runoff. The actual river flows show much variation and have many peak flow periods because of demands for hydroelectricity production. In recent years, the Nipigon River Water Management Plan has brought a partial reduction in this pulsing of flows but it still occurs. This remains a concern due to the stranding and flushing of fish and aquatic invertebrates.

The first collection of benthic organisms occurred in 1966 as part of a study to determine the impacts of the mill effluent on Nipigon Bay.

Subsequently, benthic organisms on the lower Nipigon River were collected as part of efforts to demonstrate the impacts of lampricide treatments, water level fluctuations and pipeline construction on benthic organisms. These findings are detailed in Table 26 through 30. No impacts from lampricide treatments or pipeline construction were detected. However, significant impacts due to water level fluctuations were documented. These concerns have been mitigated through implementation of the Water Management Plan for the Nipigon River, however destruction of benthic invertebrates during drawdown events continues to be a concern on the river. B.A.R. (1995) reported the finding of four separate invertebrate drift collections and stated that the high number of invertebrate taxa present (species richness) and the presence of pollution intolerant species is indicative of good water quality.

6.5 SOCIAL AND ECONOMIC ASPECT

6.5.1 FISHERIES RESOURCE USE

Sport fishing occurs year round on the Nipigon River. From Pine Portage to Cameron Falls, including Jessie Lake, there is a significant brook trout, lake trout and lake whitefish fishery, as well as a large dip net fishery for smelts. Between Cameron Falls

TABLE 25. Limnological characteristics for Jessie Lake in the Nipigon River Conservation Reserve.

PARAMETER	JESSIE LAKE (1974)
Surface Area (ha)	935
Maximum Depth (m)	42.7
Mean Depth (m)	13.4
Lake Perimeter (km)	34.4
Island Perimeter	1.6
Oxygen (mg/l)	9.2-9.6
pH	8.3-8.8
Alkalinity (mg/l)	75
Transparency (m)	6.1
Total Dissolved Solids (mg/l)	85

and Alexander Dam there is a limited brook trout, walleye, and northern pike fishery. From Alexander Dam downstream, there is a significant lake trout, rainbow trout, brook trout and chinook salmon fishery. Effort is directed at lake trout in the spring and chinook salmon from late summer to early fall. Rainbow trout receives considerable effort throughout the open water season with a significant late fall fishery. Brook trout are angled throughout the spring and summer until season closure on Labour Day (Swainson 2001a).

First Nation's subsistence fishing has occurred on the river for years. In Lake Helen, just outside of the planning area, subsistence gillnetting continues today. For many years, around the late 1800s and early 1900s, guiding on the river provided a large source of income to First Nations people.

There are three actively managed baitfish blocks assigned to fishermen that include a portion of the Nipigon River Conservation Reserve. These include license numbers 493882, 492882, and 491882. It is difficult to assess the harvest that takes place strictly within the boundaries of the conservation reserve, as the baitfish block boundaries do not coincide with the boundaries of the conservation reserve.

TABLE 26. Macroinvertebrate collected on the lower Nipigon River in May, 1966

<i>Ephemerella simulans</i>
<i>Hexagenia limbata</i>
<i>Hyallela azteca</i>
<i>Pisidium</i>
<i>Sphaerium</i>
<i>Amnicola</i>
<i>Lyogyrus</i>
<i>Valvata</i>
<i>Chironomidae</i>
<i>Palpomyia</i>
<i>Oligochaeta</i>

6.5.2 FOREST AND MINERAL RESOURCE USE

With the designation of the Nipigon River Conservation Reserve as a protected area through the *Lands for Life* and *Ontario's Living Legacy* planning processes, forestry and mineral exploration are no longer permitted uses within the conservation reserve boundaries. Both of these activities have occurred in the past in the Nipigon River Conservation Reserve. The first development which required extensive use of the forest resource was the construction of the Canadian Pacific Railway through the Nipigon Area between 1883–1885. The construction period required thousands of axe-made ties which were taken from within and adjacent to the right-of-way. A similar demand for ties occurred with the construction of the National Transcontinental Railway in 1908–1910 and the Canadian Northern Railway in 1913–1915.

6.5.3 WATER RESOURCE USE

Construction of the Cameron Falls hydro dam began in 1918. In 1926 came the construction of the Virgin Falls storage dam, then the Alexander Dam in 1930 and finally the Pine Portage Dam in 1950. In 1940, construction of the Ogoki Diversion began. The intent was to take the waters of the Ogoki River that naturally flowed north into the Albany River and then to James Bay and force them south into Lake Nipigon (Atria 1993).

TABLE 27: Species and numbers of invertebrates collected during lampricide treatment on the Nipigon River, 1981 (Adapted from Chessell 1981).

ORDER	# INDIVIDUALS COLLECTED	ORDER	# OF INDIVIDUALS COLLECTED
Ephemeroptera (Mayflies)	1033	Trichoptera (Caddisflies)	26
Ephemerellidae		Hydropsychidae (Net-spinning caddisflies)	
1. <i>Ephemerella</i> (SS) invaria	22	1. <i>Hydropsyche recurvata</i>	5
2. <i>Ephemerella serratella</i> or <i>serratoides</i>	7	2. <i>Cheumatopsyche</i>	7
Ephemeridae (Burrowing Mayflies)		Glossosomatidae	
3. <i>Hexagenia bilineata</i>	5	3. <i>Glossasoma nigror</i>	
4. <i>Ephemerella varia</i>	3	TOTAL	38
Heptageniidae (Stream Mayflies)		Hemiptera (Bugs)	37
5. <i>Heptagonia Leptophlebiidae</i>	2	Corixidae (Water Boatmen)	
6. <i>Leptophlebia</i>		1. <i>Sigara lineata</i>	
TOTAL	1072	TOTAL	37
Plecoptera (Stoneflies)	1	Oligochaeta (Worms)	4
Chloroperlidae (Green Stoneflies)		<i>Tubificidae</i>	
1. <i>Hastaperla</i> ? <i>orpha</i>	95	TOTAL	4
Perlodidae (Perlodid Stoneflies)		Hirudinea (Leeches)	2
2. <i>Isoperla gibbsae/transmarina</i>	1	<i>Pisicicolidae</i>	
3. <i>Isoperla transmarina</i>	22	1. <i>Pisicicola geometra</i>	
Pteronarcidae (Giant Stoneflies)		TOTAL	2
4. <i>Pteronarcys pictetii/dorsata</i>	4	Coelenterata (Freshwater Sponge)	2
5. <i>Pteronarcys dorsata</i>		Hydridae	
TOTAL	123	1. <i>Hydra americana</i>	
Diptera (Flies)	2	TOTAL	2
Ceratopogonidae (Biting Midges)		Mollusca (Clams)	
1. <i>Palpomyia/Bezzia</i>	2	Lymnaeidae	
Chironomidae (Midges)		1. <i>Stagnicola catascopium f. nasoni</i>	1
2. <i>Chironominae Chironomini Adult</i>	2	TOTAL	1
<i>Tanytarsini Pupal Execuvia</i>	1	Odonata (Dragonflies & Damselflies)	1
? <i>Paracladopelma</i>	4	Gomphidae (Clubtails)	
Diametinae		1. <i>Ophiogomphus columbrinus</i>	
3. <i>Diametia</i>	1	TOTAL	1
4. <i>Prodiamesa nir. fulva</i>	23		
<i>Orthocladinae</i>			
5. <i>Cricotopus bininctas</i>	21		
6. <i>Eukiefferiella devonica q p</i>	16		
Simuliidae (Black Flies)			
7. <i>Simulium</i> ? <i>rivuli</i>	3		
Tipulidae (Crane Flies)			
8. <i>Antocha</i>			
TOTAL	75		

TABLE 28. Invertebrates collected in drift nets from the lower Nipigon River (Between Alexander Dam and the mouth of the Nipigon River) between May 20 – 21, 1992 (Adapted from Bar 1995).

ORDER	FAMILY	TAXA
<i>Acarina</i>	Hygrobatidae	Hygrobatess spp.
<i>Acarina</i>	undefined	undefined
<i>Coelenerata</i>	Hydridae	Hydra spp.
<i>Diptera</i>	Ceratopogonidae	undefined
<i>Diptera</i>	Chironomini	Microtendipes spp.
<i>Diptera</i>	Chironomini	undefined
<i>Diptera</i>	Orthoclaadiinae	Corynoneura spp.
<i>Diptera</i>	Orthoclaadiinae	Cricotopus spp.
<i>Diptera</i>	Orthoclaadiinae	Heterotrissocladius
<i>Diptera</i>	Orthoclaadiinae	Tvetenia spp.
<i>Diptera</i>	Tanypodinae	Conchapelopia spp.
<i>Diptera</i>	Tanytarsini	Tanytarsus spp.
<i>Ephemeroptera</i>	Ephemerellidae	Eurylophella spp.
<i>Isopoda</i>	Asellidae	Caecidotea
<i>Mysidacea</i>	Mysidae	Mysis relicta
<i>Oligochaeta</i>	Enchytraeidae	undefined
<i>Oligochaeta</i>	Naididae	undefined
<i>Plecontera</i>	Nemouridae	

Until 1990, the dams on the river were operated by Ontario Hydro for the sole purpose of generating electricity, restricted by their legal flooding rights (259.1 metres to 260.6 metres) on Lake Nipigon. Internal policies set lower limits to avoid exposing the Town of Nipigon's waterline (113 m³/s) and upper limits to avoid washing out the Canadian Pacific Railway bridge footings (566 m³/s).

In 1990, when it was demonstrated that fluctuating water levels on the Nipigon River and excessive drawdown was killing developing brook trout in the spawning beds, an interim flow agreement was reached. Following a series of flow tests, the agreement established a minimum flow of 270m³/s on the Nipigon River from October 1 to May 15.

Following the April 1990 landslide and in response to increased demands being placed

on the Nipigon River, the Nipigon River Management Committee was formed. Members included the Ministry of Natural Resources, Ontario Hydro, the Nipigon Bay Remedial Action Plan (RAP) Team, the Nipigon RAP Public Advisory Committee, the Ministry of Environment and Energy, and the Department of Fisheries and Oceans.

In 1992, under the direction of this committee, a study was initiated to establish a management option through public involvement. The objective was to reduce the impact of fluctuating water levels of Ontario Hydro's Nipigon River hydroelectric dams on the Lake Nipigon/Nipigon River watershed, particularly on the Nipigon River fishery.

By 1994, a long-term Nipigon River Water Management Strategy was developed after extensive field studies, computer modeling and thorough public consultation process.

TABLE 29. Invertebrates collected in nets from the lower Nipigon River (Between Alexander Dam and the mouth of the Nipigon River), October 16 – 17, 1993 (Adapted from Bar 1995).

ORDER	FAMILY	TAXA
<i>Coelenterata</i>	<i>Hydridae</i>	<i>Hydra spp.</i>
<i>Diptera</i>	<i>Ceratopogonidae</i>	<i>Dasybelea</i>
<i>Diptera</i>	<i>Chironomini</i>	<i>Microtendipes</i>
<i>Diptera</i>	<i>Chironomini</i>	<i>Stenochironomus sp.</i>
<i>Diptera</i>	<i>Empididae</i>	<i>Glinocera spp.</i>
<i>Diptera</i>	<i>Orthoclaadiinae</i>	<i>Eukiefferiella</i>
<i>Diptera</i>	<i>Orthoclaadiinae</i>	<i>Parakefferiella spp.</i>
<i>Diptera</i>	<i>Orthoclaadiinae</i>	<i>Synorthocladinus</i>
<i>Diptera</i>	<i>Tanypodinae</i>	<i>Conchapelopia spp.</i>
<i>Diptera</i>	<i>Tanytarsini</i>	<i>Tanytarsus spp.</i>
<i>Diptera</i>	<i>Tanytarsini</i>	<i>Brillia</i>
<i>Diptera</i>	<i>Orthoclaadiinae</i>	<i>Ephemerella subvaria</i>
<i>Ephemeroptera</i>	<i>Ephemereliidae</i>	<i>Serratella deficiens</i>
<i>Ephemeroptera</i>	<i>Ephemereliidae</i>	<i>Heptagenia sp.</i>
<i>Ephemeroptera</i>	<i>Heptageniidae</i>	<i>Undefined</i>
<i>Nematoda</i>	<i>Undefined</i>	<i>Undefined</i>
<i>Oligochaeta</i>	<i>Naididae</i>	<i>Undefined</i>
<i>Ostracoda</i>	<i>Undefined</i>	

This strategy met the goals of the study by establishing guidelines for addressing water levels needs for lake and river fish as well as the water levels needs of all users.

From this strategy, an Operating Plan to guide the day to day operations of the dams was developed and released to the public in 2001. The plan provides tables with weekly recommended flows for any given Lake Nipigon level and inflow. The recommended flow seeks to minimize the negative impacts on fish and all users of both the river and lake. The new Operating Plan will (1) significantly improve water level conditions for fish on the Nipigon River and Lake Nipigon, (2) have only a marginal (1%) impact on the value of hydroelectric power generation (relative to the estimated total average annual value of approximately 30 million dollars in 1994), and (3) improve conditions for other users.

Since implementation of the Strategy in 1994, a sequence of very dry years followed by excessively wet years has tested the strategy and plan thoroughly. Through close monitoring of water levels, with frequent communication between OMNR and Ontario Power Generation (Formerly Ontario Hydro) and the Lake Nipigon Watershed Public Advisory Committee, the Strategy and Plan has achieved the stated objectives.

The strategy is reviewed and adjustments are made to the Operation Plan as needed. Additional discussions on the development of this plan can be found in Swainson (2001b).

The water power lease agreement expires for the Alexander Dam on Oct 31, 2019. The lease for Cameron Falls Dam expires Oct 31 2003, and Pine Portage, Jan 12, 2044. A province wide initiative is underway to ensure

TABLE 30 Invertebrates collected in drift nets from the lower Nipigon River (Between Alexander Dam and the mouth of the Nipigon River) on October 17, 1994 (Adapted from Bar 1995)

ORDER	FAMILY	TAXA
<i>Cladocera</i>	<i>Daphnidae</i>	<i>Daphnia</i> spp.
<i>Cladocera</i>	<i>Sididae</i>	<i>Sida crystallina</i>
<i>Coelenterata</i>	<i>Hydridae</i>	<i>Hydra</i> spp.
<i>Copepoda</i>	<i>Calanoida</i>	Undefined
<i>Diptera</i>	<i>Chironomini</i>	<i>Microtendipes</i> spp.
<i>Diptera</i>	<i>Chironomini</i>	<i>Polypedilum</i> spp.
<i>Diptera</i>	<i>Orthoclaadiinae</i>	<i>Cricotopus</i> spp.
<i>Diptera</i>	<i>Orthoclaadiinae</i>	<i>Heterotrissocladius</i> spp.
<i>Diptera</i>	<i>Orthoclaadiinae</i>	<i>Phaenopsectra</i> spp.
<i>Diptera</i>	<i>Tanypodinae</i>	<i>Conchapelopia</i> spp.
<i>Diptera</i>	<i>Tanytarsini</i>	<i>Tanytarsus</i> spp.
<i>Diptera</i>	<i>Tipulidae</i>	<i>Antocha</i> spp.
<i>Ephemeroptera</i>	<i>Baetiscidae</i>	<i>Baetisca</i> spp.
<i>Ephemeroptera</i>	<i>Ephemerellidae</i>	<i>Ephemerella</i> subvaria
<i>Hydracarina</i>	<i>Ephemerellidae</i>	<i>Hygrobates</i>
<i>Mollusca</i>	<i>Sphaeriidae</i>	<i>Pididium</i> spp.
<i>Oligochaeta</i>	<i>Naididae</i>	Undefined
<i>Trichoptera</i>	<i>Glossosomatidae</i>	<i>Glossosoma</i> spp.
<i>Trichoptera</i>	<i>Hydropsychidae</i>	<i>Hydropsyche</i> morose
<i>Trichoptera</i>	<i>Lepidostomatidae</i>	<i>Lepidostoma</i> spp.
<i>Trichoptera</i>	<i>Leptoceridae</i>	<i>Ceraclea</i> spp.

environmental concerns are addressed when these leases are renewed.

All three of the Nipigon River generating stations are operated by Ontario Power Generation (OPG). Alexander Dam has a capacity of 67.5 mega watts (MW) and in 2000 produced 522 giga watt hours (GWh) valued at \$21 million. Cameron Falls Dam has a capacity of 75 MW and in 2000 produced 643 GWh valued at \$26 million. Pine Portage Dam has a capacity of 128.7 MW and in 2000 generated 979 GWh, valued at \$39 million (Crawford 2001). In 2000, total value of the Nipigon River production was \$86 million.

6.5.4 WILDLIFE RESOURCE USE

Hunting is an important social and economic

activity in the Nipigon River Conservation Reserve. Deer, moose, and bear seasons provide commercial and local hunting opportunities. Moose are the principal big game species in the Nipigon District of the Ministry of Natural Resources. The Nipigon River Conservation Reserve intersects three Wildlife Management Units, including WMU 15B, WMU 13, and WMU 21A. Moose tags are allocated on a per unit basis. Aboriginal and treaty rights allow First Nation people to hunt for subsistence purposes. The extent to which subsistence hunting occurs within the area is unknown. Other animals hunted in the area include upland game birds, white-tailed deer and waterfowl.

There are a number of bear management areas that intersect the boundaries of the conservation reserve. These include NG-01-308 and NG-15B-044.

The fur trade industry was the first industry to make commercial use of the Lake Nipigon region. It has played a major role in the exploration and development of the area. Trapping continues to provide economic benefit to local people. There are five actively managed traplines that intersect the boundaries of the conservation reserve (NG8, NG9, NG10, NG11, and NG12). As of 1998 trapping season, the predominant species trapped were marten, beaver and weasel.

6.5.5 ECOTOURISM ACTIVITIES

In addition to the aforementioned recreational angling and hunting opportunities, the Nipigon River provides numerous swimming, canoeing, boating, wildlife viewing and hiking opportunities for local residents and tourists.

The scenic nature of the conservation reserve and the wildlife viewing opportunities make it an attractive place for outdoor enthusiasts. The striking topography is a major viewing resource, offering impressive scenery for locals and tourists to the area.

There is no organized camping within the Nipigon River Conservation Reserve. Presently, Crown land camping takes place at most of the access points along the Nipigon River including Jessie Lake (at the north end), Male Creek (both north and south access), Birch Point, and the Alexander Forebay. Several of the access points along the Nipigon River have fire pits, and toilet facilities.

Remote tent camping does take place, albeit rarely, on the Nipigon River. These sites are accessed by canoe, kayak or power boat, mainly by anglers on the river.

A number of hiking trails have been developed within the Nipigon River Conservation Reserve. These were established by local hiking group volunteers. These trails have been cleared by hand, and marked with flagging tape. No signage has been erected to indicate the start

of the trail. Visitors to these trails are referred by word of mouth through the Nipigon Section of the Voyageur Hiking Trail or the Thunder Bay Hiking Club. In the winter, these same trails may be skied or snowshoed.

One such trail, referred to as the Split Rock Trail, starts 33.8 km north of Highway 11/17, on the Cameron Falls Road (Highway 585). The trail runs east towards the river for 580 metres, then jaunts north along a challenging section of trail along the edge of the river overlooking Split Rock Portage and Split Rock Island. This trail provides a breathtaking view 75 metres (250 feet) above the river.

Another trail, which is outside of the conservation reserve boundaries, but offers a spectacular view of Jessie Lake, Elizabeth Lake, and South Bay on Lake Nipigon is the Susie Lake Trail. Local volunteers established this trail which starts on the west side of the Cameron Falls Road (Highway 585) approximately 30 km north of Highway 11/17. It is located north of Purdom Township Line at the north end of Jessie Lake. The trail extends west for 3 km towards Susie Lake. Between the road and Susie Lake, the trail crosses over the former Nipigon Tramway Line. In the winter, it is possible to continue by skiing across the lake towards Susie Mountain at the north end of Susie Lake and then hike up the south side of Susie Mountain.

In 2001, the Land of the Nipigon Waterways Development Association built a scenic lookout at Alexander Landing. This provides a view of the Alexander Dam and the Nipigon River. A trail connects the lookout with the boat launch at Alexander Landing.

The Ontario Federation of Snowmobile Clubs (OFSC) operates a 18,000 km border to border system called the TransOntario Provincial Snowmobile (TOPS) Trails. The Ontario Federation of Snowmobile Clubs (OFSC) Trail A between Nipigon and Geraldton, crosses the Nipigon River Conservation Reserve at the Cameron Fall Dam. Logging roads, the Hydro line, and the TransCanada PipeLine are also used by snowmobile enthusiasts.

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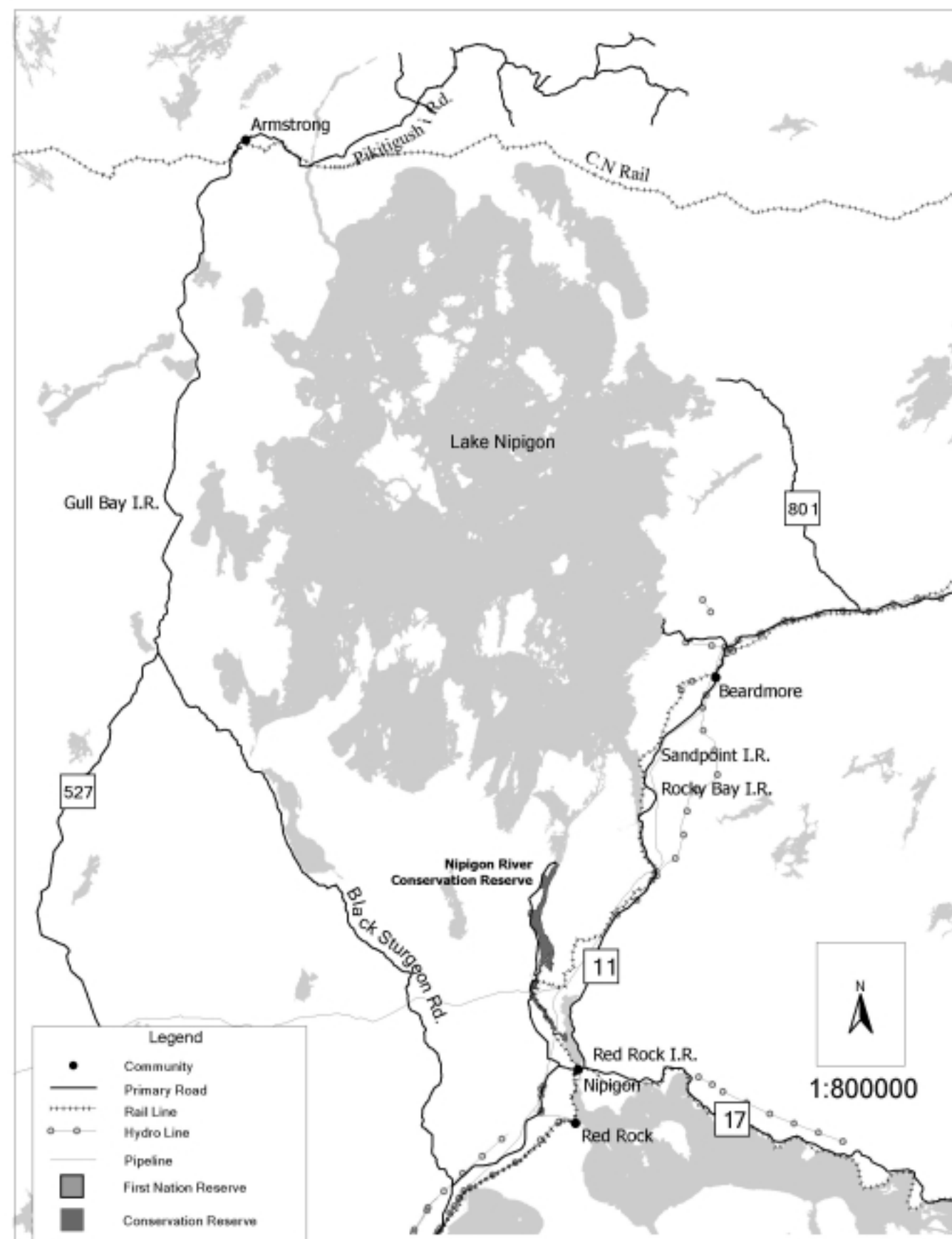
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FIGURE 10: REGIONAL SETTING MAP FOR NIPIGON RIVER CONSERVATION RESERVE



Data Source: MNR NRVIS Database
 Projection: Universal Transverse Mercator, Zone 16
 North American Datum, 1983
 Date: 06/03/02

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INSERT FIGURE 11

BOUNDARY MAP FOR NIPIGON RIVER CONSERVATION RESERVE

INSERT FIGURE 12

RESOURCE MANAGEMENT MAP FOR NIPIGON RIVER CONSERVATION RESERVE

BLACK STURGEON RIVER PROVINCIAL PARK MANAGEMENT PLAN

CHAPTER 5

July 2003

Dear Sir/ Madam:

I am pleased to approve the Black Sturgeon River Provincial Park Management Plan as the official policy for the protection and management of Black Sturgeon River Provincial Park. The plan reflects the Ministry of Natural Resources' and Ontario Parks' intent to protect the natural and cultural features of Black Sturgeon River Provincial Park, while maintaining and developing high quality opportunities for outdoor recreation and heritage appreciation for the residents of Ontario and visitors to the province.

The Black Sturgeon River Provincial Park is located within the Lake Nipigon Basin Signature site, one of 9 such areas featured in the *Ontario's Living Legacy Land Use Strategy* (1999). Signature Sites are identified for their range of natural and recreational values and their potential to contribute to future recreation and tourism.

This management plan has been developed under the general direction of the Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy, which provides the overall context for land use and resource management activities in the Basin.

The plan includes a prioritized implementation strategy and summarizes the public consultation that occurred as part of the planning process.

The park management plan will be used to guide the management of this park. It may be reviewed to address changing issues or conditions. A review will be held as required.

I wish to extend my sincere thanks to all those who participated in the public consultation process.

Yours truly,



Adair Ireland-Smith
Managing Director
Ontario Parks

STATEMENT OF ENVIRONMENTAL VALUES AND THE ENVIRONMENTAL BILL OF RIGHTS

In accordance with the provisions of the *Environmental Bill of Rights*, the Ministry of Natural Resources prepared a *Statement of Environmental Values*. It describes how the purposes of the *Environmental Bill of Rights* are to be considered whenever decisions are to be made which might significantly affect the environment. This includes decisions made as a result of the park management planning process.

The primary purpose of the *Environmental Bill of Rights* is “to protect, conserve and wherever possible, restore the integrity of the environment.” From the Ministry’s perspective, that broad statement of purpose translates into four objectives in its *Statement of Environmental Values*:

- To ensure the long-term health of the ecosystems by protecting and conserving our valuable soil, aquatic resources, forest and wildlife resources as well as their biological foundations;
- To ensure the continuing availability of natural resources for the long-term benefit of the people of Ontario;
- To protect natural heritage and biological features of provincial significance; and,
- To protect human life, the resource base and the physical property from the threats of forest fires, floods and erosion.

The Ministry’s *Statement of Environmental Values* has been considered in the development of this park management plan for Black Sturgeon River Provincial Park.

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REGIONAL SETTING



0 10 20 30 40 50 km
Scale: 1:1,000,000



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This map is illustrative only.
Do not rely on it as being a precise indicator of routes,
locations of features, nor as a guide to navigation.

Projection: Lambert Conformal Conic
Datum: North American Datum 1983
Base Derived From: MNVS
(Natural Resource Values Information System)
Produced by: The Provincial Geomatics Service Centre

- Waterbody
- River / Stream, Permanent
- Primary Road
- Railway
- Hydro / Transmission Line
- Pipeline
- Settlement
- First Nations
- Existing Provincial Park
- Recommended Provincial Park
- Recommended Enhanced Management Area
- Recommended Conservation Reserve
- Lake Nipigon Basin Signature Site



FIGURE 13: REGIONAL SETTING FOR PARK

1.0 INTRODUCTION

Black Sturgeon River Provincial Park (P2250) was recommended as part of *Ontario's Living Legacy Land Use Strategy* (OMNR 1999) that guides the planning and management of Crown lands in central and portions of northern Ontario. Under this initiative, 378 new protected areas were identified. Black Sturgeon River Provincial Park is part of this significant expansion of Ontario's protected areas system.

The park is a component of the Lake Nipigon Basin Signature Site. The planning process for the Lake Nipigon Basin Signature Site is a complex initiative. A single process is being applied to the signature site, which contains a number of areas with different land use designations. These areas all share common planning stages and timelines, thereby facilitating the concurrent planning process. The areas included within the Lake Nipigon Basin also share common geographic themes, recreation uses and resource issues with the signature site. The development of the *Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy* will include the development of the management plans for parks and conservation reserves, including Black Sturgeon River Provincial Park.

Black Sturgeon River Provincial Park was regulated on May 8, 2002. A 799-hectare addition at the north end of the park will be regulated through the public consultation process for the *Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy*.

Black Sturgeon River Provincial Park is currently 23,577 hectares in size, and designated a waterway class park in recognition of its representative natural features and potential to provide high quality water-based recreational opportunities. The park is located northwest of the Town of Nipigon. The Black Sturgeon River begins near Lake Nipigon and flows into Black Bay on Lake Superior. The park stretches approximately 72 kilometres northerly along the Black Sturgeon River from Lyon Township

(northern limit of pipeline right-of-way in the vicinity of Lot 1 Concession 7) to the Philips and Benner baseline at the top end of Black Sturgeon Lake.

The park serves as an important recreational waterway for canoeists, campers, anglers and hunters. There are diverse fisheries and landscape features (e.g. glacial spillway and cuestas) with rugged terrain. The lakes along the Black Sturgeon River are easily accessed via the Black Sturgeon Road

The Black Sturgeon River Park Management Plan has evolved from the public review of the following documents:

- Lake Nipigon Basin Background Document;
- Lake Nipigon Basin Signature Site Management Options; and
- Black Sturgeon River Preliminary Park Management Plan.

The background document and management options document includes information on all of the conservation reserves, enhanced management areas and provincial parks within the signature site. The preliminary park management plan was specific to Black Sturgeon River Provincial Park.

The approved park management plan sets direction for the next 20 years by establishing policy and identifying appropriate development, consistent with the goals and objectives of Ontario Parks.

2.0 SUMMARY OF SIGNIFICANT ISSUES (NOT RANKED)

Park users, local residents, Nipigon West Local Citizens Committee, Canadian Outward Bound Wilderness School (COBWS), as well as other groups and individuals, identified the following concerns related to the management of Black Sturgeon River Provincial Park.

2.1 CAMPING

Two forms of camping take place in the park: at interior campsites and at access points. The majority of interior campsites are along Black Sturgeon Lake, Nonwatin Lake and the Black Sturgeon River. Access point campsites are located at Nonwatin Lake, Spruce River, Eskwanonwatin Lake, the north end of Black Sturgeon Lake, and the dam at the south end of the park. These sites are popular camping areas, with the majority of camping occurring in the summer and fall months. The use patterns at the access points are very different than at the interior sites. Concerns have been expressed about the unavailability of campsites due to over-crowding; people camping longer than 23-days on a single site; and the accumulation of garbage and human excrement near the access points. Concerns have also been expressed regarding confining campsites to appropriate locations and defining areas with barriers and signage, to prevent vehicles from damaging sensitive plants and features. These concerns are addressed in sections 5.2, 7.1, 7.2, 7.3, 9.2 and 10.2.

2.2 EXISTING HUNTING AND TRAPPING IN THE PARK

Hunters and trappers have expressed concerns regarding the possibility that they might lose access to the park, or parts of it, for these traditional activities. Moose hunting is a significant recreational activity in the park and surrounding area. Portions of six bear management areas and eight active traplines are within the boundary of Black Sturgeon River Provincial Park. Four trap cabins are located in the park. Hunting and trapping is

permitted in the park. These concerns are addressed in section 8.1.5.

2.3 GARBAGE DISPOSAL SITE

A Zone of Attenuation for a municipal waste disposal site is located adjacent to the park by Moseau Creek in the vicinity of Lot 3 Concession 7. Established in 1978, the disposal site has an estimated 30-year lifespan and will be closed in 2008. It operates under a Certificate of Approval from Ministry of the Environment. This Crown patent land is reserved under the *Public Lands Act* for said purpose. Dispositions for forest management activities are not permitted.

The Zone of Attenuation is immediately adjacent to the park. The waste disposal site is in close proximity to the park.

At such time as the waste disposal site is decommissioned or expanded, it is recommended that hydrogeological studies be completed to determine the actual area of attenuation required. At that time a boundary revision may be considered to provide further protection of the river.

2.4 ACCESS TO LAKE NIPIGON

Concerns have been expressed that the access to Lake Nipigon might be restricted because of the addition to the north end of the park, which includes a portage connecting Black Sturgeon Lake to Black Sturgeon Bay on Lake Nipigon. The road that crosses the northern end of Black Sturgeon Lake Provincial Park is used as an access point to Lake Nipigon. The portage is also used by Canadian Outward Bound Wilderness School to access Lake Nipigon. This concern is addressed in section 6.0, 9.2.11 and 10.5.

2.5 NATURAL ABANDONMENT OF ROADS AND FACILITIES

Many old forestry roads exist in and around the park. These roads are of varying quality and are becoming impassible by vehicles. Concerns have been expressed that roads that are currently passable are degrading and that

this is affecting people's ability to access the park. A road strategy is being developed as part of this park management plan. This concern is addressed in section 10.1.

2.6 ARCTIC-ALPINE DISJUNCT PLANT COMMUNITIES

There are arctic-alpine communities in the park, specifically on exposed rock faces. These plant communities are extremely sensitive to human disturbance. Concern has been expressed that these fragile communities may not be given enough protection to continue their existence. This concern is addressed in section 5.1.2, 7.1.1, 9.2.5 and 11.1.

2.7 ACTIVE MANAGEMENT OF THE PARK

Concerns have been expressed that the garbage and human excrement accumulating around access points and campsites is affecting water quality and public enjoyment. The preferred method to deal with this water quality problem is to install and maintain vault toilets with pumped out holding tanks and garbage collection facilities. These facilities would have to be maintained. This would require charging a user fee for camping and access to the park. Another option of providing maintenance services would be to seek partners to assist with facility improvements along the waterway by collecting fees and monitoring access points. This could include establishing a Friends of Black Sturgeon River organization or "*Adopt an Access Point*" program similar to the "*Adopt a Highway*" program operated by the Ministry of Transportation. Business case analysis and partnership opportunities will continue to be considered. If severe impacts are affecting park values, access points and campsites may be closed. This concern is addressed in section 9.3 and 11.3.

2.8 FISHERIES IN BLACK STURGEON LAKE AND RIVER

Angling pressure is very light throughout the park. High use areas are at the access points

near Spruce River, on Black Sturgeon Lake, Nonwatin and Eskanonwatin lakes and at the Black Sturgeon dam.

The Black Sturgeon dam provides rainbow trout, walleye and lake sturgeon fishing in the spring and early summer, smallmouth bass and walleye throughout the summer and rainbow trout, chinook and coho salmon in the fall.

Lake sturgeon have been blocked from migrating up the river by the dam at the south end of the park. Efforts should be made to restore the natural migration patterns of fish along the Black Sturgeon River, while preventing the introduction of exotic species like rainbow trout into the system. These concerns are addressed in sections 5.1.2, 5.2, 8.1, 9.2.1 and 11.1.

2.9 ADJUSTING BOUNDARIES TO INCLUDE THE MOUTH OF THE RIVER

In the Lake Nipigon Basin Signature Site Management Options document it was suggested that a shift in the boundary of the park to include the glacial spill way of Lake Kelvin and inclusion of the portage linking Black Sturgeon Lake to Lake Nipigon should be made. The boundary was altered to include an additional 799 hectares in the park. More detail is included in section 6.0 and Figure 17.

2.10 RIDGE AND SWALE COMMUNITY

Traffic from the users of the Spruce River boat launch is impacting the abutting sensitive plant community. To minimize this impact, the campsites and access point area should be defined with physical barriers to prohibit vehicular access to the ridges. To eliminate this impact, the research station should be rehabilitated and improved to provide appropriate boat launching and camping facilities and the Spruce River access point and campsites should be closed. These concerns are discussed in sections 5.1, 7.1.2, 7.2.8, 9.2.7 and 10.2.

3.0 PARK CLASSIFICATION

Provincial parks policy has evolved over the last century, since the establishment of Algonquin Park in 1893. Today, provincial parks are governed by three key tools: the *Ontario Provincial Parks Act*, the *Ontario Provincial Parks Policy Statement*, and *Ontario Provincial Parks: Planning and Management Policies* (1992). The latter was amended by the *Ontario's Living Legacy Land Use Strategy* (1999), for provincial parks established as a result of the *Lands for Life* planning process.

The provincial parks system incorporates six classes of parks, which are selected to meet representation targets in addition to the protection of special values. Black Sturgeon River Provincial Park is classified as a waterway park. Waterway parks are selected river and lake corridors that complement other parks by representing elements of diversity not found within the other park classes. The class target is to establish one waterway park in each ecological district. Black Sturgeon River Provincial Park represents the ecoregion 3W, and ecodistrict 3W-3, (G.A. Hills 1964 and Crins 2000) and is characterized by the boreal forest. The waterway status reflects the park's natural features, as well as its important recreational values to canoeists, campers, anglers and hunters.

4.0 GOAL

To protect the significant natural, cultural, and recreational features of Black Sturgeon River Provincial Park, while providing high quality opportunities for visitors to participate in compatible heritage appreciation, recreation, and tourism activities.

5.0 OBJECTIVES

Ontario's provincial park system has four objectives: protection, recreation, heritage appreciation, and tourism. Each park in the system may contribute to each of these objectives, depending on its resource base. Black Sturgeon River Provincial Park contributes to the achievement of all four objectives.

5.1 PROTECTION OBJECTIVE

To protect the provincially significant natural features of the park including the Nipigon Moraine remnant; the unconsolidated transverse ridges; as well as rare and sensitive flora and fauna.

Black Sturgeon River Provincial Park contains a variety of natural and cultural resources that are provincially significant. These include:

- The Nipigon Moraine remnant;
- Unconsolidated transverse ridges;
- Lake sturgeon and northern brook lamprey populations in the Black Sturgeon River,
- Blackfin cisco, which is a threatened species of fish that may inhabit Black Sturgeon Lake,
- Provincially rare Smooth woodsia (*Woodsia glabella*),
- Diabase cliffs and talus slopes, and
- Nesting bald eagles in the park.

The park makes another significant contribution to the protection objective, because of the connection and geographic relationship to the Lake Nipigon Basin Signature Site. The Black Sturgeon River valley forms a valuable southern 'arm' or extension to the signature site. It provides a natural corridor for the movement of wildlife between the Lake Nipigon Basin and the shoreline of Lake Superior. This will be critical to connecting the populations of woodland caribou from Lake Nipigon to the Slate Islands.

The protection objective will be accomplished through appropriate park zoning, resource management policies (land use controls), research, monitoring, and a greater park ecosystem approach to park planning and management. The greater park ecosystem is defined as the area of influence surrounding the park from an ecological, social and economic perspective. It is the area where most of the cross-boundary impacts affecting the park and the surrounding area will occur, and vice versa.

5.1.1 EARTH SCIENCE

The entire park lies within the Canadian Shield, an extensive rolling bedrock-dominated plain consisting predominantly of Precambrian crystalline igneous and metamorphic rocks with minor occurrences of sedimentary rocks. The Canadian Shield is divided into a number of provinces and sub-provinces on the basis of overall differences in internal structure and style of folding. Black Sturgeon River Provincial Park lies within the Nipigon Plate, a subdivision of the Southern Province of the Canadian Shield.

Black Sturgeon River Provincial Park is underlain with Precambrian metavolcanics and metasediments. The former are evident in the diabase sills and sheets along the western shoreline of Black Sturgeon Lake. Nipigon diabase sills of the Nipigon Plate underlay Black Sturgeon Lake.

The most striking landform feature of Black Sturgeon Lake and the river corridor is the northwest trending Black Sturgeon Fault. The fault resulted in the depression of the Black Sturgeon basin area creating the prominent Black Sturgeon Trench. Black Sturgeon Lake and Black Sturgeon River lie within the trench.

The Black Sturgeon escarpment, dominated by Archean metavolcanics, defines the elevated and rugged east side of the trench. The escarpment may be traced southeast from Tchiatang Bluff (on the shores of Lake Nipigon) to below Eskwanonwatin Lake (Coates 1972).

The terrain west of the fault, from the north end of Nonwatin Lake to the northern boundary of the park is characterized by low rolling hills with relatively few bedrock outcrops. From Nonwatin Lake south, a thick bed (possibly up to 300 metres in depth) of Sibley Group sedimentary rocks lies within a depression of the basement rock. The formation extends south along the west side of the fault and covers an oval area approximately 24 kilometres by 40 kilometres. Dikes, sills and laccoliths of diabase have intruded into fractures and along bedding planes within the Sibley Group. Extensive erosion has unroofed many of the intrusive bodies exposing tabular diabase caps sheathing the less resistant sedimentary rocks. High mesas and plateaus such as Eagle Mountain (1,650 metres) are characteristic of the areas underlain by diabase. Sibley rocks are best observed either at cliff faces below the diabase cover or along stream channels.

Black Sturgeon River Provincial Park is situated with an area of high mineral potential. There are two geological features that influence the mineral potential. The Black Sturgeon Fault, a northwest trending, steeply dipping normal fault, extends over more than 90 km, from Lake Nipigon to Lake Superior and forms a prominent bedrock-controlled escarpment, approximately 130 metres high, along the east side of the Black Sturgeon River valley (Duba and Frey 2002). The second feature is the east-west trending greenstone belt underlying the Black Sturgeon Fault. The park and surrounding area has traditionally been explored for iron, copper and platinum group elements.

The Black Sturgeon River area has been subjected to over 800 million years of subaerial weathering and erosion. Those processes altered the landscape from the end of the Mesoproterozoic sedimentation and intrusions to the beginning of the glaciations of the Quaternary Period, 1.64 Ma (Fulton, 1989). During the multiple episodes of glaciations that have blanketed almost all of Canada throughout the Quaternary Period, the surface of the area was modified further

by glacial and meltwater deposits and their erosional processes.

Following a pattern that was repeated as many as a dozen times, the last covering of glacial ice, the Marquette re-advance (Dredge and Cowan 1989), receded northward from the area ~10,000 years ago. As a result of the extensive postglacial drainage history of the Black Sturgeon River valley, only minor, patchy till remnants remain on the upper bedrock walls of the valley. The recession of the Marquette glaciation deposited the large, arcuate Nipigon Moraine of bouldery sandy till along the western margin of the Lake Nipigon basin (Teller and Thorleifson 1983; Zoltai 1961).

The Nipigon Moraine occupied much of the present area of the Black Sturgeon River valley, before being eroded and modified extensively by the overflow drainage of glacial Lake Agassiz, southeastward into the ancestral Lake Superior basin (Teller, 1985; Teller and Thorleifson 1983; Zoltai, 1965). The Black Sturgeon River valley was one of seven similar bedrock channels (and of twenty-six individual drainage outlets) south of Lake Nipigon that was eroded deeply by both glaciation and by the high-energy drainage of glacial Lake Agassiz (Teller and Thorleifson 1983).

Earth science values are protected within nature reserve and natural environment zones.

5.1.2 LIFE SCIENCE

The Black Sturgeon forest is characterized as boreal mixedwood. Boreal mixedwoods of the Black Sturgeon area are generally more species-rich than those of regions to the east and west. They are complex and dynamic ecosystems characterized by broad spatial, temporal and structural diversity (Scarratt 2002).

Black Sturgeon River Provincial Park lies within the Superior Section of the boreal forest as described by Rowe (1959). An early report (Halliday 1937) described the region as a relatively stable mixed forest of white

spruce, balsam fir, white birch and aspen on deep, medium-textured valley soils. White birch and to a lesser extent, black spruce were prominent on till slopes and the tops of low hills. The higher, rockier elevations, and the coarser materials in the valleys supported jack pine. White pine and red pine were prominent on the terraces in the central portion between Lake Nipigon and Lake Superior. In an undated report prepared by the John Schroeder Lumber Company of Milwaukee, Wisconsin (ca 1940), the forests of the Black Sturgeon River valley are described as predominantly white spruce, growing in either pure stands or more often in mixed stands with balsam fir.

Isolated mature white pine and, to a lesser extent, red pine are found as single trees or in small and sparse clusters on the bedrock plains, plateau and ridges throughout the park. A few old growth white pine are present along the more isolated sections of the river valley. The crowns of solitary supercanopy, old growth white pines (up to 60 cm dbh and over 30 m tall and estimated at 120 years or older) frequently stand well above the canopy giving a very distinctive profile to the forest horizon. Their sparse distribution and sheltered locale afforded the trees protection from the 1999 fire. Old growth stands of white pine, estimated to be 140 to 150 years old, occupy only 11 hectares of the park area (FRI data, 2001).

Numerous white pine stumps on Eagle Mountain suggest that white pine was at one time more prevalent in the park. Accessible white pine stands were cut in the early 1900s. White pine regeneration was evident, but limited to exposed patches on steep talus slopes where saplings 1 to 2 m tall is present under a light canopy of aspen.

The deep silty or clayey lacustrine deposits of the Black Sturgeon River valley are nutrient rich and are among the most productive soils in northwestern Ontario (Sado et al. 1987). The rich silty and clay soils of the river valleys support hardwood or hardwood dominated mixedwood communities. However, many conifers in the canopy of the mixedwood stands were killed by a recent spruce

budworm infestation. Hardwood and hardwood-dominated mixedwood forests make up approximately 60% of the park (Jones, Harris and Foster 2002).

Lowland black spruce – tamarack forest (Ecosite 35, 36 and 37) makes up about 5% of the park. It is confined mostly to small pockets in depressions scattered throughout the park.

The diabase cliffs and talus slopes (Basic Open Cliff Type (S3S4) and Basic Open Talus Type (S3S4)) are uncommon communities in Ontario which may support alpine plant communities (OMNR 2002, and Jones, Harris and Foster 2002) and are protected by nature reserve zones. Bakowsky (2002) lists 33 provincially rare plant species associated with diabase cliffs in northwestern Ontario.

Exposed talus slopes and cliffs of tabular diabase are prominent features in the central (Eagle Mountain) and southern portion of the park (Figure 14). The aspect of the cliffs and talus slopes creates unique microclimates. North and west aspects create cool, humid microclimates that provide suitable habitats for arctic-alpine flora. A provincially “rare” arctic-alpine disjunct plant, smooth woodsia (*Woodsia glabella*), was collected in 1968 in the park. These precipitous cliff faces as well as talus slopes are significant features in Black Sturgeon Provincial Park, and are protected in nature reserve zones.

Abandoned shorelines on the glaciolacustrine plains along the southwest side of Black Sturgeon Lake provide a ridge and swale topography underlain by calcareous clays. The ridge and swale areas support a diverse calciphytic community with species such as hidden-scaled sedge (*Carex cryptolepis Mackenzie*) and elliptic spikerush (*Eleocharis tenuis*), as well as Kalm's lobelia (*Lobelia kalmii*) and northern grass of Parnassus (*Parnassia palustris*). These ridge and swale communities are protected in a nature reserve zone.

Bald eagle (S4) is classed as “Endangered” under Ontario’s *Endangered Species Act*. In the Lake Nipigon Basin, eagles are known to

nest almost exclusively in large poplar trees. Nests are generally below treetops to provide shade, yet nest trees generally protrude above the rest of the forest canopy (Swainson et al 2001). Along the Black Sturgeon Waterway, 4 eagle nests were observed in 1990 and 7 nests in 2001.

Like bald eagles, peregrine falcons (S2S3) are also listed as “endangered”. Although no peregrine falcon nests have been discovered in the park, the cliffs are potential nesting habitat (Brian Ratcliffe pers. comm. in Jones, Harris and Foster 2002).

The eastern population of cougar (SH) is classified as “endangered” in Ontario. A number of unconfirmed cougar sightings are clustered in the Black Sturgeon River valley (Swainson et al. 2001). A similar cluster appears along the north shore of Lake Superior immediately to the south of the park. Although speculative, the clusters may reflect the significance of the Black Sturgeon River valley as a natural corridor between the Lake Nipigon basin and the shoreline of Lake Superior (Jones, Harris and Foster 2002).

Northern brook lamprey (S3 / G4) is classified as “special concern” at the federal level and “vulnerable” provincially. It is known from the Black Sturgeon River above the lower dam (Swainson 2001b). It is a non-parasitic species whose range includes parts of the Mississippi, Hudson Bay, and Great Lakes drainages. In the Lake Superior Basin, it is known from a number of small streams in Ontario, Michigan and Wisconsin (Scott et al. 1973).+ This species apparently does not move out to Lake Superior, but completes its life cycle in streams. Larvae are subject to mortality by lowering water levels and increased siltation from erosion. Habitat may be limited by lampricide intended to control sea lampreys (Scott and Crossman 1973) but the species persists in untreated streams, and above barriers and in backwater areas that are not affected by the treatments (Lanteigne 1991).

Lake sturgeon populations are declining across most of its range (Auer 1999) and it is known from fewer than 100 locations

worldwide (i.e. “globally rare”; S3/G3). The Black Sturgeon River is one of only nine Lake Superior tributaries currently used for spawning by lake sturgeon (Auer 1999). Populations in all nine tributaries are reduced from historical levels. Another nine tributaries were historically used for spawning. Black Sturgeon Lake apparently also supports lake sturgeon, but the current status of the population is unknown.

Lake Superior’s commercial sturgeon fishery began to decline in the mid 1800s and by the late 1800s the stock had declined dramatically. Low reproductive rates and slow growth make sturgeon vulnerable to over-fishing. Despite harvest restrictions implemented in the 1920s, sturgeon were commercially extinct in Lake Superior by 1940 and have not recovered to historic levels (Hansen 1994).

The decline of sturgeon in Lake Superior and its tributaries was largely due to over-fishing, but habitat loss has also contributed. A dam on the Black Sturgeon River at 16.3 km above Lake Superior at the southern edge of the park is a barrier to lake sturgeon migration and may have altered natural stream flow regimes during the spawning period. Young sturgeon may be vulnerable to lampricide applied to the Black Sturgeon River every four to five years since 1960 (Auer 1999). Log drives on the river may have deposited bark and other debris, burying spawning beds (Harkness and Dymond 1961).

The Black Sturgeon River is recognized as a priority for protection of lake sturgeon habitat (Slade and Auer 1997). A rehabilitation plan for lake sturgeon in Lake Superior (Auer 1999) recommends (i) protecting existing habitat (ii) restoring natural stream flow regimes through re-licensing criteria for hydroelectric dams (iii) providing passage past barriers and dams, and (iv) minimizing the impact of sea lamprey control activities.

Blackfin cisco (SX/GXQ) is one of a group of seven closely related herring species known as “deepwater ciscoes”. Its global range is restricted to Lake Nipigon and a few other inland lakes, including Black Sturgeon Lake. It was extirpated from Lake Superior, Lake

Huron and Lake Ontario in the early 1900s (Scott and Crossman 1973). The Lake Nipigon populations (apparently including those of Black Sturgeon Lake) are sometimes distinguished as “*Nipigon cisco*” (*Coregonus nipripinnis regalis*).

The present status of blackfin cisco is clouded by uncertain taxonomic status of the species and difficulty in monitoring. Its taxonomic status and continued existence are uncertain as reflected in its ranking as “*threatened*” at the federal level, but “*extinct*” at the provincial level. The federal status of the species is currently (2002) under review.

Overfishing, competition for food with introduced smelt and alewife, and sea lamprey predation may have contributed to its extirpation from Lake Superior. Hybridization between closely related species may have hastened its decline (Scott and Crossman 1973).

A male zebra clubtail (Family: *Gomphidae*) was collected along the Black Sturgeon River on August 31, 2001. This provincially rare dragonfly (S3) is known from approximately 5 other locations in northwestern Ontario (Oldham and Elder 2000; Catling et al. 2001). This distinctive species is typically associated with clear, woodland streams and rivers with moderate current and a sandy or mucky bottom.

Life science values are protected within nature reserve and natural environment zones.

5.2 RECREATION OBJECTIVE

To provide visitors to Black Sturgeon River Provincial Park with opportunities for recreation such as whitewater canoeing and kayaking, canoe tripping, interior and car camping, fishing, hunting, rock climbing, picnicking, swimming, snowshoeing, dogsledding, and cross-country skiing.

Black Sturgeon River Provincial Park provides opportunities for a variety of high quality recreational uses compatible with the character of the park.

The park provides day-use opportunities for angling on its many lakes and rivers; paddling opportunities along its entire length, especially between the former Split Rapids Dam and Nonwatin Lake; rock climbing northwest of Nonwatin Lake; as well as using the beach areas for family picnics and swimming. During the winter, the park provides cross-country skiing and snowshoeing opportunities. Canadian Outward Bound Wilderness School uses sections of the park during their dogsledding and winter camping programs. Part of the Trans-Ontario Provincial System snowmobile trail passes through the park.

Camping occurs along most of the access points to the park, as well as in the interior, along the Black Sturgeon River. Camping may have a negative impact on the environmental resources if not managed properly. Some of these impacts include destruction of vegetation, garbage, damage to sensitive wildlife habitats, degradation/erosion of shoreline, soil contamination, and reduced water quality. Camping must not negatively impact the ecological, cultural, or wilderness values of the Black Sturgeon River Provincial Park. Campers at various access points along the Black Sturgeon River have altered the access points with the construction of trailer pads, docks and other facilities. Garbage is also a major problem at these locations. The degradation of these sites must be addressed.

Many recreation opportunities exist in Black Sturgeon Provincial Park. Activities such as canoeing, boating, picnicking, rock climbing, hiking and nature appreciation will be encouraged in a manner that does not jeopardize any of the river's significant environmental or cultural values. Areas of high sensitivity will be identified and zoned to prevent negative impact to these sites. Use will be directed to existing and future approved access points. Access points will only be approved once they have all necessary improvements to mitigate the effects of campers using the site. These improvements include defining campsite boundaries, garbage collection, and vault toilets with a tank that is pumped out. Because the small

size of the site cannot sustain camping, the access points at Nonwatin Lake and the dam at the south end of the park will be managed for day-use only. This means no overnight camping will be permitted at these two sites. Camp 1 will be zoned to allow for facility development to enhance camping opportunities. The campsites at the north end of the lake will also be developed to allow for camping opportunities. Remote tent camping (not road accessible) will be permitted on interior sites within the Black Sturgeon River Provincial Park.

Rock climbing is concentrated to a few existing climbing routes northeast of Nonwatin Lake. Currently, Canadian Outward Bound Wilderness School is the major user of the site. No new climbing routes will be permitted. Existing routes will be evaluated for the occurrence of arctic-alpine plant communities and user impacts on the trails and climbing routes. Climbs that have a negative impact on park values will be closed.

Angling pressure is very light throughout the park. High use areas are at the access points near Spruce River, on Black Sturgeon Lake, Nonwatin and Eskwanonwatin lakes and the Black Sturgeon dam.

The Black Sturgeon dam provides rainbow trout, walleye and lake sturgeon fishing in the spring and early summer, smallmouth bass and walleye throughout the summer and rainbow trout, chinook and coho salmon in the fall.

The recreation objective will be achieved through appropriate development, access, nature reserve and natural environment zoning; the identification of management policies to prevent any compromise of significant values; market research and monitoring; and mitigating impacts of use.

5.3 HERITAGE APPRECIATION OBJECTIVE

To provide individual opportunities for exploration and appreciation of the natural and cultural heritage of Black Sturgeon River Provincial Park, including the northern hunters and fishers, the fur trade and early forest industry, as well as the earth and life science features of the park.

Unstructured self-use activities allow users to experience a dramatic landscape that illustrates a chronology of geological events and processes. Examples of activities include paddling, hiking, snowshoeing, cross-country skiing, and viewing. This objective will be achieved through the provision of accurate up-to-date information to park visitors regarding the natural, cultural and recreational resources of the park, including a park map, signage and literature associated with the Lake Nipigon Basin Signature Site.

5.3.1 THEME SEGMENT

Themes include Pottery / lithics of Terminal Woodland Period (1000 AD), European Trade goods of early contact (1600 AD), and North Shore Lake Superior log drives (1919-1962 AD), as well as the park's life and earth science features. Section 9.1 Natural Heritage Education lists interpretive themes and techniques for the park.

A Natural Heritage Education Plan may be developed for the park.

5.4 TOURISM OBJECTIVE

To provide both Ontario residents and out-of-province visitors with opportunities to discover and to experience the unique natural and cultural features of Black Sturgeon River Provincial Park, through the provision of high quality paddling, angling and hunting experiences as well as year-round day-use and camping opportunities.

Black Sturgeon River Provincial Park provides day-use and camping experiences for area residents, close to Highway 11/17.

The tourism objective is achieved by having

outstanding paddling, fishing and hunting experiences with links to the Lake Nipigon Basin Signature Site tourism strategy that will attract and retain visitors.

Further information about the Lake Nipigon Basin Signature Site Tourism Strategy can be found in section 3.2.4 of the Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy.

6.0 PARK BOUNDARY

Black Sturgeon River Provincial Park is composed of Crown land, and encompasses portions of the following townships: Graydon, Adamson, Cockeram, McMaster, Church, Hele, Nipigon and Lyon. A number of boundary anomalies are present due to private land and other uses (mining claims, roads). All patent lands (including mining claims) have been withdrawn from the park boundary. Currently, there is one major road crossing: notably the Camp 42 Road.

Generally, in the northern portion (Black Sturgeon Forest Management Unit), the park boundary is 1,000 metres from the water's edge. Exceptions are where the Black Sturgeon River Road becomes the park boundary (variable width) and the portion of the inflow to Black Sturgeon Lake (500 metres). Further south the park boundary varies between 400 metres on the east side to 200 metres on the west side, except where cliff features were included. At the southern most portions the boundary is 200 metres from the water's edge on both sides. There are two larger nodes to encompass the features of Eagle Mountain and the hills from Graydon to Magee lakes.

The park extends into Black Sturgeon Bay on Lake Nipigon. The South Lake Nipigon Enhanced Management Area (E2252a) and Lake Nipigon Conservation Reserve (C2247) bound the top end of the park on the east and west side. The park is bounded to the south by the Trans-Canada Pipe Line located approximately 2 km north of Hwy 17.

The Black Sturgeon Forest Management Unit (FMU) and the Lakehead FMU surround the park. A portion of an unpatented mining claim located on the eastern shore of Black Sturgeon Lake is designated and managed as a forest reserve. There are six mining claims located around the south shore of Black Sturgeon Bay that are designated and managed as forest reserves. Canadian Outward Bound Wilderness School has a Crown lease.

The Trans-Canada Pipe Lines (TCPL) Ltd., has an easement that crosses Black Sturgeon River (CL 1376) in the Township of Cockeram. The southern border of the park abuts the TCPL Easement in the Township of Lyon. Two transmission lines cross Black Sturgeon River Provincial Park near the southern border in Lyon and Nipigon Townships. These lands are administered provincially under a Land Use Permit (LUP).

A Zone of Attenuation for a municipal waste disposal site is located adjacent to the park by Moseau Creek in the vicinity of Lot 3 Concession 7. Established in 1978, the disposal site has an estimated 30-year lifespan and will be closed in 2008. It operates under a Certificate of Approval from Ministry of the Environment. This Crown patent land is reserved under the *Public Lands Act* for said purpose. Dispositions for forest management activities are not permitted.

The Zone of Attenuation and waste disposal site is in close proximity, but not immediately adjacent to the park.

At such time as the waste disposal site is decommissioned or expanded, it is recommended that hydrogeological studies be completed to determine the actual area of attenuation required. At this time a boundary revision may be considered to provide further protection of the river.

If any patent land contained within or adjacent to the park becomes available for acquisition, it will be evaluated with regard to its contribution to park objectives and available funding. If any forest reserves lapse as a result of normal processes, then that area will be regulated as part of the park.

No land disposition for the private use of individuals or corporations will be considered within the park. However, dispositions for uses associated with activities permitted in this park management plan will be considered.

The majority of respondents to the management options document supported the 799 hectare expansion of Black Sturgeon

River Provincial Park, to include the mouth of the river at Lake Nipigon. This boundary change includes the glacial spillway of Lake Kelvin and surrounds the portage along the popular canoe route connecting Black Sturgeon River to Lake Nipigon.

This expansion allows better management of the portage between the two lakes. The area was previously included in the Lake Nipigon Conservation Reserve, and thus, does not affect wood supply to the forest industry. By including the portage in the park, it can be better promoted as a travel corridor for water trails to and around Lake Nipigon.

Please refer to Figure 15 for more information.

A park boundary expansion that should be considered during future park planning reviews, or initiatives such as "Room to Grow", should include approximately 8,000 hectares, southwest of Nonwatin Lake. This expansion would capture the Nipigon Moraine, which is a significant earth science feature (Dube and Frey 2002).

6.1 FOREST RESERVES

Forest reserves are areas outside of the park boundary that contain existing mining claims or leases. Within forest reserves, protection of natural heritage and special landscapes is a priority, but some mineral resource use can take place with appropriate conditions.

Policies for forest reserves are similar to the policies for new conservation reserves, except that mining and related access are permitted in a forest reserve. Commercial forest harvest, new hydroelectric power development, and peat extraction are not allowed, but most other resource and recreational uses are permitted, provided they are consistent with the values that are being protected. Aggregate extraction is not permitted except where there is an existing aggregate permit, or aggregate is required in support of mineral exploration or mining within the forest reserve and there are no feasible sources outside the reserve. Land disposition is not permitted. More detailed planning will be

undertaken to determine site-specific policies that will maintain the identified values.

There are 565 hectares of forest reserves adjacent to the park. Forest reserves are areas not regulated in the park. The intention is that these lands will be added to Black Sturgeon River Provincial Park if a claim or lease is retired through normal processes. There are two scenarios that could happen with forest reserves.

- 1) Status quo - exploration would continue, prospectors and contractors will still have access to their claim(s) for work or survey purposes as long as the claim stays active and in good standing. This provides for "*business as usual*" practices regarding exploration, development, operations and possible mining within forest reserves.
- 2) The claim lapses - activities cease and the area becomes regulated into the park. This change would have zoning implications, whereby a minor or major amendment and boundary regulations process would be needed.

In accordance with the *Ontario's Living Legacy Land Use Strategy* (OMNR 1999), however, access in the park to mining tenure (i.e. forest reserve(s) and mining patents) is permitted for purposes of mineral exploration, development, or operations. Access will be planned in accordance with the requirements of the *Environmental Assessment Act*.

7.0 PARK ZONING

Zoning is a key part of a park management plan. Zones fulfill a variety of functions that include:

- Providing recognition of the features and attributes of a park;
- Delineating areas on the basis of their requirements to protect and buffer provincially significant representative features;
- Delineating areas on the basis of their ability to support various recreational activities; and
- Identifying uses that will protect significant features, yet allow opportunities for recreation and heritage education (please refer to Table 31 for more information).

The four zones that will guide the resource management and development of Black Sturgeon River Provincial Park include nature reserve, development, access and natural environment zones (Figure 15).

Any change in zoning after the park management plan is approved would need to be reviewed through the management plan amendment process as outlined in the *Ontario Provincial Park Management Planning Manual* (1994).

7.1 NATURE RESERVE ZONES

Nature reserve zones protect the provincially significant earth and / or life science features within a park, and may include a protective buffer area in which a minimum of development is permitted. Development is generally restricted to trails, necessary signs, interpretive facilities (where warranted) and temporary facilities for research and management.

7.1.1 NATURE RESERVE ZONE 1 (2,903 HA) (TALUS SLOPE)

Exposed talus slopes (Ecosite 5) and cliffs (Ecosite 4) of tabular diabase are prominent

features in the central and southern portion of the park (Figure 14). The aspect of the cliff and talus slopes create unique microclimates. North and west aspects create cool, humid microclimates that provide suitable habitats for arctic-alpine flora. A provincially rare arctic-alpine disjunct plant, smooth woodsia (*Woodsia glabella*), is known to occur within this zone.

These habitats will be protected in a nature reserve zone. Hunting and trapping are prohibited in nature reserve zones. No new climbing routes will be explored or developed in Black Sturgeon River Provincial Park. More detailed life science inventory work will be completed, which would clearly show the presence or absence of arctic-alpine disjunct plants and address wildlife concerns, such as bird nesting sites, around existing climbing routes.

Small vault toilets may be considered if the use of the climbing routes on Nonwatin Lake and associated impacts warrant.

7.1.2 NATURE RESERVE ZONE 2 (57 HA) (RIDGE AND SWALE)

Abandoned shorelines on the glaciolacustrine plains along the southwest side of Black Sturgeon Lake provide a ridge and swale topography underlain by calcareous clays. The ridge and swale areas support a diverse calciphytic community with species such as hidden-scaled sedge (*Carex cryptolepis*) and Elliptic spikerush (*Eleocharis tenuis*), as well as Kalm's lobelia (*Lobelia kalmii*) and northern grass of Parnassus (*Parnassia palustris*).

The public boat launch on the west side of Black Sturgeon Lake is adjacent to the ridge and swale communities. Periods of low water levels in the lake such as experienced in 2001 exposes the communities to incidental foot or vehicular traffic. Vehicular traffic to the launch site will be contained by the use of barriers, to help minimize intrusions into and impacts upon this interesting and regionally significant shoreline community.

Once the research station is rehabilitated with appropriate boat launching facilities, this camping and access point will be closed.

7.2 DEVELOPMENT ZONES

Development zones provide main access to the park and facilities to support intensive car camping and day-use activities. They constitute a relatively small portion of most parks. Development may include roads, visitor control structures, beaches, picnic areas, campgrounds, commercial service facilities, and orientation, interpretive, educational, research and management facilities. Six development zones have been designated in Black Sturgeon River Provincial Park.

7.2.1 DEVELOPMENT ZONE 1 (104 HA) (CAMP1)

The south shore of Eskwanonwatin Lake was first cleared and developed as a logging camp. Foundations of old buildings remain on the site, but the area is relatively flat and old logging roads still provide access to Eskwanonwatin Lake and Black Sturgeon River. In 1999, a forest fire destroyed the bridge crossing the river. Further work was completed by the Nipigon District Ministry of Natural Resources to remove the bridge pilings, rehabilitate the river and improve fish habitat.

This area is intensely used for extended periods of car camping. The area may have the potential to support the development of a campground and day-use area for swimming, picnicking and boating. Further field assessment should be conducted in order to determine the design capabilities and constraints associated with this type of development. An approved site plan is required for all facility developments within Black Sturgeon River Provincial Park.

This site requires that adequate toilet facilities be installed. This area is large enough to accommodate increased visitation by those currently camped at Nonwatin Lake.

7.2.2 DEVELOPMENT ZONE 2 (103 HA) (BLACK STURGEON DAM)

The dam at the south end of the park is a popular day-use destination for local residents. The area provides fishing and picnicking opportunities. The site will continue to provide day-use recreation opportunities. No overnight camping will be permitted. Facility improvements, such as parking lots, trails, signage and vault toilets would be encouraged after further field assessment is conducted in order to determine design capabilities and constraints.

Further research is needed to examine the need and effectiveness of modifying the Black Sturgeon dam to allow for fish migration, especially like sturgeon.

7.2.3 DEVELOPMENT ZONE 3 (29 HA) (GAS PIPELINE)

There are two natural gas pipeline corridors that cross Black Sturgeon River Provincial Park, one forms the south boundary of the park, and the other runs between Eskwanonwatin Lake and the Camp 42 bridge. The northern natural gas pipeline corridor also has a hydro transmission line associated with it. This zone is limited to the facilities (e.g. pipelines, compressor stations, access corridors) required to maintain their respective function.

Existing utility corridors that pass through the park will continue to be a permitted non-conforming use and are required to remain in present locations. New utility corridors will not be permitted.

7.2.4 DEVELOPMENT ZONE 4 (7 HA) (HYDRO TRANSMISSION)

There are two hydro transmission corridors that cross the south end of Black Sturgeon River Provincial Park and another line crossing the middle of the park associated with the pipeline (see 7.2.3 for further information). These zones are limited to the facilities (e.g. hydro towers, power lines, access corridors) required to maintain their respective function.

Existing utility corridors that pass through the park will continue to be a permitted non-conforming use and are required to remain in present locations. New utility corridors will not be permitted.

A Trans-Ontario Provincial System (TOPS) snowmobile trail (Route # AD) crosses a small portion of the park at the most southern hydro transmission corridor. The trail uses the corridor until it crosses the river then diverts south. The local club maintains an “ice bridge”, where they have manicured the slope and established a thoroughfare. *Ontario’s Living Legacy (OLL) Land Use Strategy* outlines the commitment to permit existing uses within OLL sites like Black Sturgeon River. Therefore, the use of snowmobiles on this existing trail is permitted. The use of ATVs is not permitted on this trail. For more information about future planning and potential relocation of this snowmobile trail, please refer to section 10.5 and 11.2

7.2.5 DEVELOPMENT ZONE 5 (7 HA) (CANADIAN OUTWARD BOUND WILDERNESS SCHOOL)

The Canadian Outward Bound Wilderness School (COBWS) property is under a lease that expires in 2005. The designation of the property as a development zone will allow for renewal of the lease or a comparable occupancy arrangement. This zone is limited to the area defined in the Crown Lease.

7.2.6 DEVELOPMENT ZONE 6 (38 HA) (RESEARCH STATION)

Concerns over the impact of the 1940 spruce budworm outbreak prompted the federal government to establish and operate a field research station (1945 to 1969) on Black Sturgeon Lake. The magnitude and potential impacts of the infestation were also factors in the establishment of the Ontario Department of Lands and Forest, Black Sturgeon Ranger Station in the late 1940s. The site was eventually turned over to Lakehead University, but it has since fallen into disuse. The Lakehead University’s Licence of Occupation for the site has lapsed.

There are a number of derelict buildings associated with the research station. This area will be rehabilitated. Rehabilitation will include physically removing buildings, and testing and/or removing contaminated soil. Constructing vault toilets, campsites and a boat launch could further improve this site. Once the site is rehabilitated, the boat launch, campsite and access point at Spruce River should be closed to protect the ridge and swale community.

7.2.7 DEVELOPMENT ZONE 7 (183 HA) (NORTH END OF BLACK STURGEON LAKE)

The north end of Black Sturgeon Lake has a sand shoreline that has long been popular for picnicking, swimming, and camping during the spring and fall. This zone also includes the boat launch and car campsite on the northwest side of Black Sturgeon Lake. The area could support other day-use facilities, such as a parking lot, signage and vault toilets. Limited development within this access zone is encouraged, including the provision for primitive car campsites. Two trap cabins are located within this zone. Physical definition of the access point and campsites, through the use of physical barriers and signage, is critical to prevent random access and impacts to adjacent plant communities. Sewage disposal facilities (vault toilets) are warranted to address the concern of inappropriate disposal of human waste and reduce contamination to Black Sturgeon Lake and River.

7.2.8 DEVELOPMENT ZONE 8 (11 HA) (BOAT LAUNCH AT SPRUCE RIVER)

The boat launch on the southwest side of Black Sturgeon Lake is a popular spring car camping and fishing location. Users of the area impact on the sensitive ridge and swale community adjacent to the site (see 7.3.2 for further information). Physical boundaries and signage is needed to keep people away from the nature reserve. Once the research station is rehabilitated with appropriate boat launching facilities, this camping and access point will be closed.

7.3 ACCESS ZONES

Access zones serve as staging areas, a means of both providing and regulating use in areas of the park geared towards extensive recreation. Generally, development is limited to roads and visitor control structures. Provision may be made for limited orientation, interpretive or educational facilities, though generally more for self-use rather than through structured personal service. Limited facilities for research and park management may be present. Two access zones have been designated in Black Sturgeon River Provincial Park.

7.3.1 ACCESS ZONE 1 (16 HA) (CAMP 42 ROAD)

The Black Sturgeon Road is heavily used to access the Black Sturgeon Forest Management Unit and Lakehead Forest Management Unit for forestry operations. In areas where the road crosses into the park (around the Camp 42 road, the north end of Black Sturgeon Lake and southwest of Eskwanonwatin Lake), the right of way and the road remains in the park. Current standards for primary road allowances are set at 15 metres from centreline of the road. The zoning for this type of road is an access zone with its boundaries 15 metres from centreline of that road.

The access point, where the Camp 42 Road crosses the Black Sturgeon River, will be managed for day-use only. No camping is permitted.

7.3.2 ACCESS ZONE 2 (23 HA) (SPLIT RAPIDS AND NONWATIN LAKE ROAD)

The Black Sturgeon River between Split Rapids and Nonwatin Lake is used by Canadian Outward Bound Wilderness School and local paddlers for day use and instruction of canoeing and kayaking. This section of river is rated Class III, pending water level, and as such is considered an intermediate level route, as whitewater skills are necessary. The put-in site around Split Rapids already contains a small parking lot with road and river access. The access point on Nonwatin Lake was a popular camping spot with four or

five campsites, beach frontage and a small area for parking. This area cannot support both camping and day-use opportunities. The area will be developed for day-use access only, and include a parking lot, signage and vault toilets.

The access point at Split Rapids will also be managed for day-use only. No camping is permitted.

7.4 NATURAL ENVIRONMENT ZONES

Natural environment zones include natural landscapes, which permit the minimum level of development required to support low-intensity recreational activities. Development is limited to backcountry campsites, portages, necessary signs and minimal interpretive facilities.

7.4.1 NATURAL ENVIRONMENT ZONE 1 (20,122 HA)

The remainder of the park is zoned natural environment. Hunting, fishing and motorized watercraft are permitted in this zone.

8.0 RESOURCE STEWARDSHIP POLICIES

The management of the natural and cultural resources within Black Sturgeon River Provincial Park will conform with the policies identified for waterway class parks in *Ontario Provincial Parks: Planning and Management Guidelines* (1992) and *Ontario's Living Legacy Land Use Strategy* (1999). Additional policy direction is provided in the following section.

8.1 NATURAL RESOURCES

The first priority for natural resources in Black Sturgeon River Provincial Park is to manage for naturally functioning ecosystems with a secondary focus on naturalized exotics.

8.1.1 LANDFORM

The management of the park's land base will be directed towards maintaining the natural landscape. Mineral exploration and mining are prohibited within the boundaries of the park. Aggregate for park purposes will be acquired from commercial sources outside the park. Peat extraction is not permitted within the boundaries of the park.

8.1.2 WATER

Water quality for fisheries habitat and recreational purposes will be maintained.

Water quality, adjacent to development zones and where camping occurs, will be monitored where feasible, in accordance with provincial standards.

Further dams and water control structures are prohibited from being installed in the park. Commercial hydro development is not permitted within the boundaries of Black Sturgeon River Provincial Park. Existing dams and water control structures are allowed to continue and may be decommissioned.

8.1.3 VEGETATION

Management of vegetation within the park will be directed towards the maintenance of

an evolving natural succession of communities.

Commercial timber harvesting is prohibited within the park.

Infestations of forest insects and diseases will be monitored and assessed, where feasible. Non-native species will be controlled, and native species may be controlled. If control measures are undertaken, they will be applied to minimize effects on the general park environment. Biological controls will be used wherever possible.

The removal of hazardous trees will be permitted in all zones where safety is a concern (e.g. trails and access points). Areas experiencing adverse impacts will be rehabilitated whenever possible using plant species native to the park. Landscaping with native plants will be permitted in campsites and development zones.

Brushing and ditching along approved roads will be permitted to improve sight lines and/or traffic flow.

Herbicide applications will be discouraged for vegetation management, including along utility corridors. Mechanical and hand tending of vegetation in utility corridors will be encouraged.

Development that necessitates the removal of vegetation will be supported by a vegetation inventory in accordance with approved site plans.

8.1.4 FIRE

Fires within the park will be managed to protect park visitors and prevent socio-economic disruption. The ecological role of fire as an agent of disturbance for the maintenance of ecosystems and critical habitat will be promoted. Fire management will promote a "naturalness" objective to approximate a natural forest and wildlife habitat condition. Fires will be managed to minimize the loss or damage to provincial park property, infrastructure, structures, and adjacent landowners and communities. Prescribed fires will be managed to minimize

impacts on adjacent land users and communities through proper planning and sound decision-making.

Light on the Land fire suppression techniques is the preferred option when protecting sensitive features. All fires that threaten park visitor safety or park infrastructure will receive Full Response and sustained action until extinguished. In the absence of an approved fire management plan or interim fire response strategy for this park, fires will generally receive a full response and sustained action until extinguished. A modified response could occur after more detailed planning and in consultation with the Park Superintendent and the Fire Executive Officer.

The use of Suppression Action requires the approval of a Fire Assessment Report (FAR).

Fires that enhance caribou wintering habitat will receive a Modified and/or Monitored Response, subject to more detailed planning and consultation with the Park Superintendent. Prescribed burning may be used to meet ecosystem management objectives in the nature reserves, including enhancing caribou wintering habitat.

8.1.5 WILDLIFE

Wildlife management may be undertaken on an “*as required*” basis in order to protect the health and safety of the park visitors or to protect park facilities and resources.

Regular monitoring should be conducted for species at risk (e.g. peregrine falcons, bald eagle) to determine long term population trends and habitat use.

If deemed necessary, restricted use zones may be established to protect sensitive species from disturbance during critical times (e.g. No activity will be permitted within 200m of eagles and ospreys nests from March 15 to August 15 and no activity will be allowed within 300m of great blue heron nests between April 15 and August 15).

Hunting is permitted in the natural environment zone. All hunting activities will be subject to the policies and regulations of

Wildlife Management Unit 15B and 13 of the *Ontario Hunting Regulations Summary*. The park superintendent may restrict hunting at certain times and locations for the purposes of wildlife management and/or public safety.

Nuisance animals will be trapped and removed under the supervision of, or directly by Ministry of Natural Resources staff. This control will be exercised as a last resort when it is essential for the protection of human health and safety, the health of animal species, or the protection of infrastructure.

Existing commercial trapping is permitted to continue within Black Sturgeon River Provincial Park. There are eight active, registered trap lines within the park boundary. No new trapping operations, including trapline cabins and trails are permitted. Transfers of active licences are permitted, subject to a review of potential impacts, and the normal types of transfer or renewal conditions that would apply within a protected area. “*Transfers*” include situations where a licence is surrendered with a request that it be immediately reissued to another individual or organization that is assuming an existing operation. Trapline cabins are considered to be part of the trapline, and would also be transferred with the trapline, for the purposes of trapping. The relocation of existing trails and cabins will be determined in consultation with the park superintendent.

There are six bear management areas that lie within the park boundary.

Status Indians having treaty rights to carry out traditional natural resource harvesting activities shall be permitted to carry on these activities in accordance with the terms of their treaty within their treaty area.

8.1.6 FISHERIES

The Nipigon District Fisheries Management Plan identifies strategies for the Black Sturgeon River.

Rehabilitation of degraded fish habitat may occur. This may include, where appropriate:

- Restoring fish passage at dams and identified barriers to migration;
- Repairing damage to the streambed and banks caused by the log drives; and
- Stabilizing eroding shorelines.

Sport fishing is permitted in the park. All fishing activities will be subject to the policies and regulations of Division 21 of the *Ontario Recreational Fishing Regulations Summary*. The park superintendent may restrict sport fishing at certain times and locations for the purposes of fisheries management and/or public safety.

Stocking of non-native species and native spawn collection is prohibited. Stocking of native species is permitted in access, development and natural environment zones.

There are no commercial fishing operations in Black Sturgeon Lake or Black Sturgeon River. No new commercial fishing is permitted in Black Sturgeon River Provincial Park.

The seven existing baitfish operations contained partially or wholly within Black Sturgeon River Provincial Park will be permitted to continue indefinitely. Previous blocks that have been revoked or surrendered or baitfish blocks that are currently unallocated may not be reissued if the blocks include areas within Black Sturgeon River Provincial Park. Licences can be reissued if the area within the park is removed from the affected licence. No new baitfish harvesting operations are permitted. Transfers of active baitfish licences would be permitted, subject to a review of potential impacts, and the normal types of transfer or renewal conditions that would apply within a protected area. “*Transfers*” include situations where a baitfish licence is surrendered with a request that it be immediately reissued to another individual or organization that is assuming an existing operation.

Status Indians having treaty rights to carry out traditional natural resource harvesting activities shall be permitted to carry on these activities in accordance with the terms of their treaty within their treaty area.

8.2 CULTURAL RESOURCES

Black Sturgeon River Provincial Park is within the boundaries of lands covered under the Robinson-Superior 1850 Treaty. The Rocky Bay First Nation is located on the southeast shore of Lake Nipigon. Ontario Parks understands that Rocky Bay First Nation has traditional interests within the northern portion of the park. There are no formal land claims regarding Black Sturgeon River Provincial Park at this time.

The focus of cultural/heritage representation in Ontario Parks is the protection of significant landscape-related cultural resources. Black Sturgeon River Provincial Park contains 26 archaeological and historic sites, representing the Laurel culture (Initial Woodland), Terminal Woodland and recent history periods. Cultural resources will be managed to ensure their protection, and to provide opportunities for heritage appreciation and research where these activities do not impair the resource. This will be achieved through zoning and by controlling any recreational activities, development and research that may occur in these areas.

Ontario Parks will continue to work with the Ministry of Culture in the inventory, protection and maintenance of archaeological and historic sites. If deemed appropriate for the protection and preservation of cultural resources, such inventory may include excavation of archaeological sites. Excavation by authorized licensed personnel with appropriate research permits will be conducted under the approval and supervision of the above Ministry. Upon completion of an excavation, the site or portions of the site will be returned, to the extent possible to their original condition, or will be developed for the purposes of interpreting the cultural resources of the site. The type and extent of such development will be determined by the findings from the excavation.

Periodic inspection of significant sites will occur with protective controls established as required. The removal of artifacts or

destruction of historical features is illegal and prohibited. Additional significant archaeological discoveries may necessitate alterations to future development plans and/or park zoning.

9.0 OPERATIONAL POLICIES

Black Sturgeon River Provincial Park is currently a non-operating park. The park has no budget, nor additional staff, beyond the park superintendent.

Operations policies deal with topics such as natural heritage education, recreation management, and the provision of recreation services, business planning and research. The park operating plan provides park staff with the necessary information required to operate the park on a day-to-day basis. In addition to addressing operations policies, the park operating plan will include such topics as budget, staffing, maintenance schedules, enforcement and emergency services. The provisions of the operating plan will be consistent with the approved Ontario Provincial Parks Minimum Operating Standards (1992). The park operating plan will be reviewed annually and revised as required. For more information, please see Section 9.3 and 11.3.

A sign plan will be prepared, including a park map.

9.1 NATURAL HERITAGE EDUCATION

The goal of the Natural Heritage Education (NHE) program is to develop visitor awareness and appreciation of Ontario Parks' natural and cultural heritage, fostering a commitment to its protection for all generations. Opportunities to do so will be educational and recreational, informal, and accessible to all people.

The objectives of the Natural Heritage Education program are to provide basic information in all parks; interpretation of Ontario's natural and cultural heritage in provincial parks; and outdoor recreation in representative landscapes in Ontario. There are three levels of NHE service in the provincial parks' system: self-use, seasonal, and major activity. Black Sturgeon River offers a self-use level of programming.

9.1.1 PARK INFORMATION

If the park becomes operational, a public information program may be initiated (park tabloid and the Ontario Parks website). It will provide visitors with information about the park and its resources, environment and facilities. This information will emphasize the visitor's role in maintaining the natural environment of the park, appropriate behaviour in the park, safety in the outdoors, and nuisance animals. Park literature will also advise visitors about commercial services and attractions in the local area and other provincial parks.

Other educational material that could be provided includes:

- Live release survival rates and recommended handling techniques for fish in the Black Sturgeon River;
- Brochure(s) and signage about the dangers of introducing exotic species; and
- Brochure(s) explaining how human disturbance impacts species at risk in the park.

The park map and brochures enable visitors to safely explore and use the park. A *"respect the environment"* ethic is promoted in order to minimize human impact on the park environment. The importance of respecting other users is also stressed.

9.1.2 INTERPRETATION

Interpretive programs and facilities provide park visitors with a greater understanding of the natural and cultural features of Black Sturgeon River Provincial Park. Printed material, self-use facilities and informal personal contact will be the primary means of interpretation. The park's primary interpretive theme relates to its geology and how this geology has affected cultural activities. Other themes include Pottery / lithics of Terminal Woodland Period (1000 AD), European Trade goods of early contact (1600 AD), and North Shore Lake Superior log drives (1919-1962AD), as well as the park's life and earth science features. Innovative

ways of cooperative portrayal of these themes will be pursued with other agencies or partners.

9.1.3 RECREATION

Basic recreation information provided on the park map will acquaint visitors with the attributes of the park, its dangers and safety considerations.

9.2 RECREATION MANAGEMENT

Recreation management provides a variety of recreational opportunities while aspiring to minimize negative environmental impacts in recognition of the park's significant landscape. Recreational activities that are incompatible with the park goal or with specific zones are prohibited or restricted. Prevention and control of such activities will be achieved through education of park visitors concerning appropriate uses in the park in general and within specific zones (Figure 15 and Table 31).

9.2.1 BLACK STURGEON DAM

This area will be managed for day-use only. It provides for picnicking, fishing and sunbathing opportunities. The area will be monitored to ensure its continued viability; this could include construction of vault toilets and other necessary improvements to bring it to Ontario Parks' operating standards.

9.2.2 CAMP 42 ROAD

The access point at the bridge along the Camp 42 road will be managed to provide access to the river as well as camping opportunities associated with interior use of the park. The sustainable forest licence holder will be permitted to continue normal maintenance associated with the upkeep of a primary forestry road, included roadbed improvements and ditch brushing and clearing in accordance with provisions of the *Environmental Assessment Act*.

9.2.3 CAMP 1

The old bridge site by Camp 1 will be managed as a paddling access point to the Black Sturgeon River. The beach area along

Eskwanonwatin Lake will be managed for day use only, emphasizing swimming, picnicking and sunbathing. This beach area will be defined with physical barriers to eliminate vehicular impacts. This physical definition will also include an appropriate boat launch facility somewhere along the shore of Eskwanonwatin Lake. The grass-covered clearing and back beach will be managed for parking and campsites, which may include a campground. The development of facilities at these sites will be undertaken subject to site planning, business planning and resources.

9.2.4 SPLIT RAPIDS AND NONWATIN LAKE

The access points on Nonwatin Lake and Split Rapids area of the Black Sturgeon River will be managed for day-use activities only. An interior campsite is available just north of the access point on Nonwatin Lake, and on the southwest corner of Black Sturgeon Lake. Car camping opportunities are available at Camp 1 and the Research Station site.

9.2.5 CLIMBING SITE NEAR NONWATIN LAKE

Canadian Outward Bound Wilderness School has developed a small climbing site north of Nonwatin Lake. Rock climbing is not normally permitted within NR zones of waterway class parks. However, existing rock climbing activity, north of Nonwatin Lake will be permitted to continue consistent with *Ontario's Living Legacy Land Use Strategy*. No new climbing routes will be explored or developed in Black Sturgeon River Provincial Park because of wildlife concerns, such as bird nesting sites. A detailed inventory will be conducted to assess the extent of and damage to vegetation caused by existing climbing routes. This inventory will verify the occurrence of arctic alpine plants.

Small vault toilets may be considered if the use of the climbing routes on Nonwatin Lake and associated impacts warrant action.

The superintendent will ensure the following steps, in accordance with park policy PM 2.47, are taken before organized groups rock climb in Black Sturgeon River Provincial Park:

- 1) In consultation with recognized organizations or certified instructors determine the potential risk to, and safety of, participants and other park users including:
 - Safety records of activity organizations
 - Safety record of similar activities in other locations
 - Systems for detecting and correcting hazards
 - Involvement by national and/or regional associations
 - Availability of qualified personnel; and
 - Implementation of and compliance with accepted peer safety practices.
- 2) Determine what, if any, insurance coverage may be required, ie: third party liability clause.
- 3) Ensure emergency procedures are established and included in the park emergency plan.

9.2.6 BOAT LAUNCH AT SPRUCE RIVER

This area will be managed as an access point with car camping opportunities. Currently, users of the area impact on the sensitive ridge and swale community adjacent to the site (see 7.3.2 for further information). Physical boundaries and signage will be constructed to keep people away from the nature reserve. Once the research station is rehabilitated with appropriate boat launching facilities, this camping and access point will be closed.

9.2.7 OUTWARD BOUND

This area will continue to be operated by the Canadian Outward Bound Wilderness School property, under a lease that expires in 2005. The designation of the property as a development zone will allow for renewal of

the lease or a comparable occupancy arrangement.

9.2.8 RESEARCH STATION

The long-term vision for this area is to be managed as an access point with camping opportunities. The area requires that the buildings are physically removed, and the soil tested for contamination and possibly removed. Constructing vault toilets, campsites and a boat launch could further improve this site. Once the site is rehabilitated, the boat launch, campsites and access point at Spruce River boat launch will be closed to protect the ridge and swale community.

9.2.9 NORTH END OF BLACK STURGEON LAKE AND BOAT LAUNCH

The boat launch on the northwest corner of the lake and the entire park on the north shore of Black Sturgeon Lake will be managed to provide access points and car camping opportunities. These areas need to be physically defined to prohibit vehicular access to the beach. Ontario Parks will monitor the area to assess the need for other facility improvements, such as vault toilets.

The development of campsites or vault toilets at these sites will be undertaken subject to site planning and business planning.

9.2.10 MOTORBOAT USE

Motorboats are permitted within Black Sturgeon River Provincial Park.

9.2.11 TRAILS AND PORTAGES

Most of the portages identified in the district canoe route brochures are obscured with overgrown vegetation and suffer from trail erosion. To restore the high-quality experience of the users, trails should be regularly maintained through blazing, brushing and trail bed improvements. This work will be completed by park staff, through partnerships or in cooperation with other government programs, such as Forest Fire, Ontario or Stewardship Rangers.

9.2.12 WINTER USE

Winter use of Black Sturgeon River Provincial Park is dominated by day-use cross-country skiing and snowshoeing. Self-directed, unstructured cross-country skiing and snowshoeing is allowed in the park. Canadian Outward Bound Wilderness School operates winter programs highlighting winter camping, dog sledding and cross-country skiing.

Potential impacts of dog sledding activities include: tree bough collection for bedding, firewood collection, canine excrement and additional trail clearing. To ensure a high-quality winter experience, impacts to trails and campsites will be monitored on an on-going basis, subject to available resources.

If winter activities compromise values in the park, use may be modified or restricted.

A portion of the Trans-Ontario Provincial System (TOPS) snowmobile trail passes through the access zone of Black Sturgeon River Provincial Park. It uses the existing hydro utility corridor. Snow machine use in the park is restricted to this corridor. For further information about this trail, please refer to section 10.5 and 11.2.

9.2.13 GREATER ECOSYSTEM

Within the context of the greater ecosystem, it is important to consider the ecological, social and economic relationships that Black Sturgeon River Provincial Park has with the surrounding area. Social and economic links include the Town of Nipigon, the Town of Red Rock, and the City of Thunder Bay whose residents and businesses either visit the park and/or utilize the park as an anchor/draw for recreation activities and/or for business opportunities.

Examples of recreation activities that cross the park boundaries include the use of the Trans-Ontario Provincial System snowmobile trail, and the Black Sturgeon River as a fishing, hunting and paddling corridor. Associated groups include Canadian Outward Bound Wilderness School; Lakehead University; and the Canadian Forestry Service. Ontario Parks

will provide support in the form of information to park visitors and participation by staff in local and regional initiatives to assist in the coordination of recreation opportunities that are compatible with park values. Ontario Parks will seek to maintain a supportive working relationship/dialogue with groups and agencies that share the greater ecosystem.

9.3 TOURISM SERVICES

The development of tourism operations such as campground development, alternative accommodation, food and beverage services, recreation equipment rental/sales and retail sales or additional services such as more active management of the park, will be determined through business planning, in conjunction with the zone and park marketing plan. The development of tourism operations is subject to available resources.

Park staff will monitor visitor needs and customer service. Any new or additional services, such as more active management of the park, will be implemented through the normal business and work planning processes. Analysis will include the review of impacts of new services on the surrounding municipalities and businesses.

9.4 MARKETING

A marketing plan may be developed for Black Sturgeon River Provincial Park in accordance with established Ontario Parks policy, when funding and resources become available. It will be reviewed annually and revised as required. Marketing activities will be consistent with the zone marketing plan.

The objectives of the marketing plan are protection of the park values as well as:

- To capitalize on the park's natural and cultural features in order to provide visitors with a unique outdoor experience within the park goal and objectives;

- To optimize the local, regional, provincial, national, and international markets for the park;
- To encourage park visitation and the use of the park as a catalyst to stimulate the local and regional economy;
- To encourage park shoulder season use and visitation to low use areas of the park but in keeping with the park goal and objectives;
- To work cooperatively with local commercial establishments;
- To work cooperatively with municipal, regional, and provincial marketing travel and tourism associations;
- To encourage use by non-park users; and
- To maintain or improve on existing levels of park use by visitors.

9.5 RESEARCH

Ontario Parks' research and information needs relate directly to the Ministry of Natural Resources' mandate and the provincial parks' goal and objectives. Park-based research needs to address the wide range of environmental, social and economic factors necessary to administer an ecologically sustainable system of parks. It is also important that research activities address the demand for good quality outdoor recreation experiences and customer satisfaction.

Research information needs are diverse. They cover the full spectrum of geological, biological, ecological, cultural and social sciences.

Scientific research and monitoring by qualified groups and individuals which contributes to the knowledge, inventory and identification of natural and cultural features and to environmental and recreational management objectives will be encouraged where appropriate. Subjects of particular interest to Black Sturgeon Provincial Park include archaeology, geomorphology and geology, as well as life science studies.

All research programs must be compatible with the park's goal, objectives and zoning prescriptions. Research projects require prior approval and must be conducted in accordance with MNR policy concerning research in provincial parks. Research must also meet all other applicable provincial requirements. Park staff at the zone office will monitor these research programs. Any archaeological research will also require approval and monitoring by the Ministry of Culture. Should provincially or nationally significant features/resources be found, the management plan may be amended to ensure that protection will be provided through appropriate zoning or revision of plan policies.

Park user surveys will address levels of satisfaction, needs assessment, demographics, spending patterns and user profiles.

10.0 DEVELOPMENT POLICIES

Development policies identify priorities for new development as well as redevelopment of existing facilities. Development is implemented through business and work program planning, based on priority and subject to the availability of human and financial resources, and in accordance with approved site and development plans that detail the location, type and extent of the development permitted.

Ontario Parks will:

- Work in conjunction with the Ministry of Culture to conduct archaeological site assessments in the area of the proposed development. Should sites be known or discovered to exist in an area, inventory of the site(s) will occur; and
- Undertake earth and life science inventories so that development impacts can be mitigated.

No development will take place in nature reserve zones except for necessary signs, trails and facilities that mitigate human impacts. Small vault toilets may be considered, as a mitigating facility, if the use of the climbing routes on Nonwatin Lake and associated impacts warrant action.

10.1 CIRCULATION

The construction of new roads, bridges and utility corridors for park purposes will be directed by approved implementation and site plans. Such projects will be permitted in the development zones only. Construction will be closely monitored.

Maintenance of existing roads in access zones will be permitted. All other roads will be decommissioned or allowed to naturally abandon.

The construction of new trails in the natural environment and nature reserve zones will be subject to approved site plans.

10.2 ACCESS POINTS AND CAMPSITES

Ontario Parks will continue to assess the viability of access points, campsites at access points and interior campsites in the park to determine if they should be closed, maintained or improved. Physically defining the boundary of campsites and access points will be encouraged. The requirement for additional capacity will be monitored on an ongoing basis. Development of additional sites will comply with Ontario Parks' standards, guidelines governing capital development, and be in accordance with approved site plans and *Environmental Assessment Act* requirements. Part of the ongoing assessment will determine the need for additional campsites at access points.

The construction of campgrounds will be permitted in the development zones only. Improvements to access points or campsites associated with access points will be permitted in access zones only. Construction of interior campsites will be permitted in access, development and natural environment zones only.

The closing of access points that are threatening park values will be encouraged. This will normally involve rehabilitation efforts to mitigate any future use of the site.

10.3 VAULT TOILETS

Ontario Parks will monitor the requirement for access point vault toilets at the north end of Black Sturgeon Lake, the research station, on Spruce River, Split Rapids, Nonwatin Lake, Camp 1, Camp 42 and the Black Sturgeon Dam on an ongoing basis. Small vault toilets may be considered if the use of the climbing routes on Nonwatin Lake and associated impacts warrant action. Development of additional facilities will comply with Ontario Parks' standards, guidelines governing capital development, and be in accordance with approved site plans and *Environmental Assessment Act* requirements.

10.4 DAY-USE AREAS

Ontario Parks will continue to monitor the quality of the day-use areas at Split Rapids, Nonwatin Lake, and the Black Sturgeon Dam. When required, appropriate upgrading will be undertaken to maintain the area to Ontario Parks' standards.

The development of parking spaces, vault toilets or picnic shelters at these sites will be undertaken subject to site planning, business planning and available resources.

10.5 TRAILS AND PORTAGES

Most of the portages identified in the district canoe route brochures are obscured with overgrown vegetation and suffer from trail erosion. To restore the high-quality experience for the users, trails should be regularly maintained through blazing, brushing and trail bed improvements. This work will be completed by park staff, through partnerships or in cooperation with other government programs, such as Forest Fire Rangers or Ontario/Stewardship Rangers.

A Trans-Ontario Provincial System (TOPS) snowmobile trail (Route # AD) crosses a small portion of the park at the most southern hydro transmission corridor. The trail uses the corridor until it crosses the river then diverts south. The local club maintains an "ice bridge", where they have manicured the slope and established a thoroughfare.

The local snowmobile club has expressed some concern regarding the safety of ice bridges and water crossings in areas like Black Sturgeon River. Because of the OLL commitment to permit existing recreational activities, the trail may be relocated elsewhere in the park due to environmental or safety concerns, and a relocation would be subject to an approved site design and sufficient planning consistent with the *Environmental Assessment Act* and *Provincial Parks Act*.

The preferred method of addressing ice bridge safety concerns, according to the Ontario Federation of Snowmobile Clubs, is through the construction of single-span

bridges. The criteria in selecting a suitable bridge location are:

- The width of the crossing needed to span the river;
- Historic water levels and signs of log debris or ice in floods;
- Suitable approach conditions to make a smooth transition onto the bridge;
- Proximity to the existing trail system to minimize the length of new trail required;
- Suitable foundations to minimize construction work;
- Site conditions favourable for construction to meet Ministry of Natural Resources, Department of Fisheries and Oceans, Coast Guard and Ministry of the Environment environmental standards; and
- Access for construction equipment to both sides of the structure.

Two possible locations being considered by the snowmobile club are the narrowing of the river just south of the Black Sturgeon Dam and the gas pipeline corridor that forms the southern boundary of the park. In keeping with the intent of the *Ontario Provincial Parks: Planning and Management Policies* (MNR 1992), the number of road crossings should be minimized where possible and they should be managed to reduce their impact on recreational and aesthetic values. To minimize impacts on the park values, the bridge could be located outside of the park boundary. These options would be considered during the development of an Environmental Study Report.

10.6 UTILITY CORRIDORS

10.6.1 GAS PIPELINE

There are two natural gas pipeline corridors that cross Black Sturgeon River Provincial Park, one at the south end of the park, and the other between Eskwanonwatin Lake and the camp 42 bridge. Improvements or developments associated with the normal

maintenance and operation of this facility is permitted. Herbicide applications along these utility corridors will be discouraged for vegetation management. Mechanical and hand tending of vegetation in utility corridors will be encouraged. Existing utility corridors that pass through the park will continue to be a permitted non-conforming use and are required to remain in present locations.

New utility corridors will not be permitted.

10.6.2 HYDRO TRANSMISSION

There are two hydro transmission corridors that cross the south end of Black Sturgeon River Provincial Park and another line crossing the middle of the park associated with the pipeline (see 7.1.2 and 7.1.3 for further information). Improvements or developments associated with the normal maintenance and operation of this facility is permitted. Herbicide applications along these utility corridors will be discouraged for vegetation management. Mechanical and hand tending of vegetation in utility corridors will be encouraged. Existing utility corridors that pass through the park will continue to be a permitted non-conforming use and are required to remain in present locations.

New utility corridors will not be permitted.

11.0 PLAN IMPLEMENTATION AND REVIEW

In the implementation of the approved park management plan, Ontario Parks may pursue opportunities for partnerships involving other agencies and groups. Park development, operations and resource stewardship will be contingent upon the availability of funding and unforeseeable changes in priority or policy. Funding may be derived from a variety of sources, including corporate sponsorships and donations. Implementation of the management plan and operation of the park will meet the requirements of the *Environmental Assessment Act*, *Provincial Parks Act* and other pertinent legislation.

Unless otherwise identified in this document, implementation priorities may be established in subsidiary operating and resource stewardship plans. Preparation of these plans will involve the appropriate level of public consultation.

A list of implementation priorities follows. The list may be modified to accommodate unforeseen circumstances.

11.1 RESOURCE STEWARDSHIP

- Assessment of the condition of access points, trails and campsites, in order to establish baseline data and environmental impacts over time;
- Detailed life science inventories to confirm extent of arctic-alpine communities on exposed rock faces and talus slopes;
- Prepare a Black Sturgeon River Fisheries Plan;
- Prepare a vegetation and fire stewardship plan;
- Identify, protect and where appropriate, enhance spawning habitat for native species;
- Maintain, and where necessary, enhance riparian and bankside vegetation (vegetative and woody) in order to maintain the integrity and stability of river banks and as a long-term source of wood to the channel;
- Work with stakeholders to develop management actions to address any potential overharvest of species under stress;
- Assist with implementing Lake Superior rehabilitation plans for coaster brook trout, walleye and lake sturgeon;
- Provide educational material concerning live release survival rates and recommended handling techniques;
- Conduct studies with partners to obtain and analyze, resource and user information leading to improvements in the management of fish populations and habitat. Subject areas could include investigating: stock status of each species, movement patterns, spawning areas and time of spawn, overwintering areas and nursery areas;
- Investigate the perceived recent decline of brook trout in the Split Rapids-Nonwatin area;
- Continue to follow stocking and assessment plan to establish reproducing lake trout in Black Sturgeon Lake;
- Work with First Nations to obtain an accurate estimate of the level of subsistence harvest;
- Work with bait fishermen to determine the level of baitfish harvest;
- Conduct inventories and studies and develop and implement recovery plans for species at risk such as the northern brook lamprey and species of special interest such as the blackfin cisco (*Coregonus nigripinnis*), nipigon cisco (*c. nipigon sp.*);

- Initiate water quality, zooplankton and benthos studies with a goal of establishing long term trend through time monitoring stations at key locations;
- Provide the public with educational brochures and signage about the dangers of introducing exotic species and investigate methods for minimizing the risk (e.g. ban live bait); and
- Assist the Ministry of the Environment in posting fish consumption advisories at all access points on the river and assist in notifying the public of existing consumption restrictions.
- Investigate the need and suitability of a fish passage structure to allow lake sturgeon up Black Sturgeon River, including modifications to Black Sturgeon dam.

11.2 DEVELOPMENT

The following capital developments are listed in priority sequence:

- Physical definition of the parking areas and campsites at Camp 1, the access point by the ridge and swale community, the boat launch on Black Sturgeon Lake and along the north shore;
- Upgrading the road to Nonwatin Lake and Split Rapids access points;
- Closure of the Nonwatin Lake and Split Rapids access points and posting no camping;
- Rehabilitation of the Research Station site, and improving car camping opportunities by installing vault toilets, campsites and boat launch;
- Closure of the Spruce River access point and posting no use;
- Site inventory and plans for campsite and/or campground development at Camp 1, along the north shore, the boat launch on Black Sturgeon Lake and interior campsites;
- Evaluation of the snowmobile trail crossing;

- Preparation of a sign plan;
- Preparation of a park map; and
- Small vault toilets at the climbing routes on Nonwatin Lake.

11.3 OPERATIONS/ADMINISTRATION

- Prepare necessary documentation to allow rock climbing to continue as accord to PM 2.47
- Preparation of a park business plan;
- Preparation of a park operation plan
- Preparation of a park marketing plan/strategy; and
- Preparation of a park emergency plan.

11.4 PROJECT SCREENING

The *Environmental Assessment Act* requires that all park management activities conform to approved legislation, policy, procedures, guidelines and standards, including provision for public notice. The preparation of this park management plan constitutes the principal public review opportunity for activities and projects. Exceptions to this are projects where further study is required, or where a decision has been deferred to a subsidiary plan.

11.5 OPERATIONAL PROJECTS

Ontario Parks will base approvals for the mitigation of operational projects, such as campsite development, on the analysis of a supporting business case that will address both costs and long term benefits.

11.6 PLAN REVIEW AND AMENDMENT

The Black Sturgeon River Provincial Park Management Plan may be reviewed throughout its twenty-year life span, where warranted, to address issues or changing conditions.

A variety of monitoring programs will provide essential information concerning the effectiveness of approved policies. Such mechanisms as the collection of user statistics, periodic user surveys and park management audits will provide valuable information to ensure that policies remain current and relevant. Research findings and resource inventory work may aid in conducting plan reviews

12.0 PUBLIC CONSULTATION

Public consultation for the Lake Nipigon Basin Signature Site began in January 2001 with the Invitation to Participate (OMNR 2001). This was followed by a series of open houses to present the background information in June 2001. A stakeholders meeting to discuss management options and ideas was done in September, 2001. Another series of open houses were conducted to present the management options in December 2001 and January 2002. A variety of stakeholders, interest groups and individual members of the public have expressed an interest in the project including First Nations, anglers and hunters, cottagers, commercial fishermen, forestry, mining and utility companies, recreational, naturalist and environmental groups. Discussions have also been held with the Nipigon Watershed Advisory Committee and with Nipigon West, Nipigon East, Spruce River and Armstrong Local Citizens Committees.

Input was received in the form of Letters (20+), Open house comment sheets (55), questionnaires (31), e-mails (10), briefs (3), proposals (1), data input and correction forms (9), as well as through numerous meetings and telephone calls. Approximately 240 people attended the June, 2001 Open Houses located in Nipigon, Beardmore, Armstrong and Thunder Bay. Approximately 245 people attended the December, 2001 Open Houses located in Nipigon, Beardmore, Armstrong, Thunder Bay and Biinjitiwaabik Zaaging Anishinaabek. Approximately 207 people attended the September, 2002 Open Houses located in Nipigon, Beardmore, Armstrong and Thunder Bay.

The dominant themes in the comments are reflected in the content of this park management plan and include:

- Crown land camping, specifically closure of the Spruce River boat launch;
- Existing hunting and trapping in the park;
- Garbage disposal site;
- Access to Lake Nipigon;
- Natural abandonment of roads and facilities;
- Arctic-alpine plant communities;
- Active management of the park;
- Fisheries in Black Sturgeon Lake and River, including a perceived decline of brook trout spawning between Split Rapids and Nonwatin Lake; and
- Shifting boundaries to include the mouth of the river.

This is the public's final opportunity to review the approved park management parent plan. For a period of 45 days, interested participants in the process have a final opportunity to determine if their concerns have been considered and addressed and to initiate an appeal concerning the plan contents where necessary.

Ontario Parks will retain on file reference copies of relevant background information, terms of reference, preliminary park management plan and the approved park management plan.

TABLE 31. POLICY REPORT - BLACK STURGEON RIVER PROVINCIAL PARK

ACTIVITY	PERMITTED	GUIDELINES
COMMERCIAL ACTIVITIES		
AGGREGATE EXTRACTION	No	
BAIT FISHING (commercial)		Existing use may continue
Existing	Yes	
New	No	
COMMERCIAL FISHING		
Existing	No	
New	No	
COMMERCIAL FUR HARVESTING		
Existing	Yes	
New	No	
COMMERCIAL HYDRO DEVELOPMENT	No	
COMMERCIAL TIMBER HARVEST	No	
COMMERCIAL TOURISM (e.g. outfitting services, outpost camps, resorts/lodges)		
Existing	No	
New	No	
ENERGY TRANSMISSION AND COMMUNICATIONS CORRIDOR		Existing utility corridors that pass through the park are required to remain in present locations. New utility corridors will not be permitted.
NEW:	No	
MINERAL EXPLORATION AND DEVELOPMENT	No	
WILD RICE HARVESTING		
Existing	No	
New	No	
LAND AND RESOURCE MANAGEMENT ACTIVITIES		
CROWN LAND DISPOSITION		Land disposition for commercial use may occur, under the authority of a land use permit or lease subject to approval through planning.
Private Use	No	
Commercial Use	Yes	
FIRE SUPPRESSION	Yes	Light on the Land fire suppression techniques are the preferred option when protecting sensitive features. All fires that threaten park visitor safety or park infrastructure will receive Full Response and sustained action until extinguished. In the absence of an approved Fire Management Plan or Interim Fire Response Strategy for these parks, fires on the mainland will generally receive a Full Response and Sustained action until extinguished. Modified Response could occur after consultation between the Park Superintendent and the Fire Executive Officer.
FISH HABITAT MANAGEMENT	Maybe	May be considered through planning of fisheries management plan.
FISH STOCKING		May be considered through planning of fisheries management plan. Please see Section 8.1.6 for more information.
Native Species	Yes	
Non-native Species	No	
INSECT/DISEASE SUPPRESSION	Yes	
INVENTORY/MONITORING	Yes	
PERSONAL USE PERMITS FOR WOOD HARVESTING	No	
PRESCRIBED BURNING	Yes	Prescribed burning may be used to meet ecosystem management objectives in the nature reserve and natural environment zones subject to a subscribed burn plan.

TABLE 31. POLICY REPORT - BLACK STURGEON RIVER PROVINCIAL PARK *continued*

ACTIVITY	PERMITTED	GUIDELINES
ROADS (non-park use)		
Existing	Yes	Where existing roads are essential for continued access beyond the park for forest management, mineral exploration or recreation purposes, and alternative road access does not exist, or road relocation is not feasible, existing roads will continue to be available for access. Continued use will include maintenance and may include future upgrading.
New	Yes	
		Where other existing access roads are essential for continued access to in-holdings (i.e. Land Use Permits, patent land, etc.) within or beyond the park boundary, and alternative road access does not exist, or road is not feasible, existing roads will continue to be available for access. Continued use will include maintenance. Crossings of waterway parks by new roads may be necessary. The number of crossings will be minimized where possible and they will be managed to reduce their impact on recreational and aesthetic values. Access may also be required for mineral exploration and development on forest reserves adjacent to the provincial park.
VEGETATION MANAGEMENT	Yes	Please see Section 8.1.3 for more information.
WATER CONTROL STRUCTURE		
Existing	Maybe	It may be favourable to remove the existing water control structure at the south end of the park or perform modifications that would enhance the migration of lake sturgeon back into the upper reaches of the watershed. Should be considered through planning of the fisheries management plan.
New	No	
WILDLIFE POPULATION MANAGEMENT	Yes	May be considered through future planning. Please see section 8.1.5 for more information.
SCIENCE, EDUCATION AND HERITAGE APPRECIATION		
DEMONSTRATION AREAS	No	
HISTORICAL APPRECIATION (self guided)	Yes	Support facilities to be identified through future planning.
NATURE APPRECIATION (self guided)	Yes	Support facilities to be identified through future planning.
PHOTOGRAPHY AND PAINTING	Yes	Support facilities to be identified through future planning.
RESEARCH	Yes	Subject to authorization..
WILDLIFE VIEWING	Yes	Use may continue, unless park values are threatened.

TABLE 31. POLICY REPORT - BLACK STURGEON RIVER PROVINCIAL PARK *continued*

ACTIVITY	PERMITTED	GUIDELINES
RECREATION ACTIVITIES AND FACILITIES		
AIRCRAFT LANDING (water)	No	
ALL TERRAIN VEHICLE USE		Existing all terrain vehicle use on authorized trails can continue, unless park values are threatened
On Trails	Yes	
Off Trails	No	
CAMPING	Yes	Camping permitted in certain zones. See Section 2.1 for more information.
HORSEBACK RIDING (trail)	No	Use may continue, unless park values are threatened.
HUNTING	Yes	Consult the Ontario Hunting Regulation Summary for specific local details.
MOUNTAIN BIKE USE	Yes	Use may continue, unless park values are threatened.
MOTOR BOAT USE		Use may continue, unless park values are threatened.
Private	Yes	
Commercial	No	
NON-MOTORIZED RECREATION	Yes	Use may continue, unless park values are threatened.
TRAVEL (canoeing, kayaking, hiking, cross-country skiing, snowshoeing)		
PRIVATE RECREATION CAMPS		
(Hunt Camps)		
Existing	No	
New	No	
ROCK CLIMBING	Yes	Existing rock climbing routes within NRI will be permitted to continue. New development of rock climbing routes are prohibited. Existing routes should be inventoried to assess the presence of arctic-alpine plants.
SAILING AND SAILBOARDING	Yes	Use may continue, unless park values are threatened
SCUBA AND SKIN DIVING	Yes	Use may continue, unless park values are threatened.
SNOWMOBILING		Existing snowmobile use on authorized trails can continue unless park values are threatened.
On Trails	Yes	
Off Trails	No	
SPORT FISHING	Yes	Consult the Ontario Recreational Fishing Regulations Summary for specific local details.
TRAIL DEVELOPMENT	Yes	Upgrading existing portages and hiking trails will be permitted. New portages and trails may be considered. New snowmobile trail(s) may be considered as part of an Environmental Study Report. Use may continue, unless park values are threatened.

Note: *The policies outlined in this table do not supersede any Aboriginal or treaty rights that may exist, or other legal obligations.*

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INSERT FIGURE (14)

FIGURE 14: SENSITIVE FEATURES (TILE 1)

INSERT FIGURE (15)

FIGURE 15: SENSITIVE FEATURES (Tile 2)

INSERT FIGURE (16)
FIGURE 16: SENSITIVE FEATURES (TILE 3)

INSERT FIGURE (17)

FIGURE 17: PARK ZONING (TILE 1)

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FIGURE 18: PARK ZONING (TILE 2)

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FIGURE 19: PARK ZONING (TILE 3)

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FIGURE 20: EXISTING DEVELOPMENT (TILE 1)

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FIGURE 21: EXISTING DEVELOPMENT (TILE 2)

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FIGURE 22: EXISTING DEVELOPMENT (TILE 3)

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FIGURE 14: SENSITIVE FEATURES (TILE 1)

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FIGURE 15: SENSITIVE FEATURES (Tile 2)

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FIGURE 16: SENSITIVE FEATURES (TILE 3)

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FIGURE 17: PARK ZONING (TILE 1)

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FIGURE 18: PARK ZONING (TILE 2)

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FIGURE 19: PARK ZONING (TILE 3)

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FIGURE 20: EXISTING DEVELOPMENT (TILE 1)

INSERT FIGURE (21)

FIGURE 21: EXISTING DEVELOPMENT (TILE 2)

INSERT FIGURE (22)

FIGURE 22: EXISTING DEVELOPMENT (TILE 3)

FIGURE 11: BOUNDARY MAP FOR NIPIGON RIVER CONSERVATION RESERVE

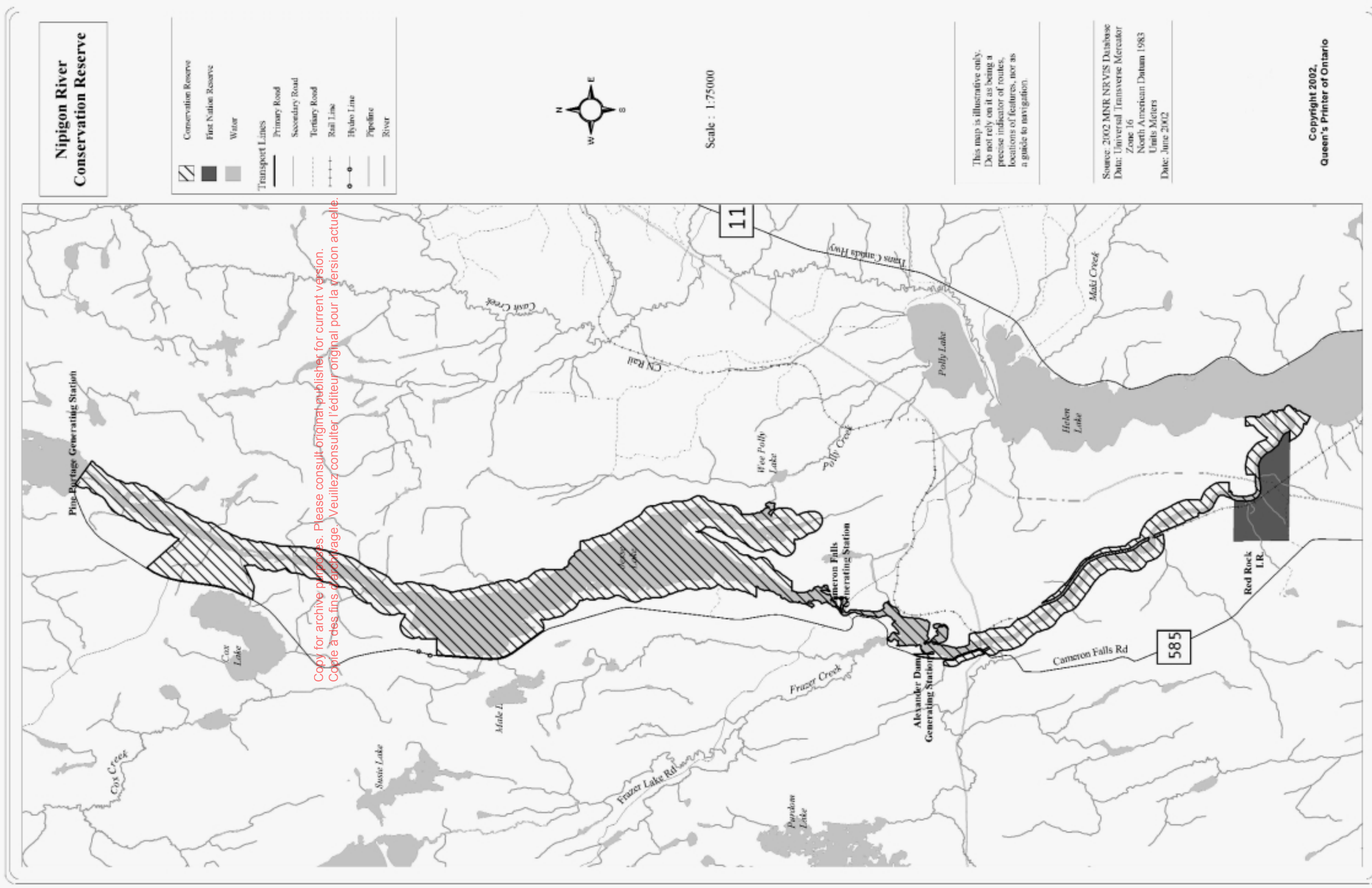


FIGURE 12: RESOURCE MANAGEMENT MAP FOR NIPIGON RIVER CONSERVATION RESERVE

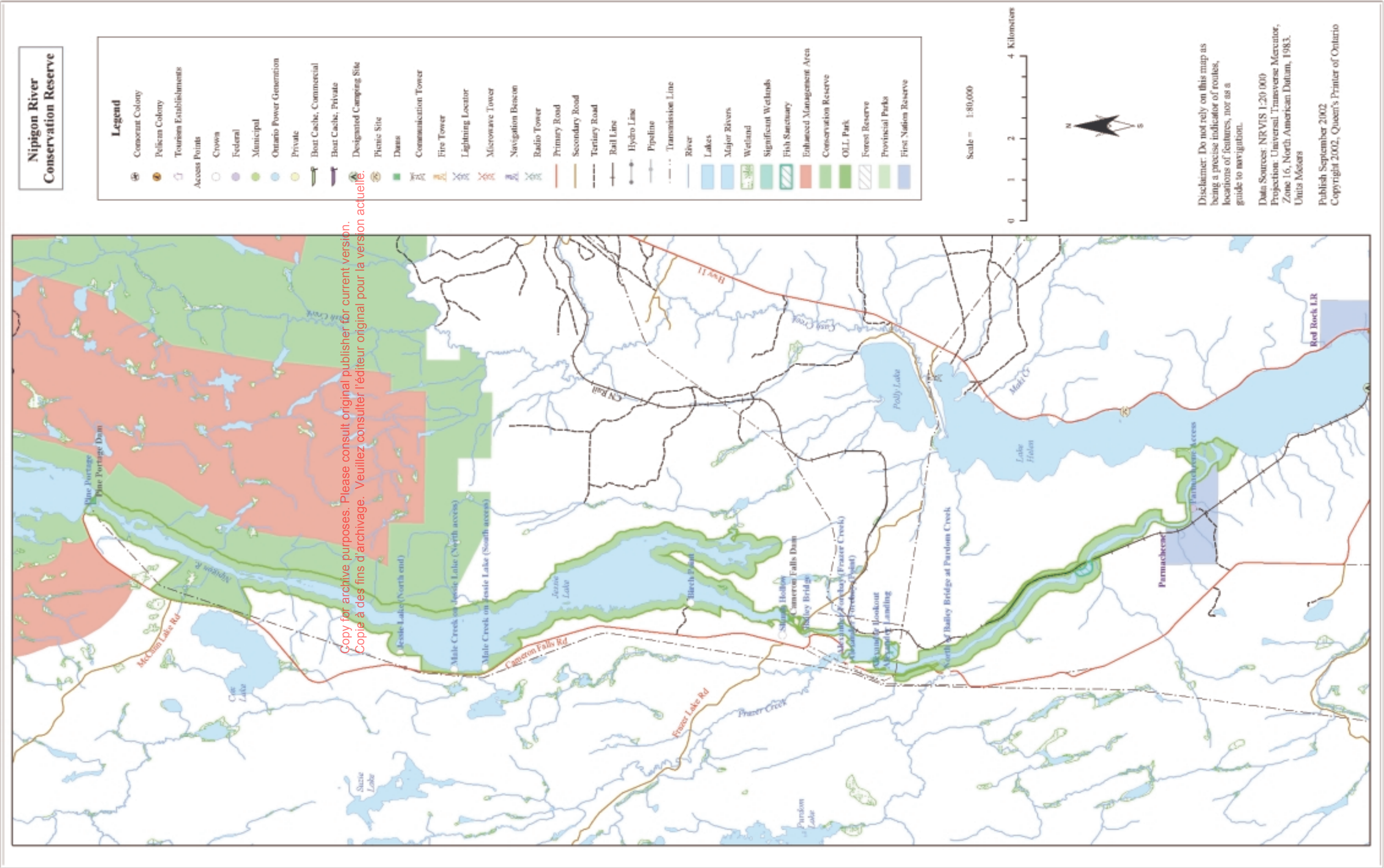


FIGURE 14: SENSITIVE FEATURES (TILE 1)

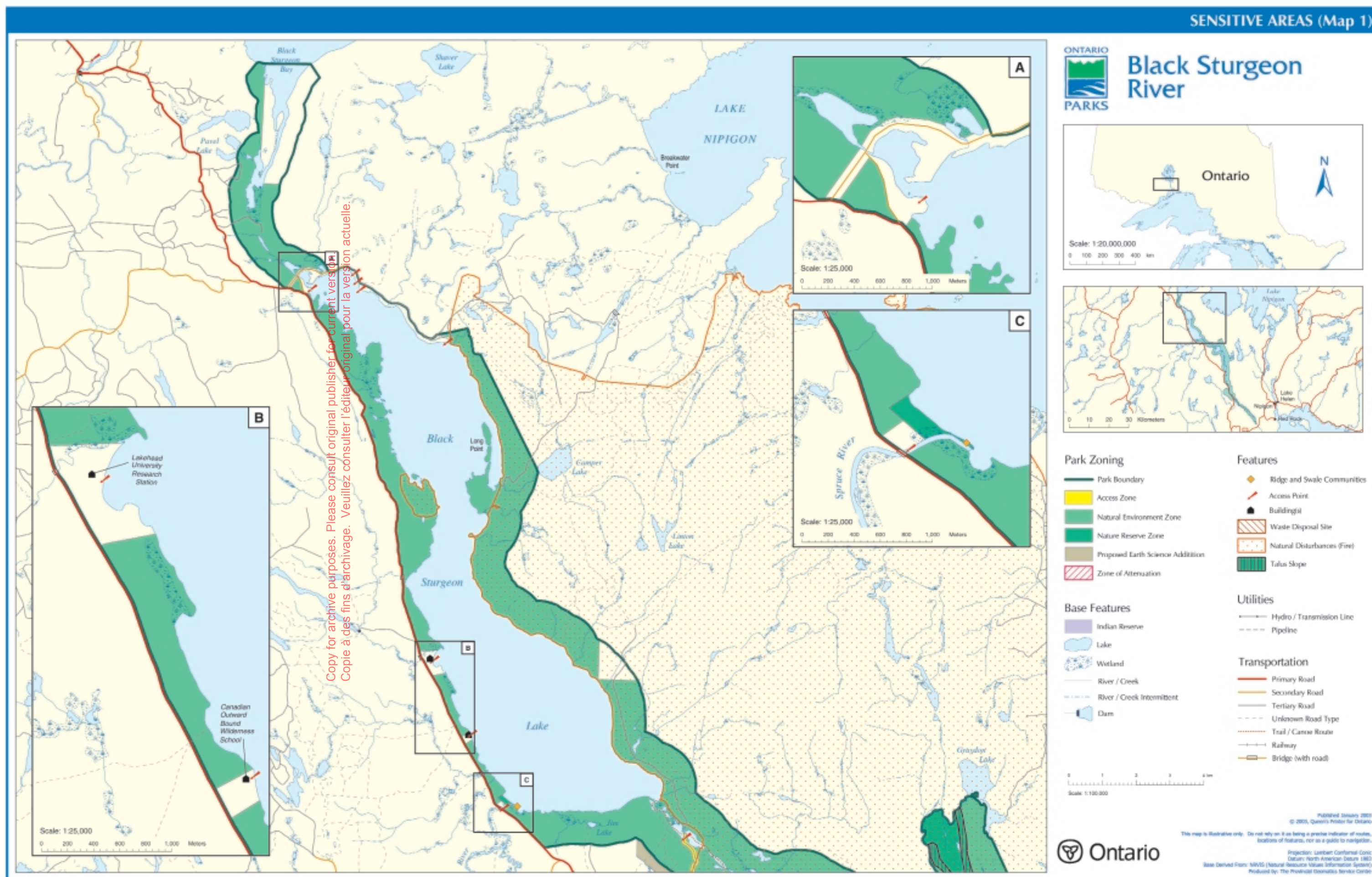


FIGURE 15: SENSITIVE FEATURES (TILE 2)

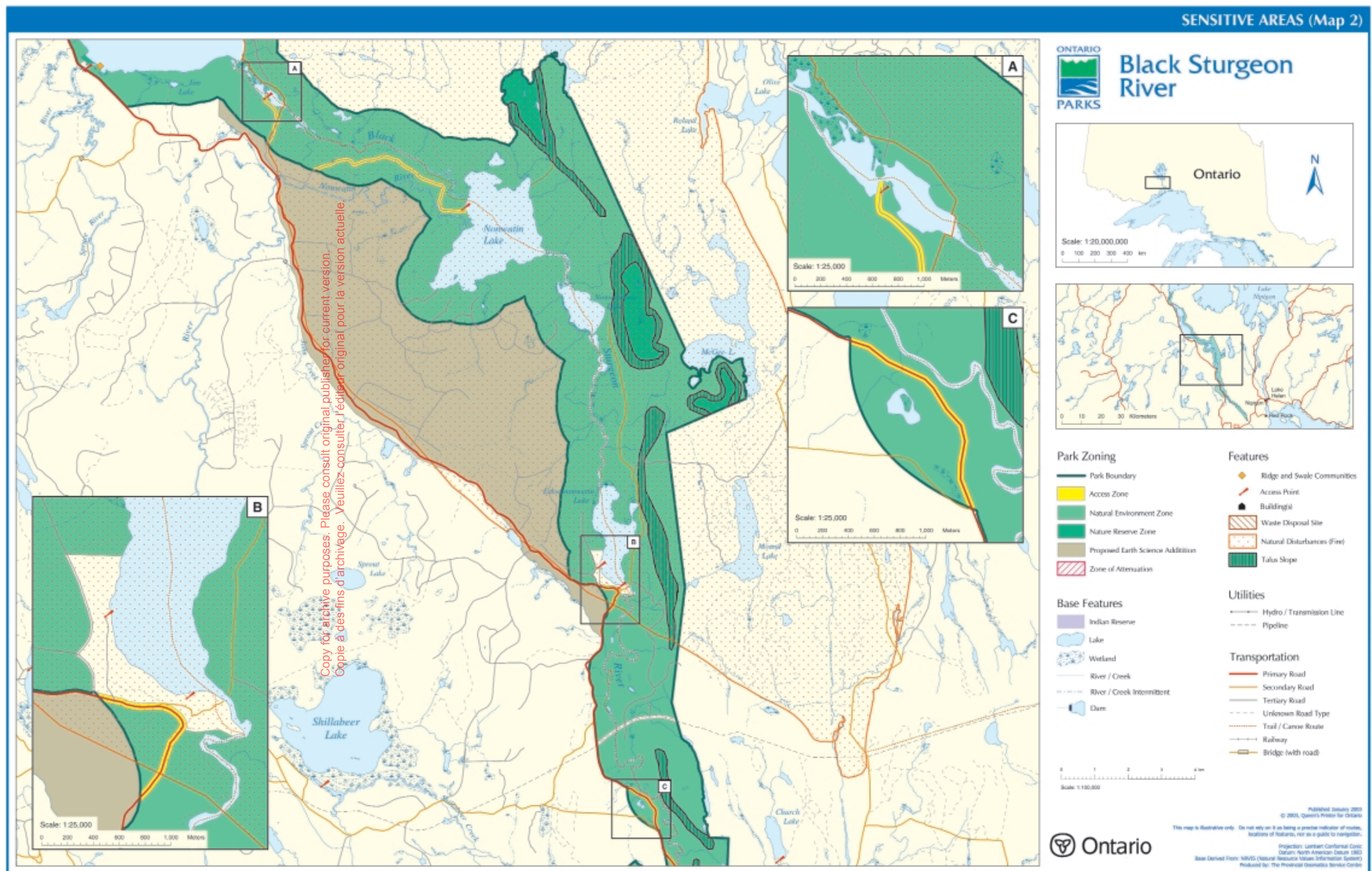


FIGURE 16: SENSITIVE FEATURES (TILE 3)

SENSITIVE AREAS (Map 3)

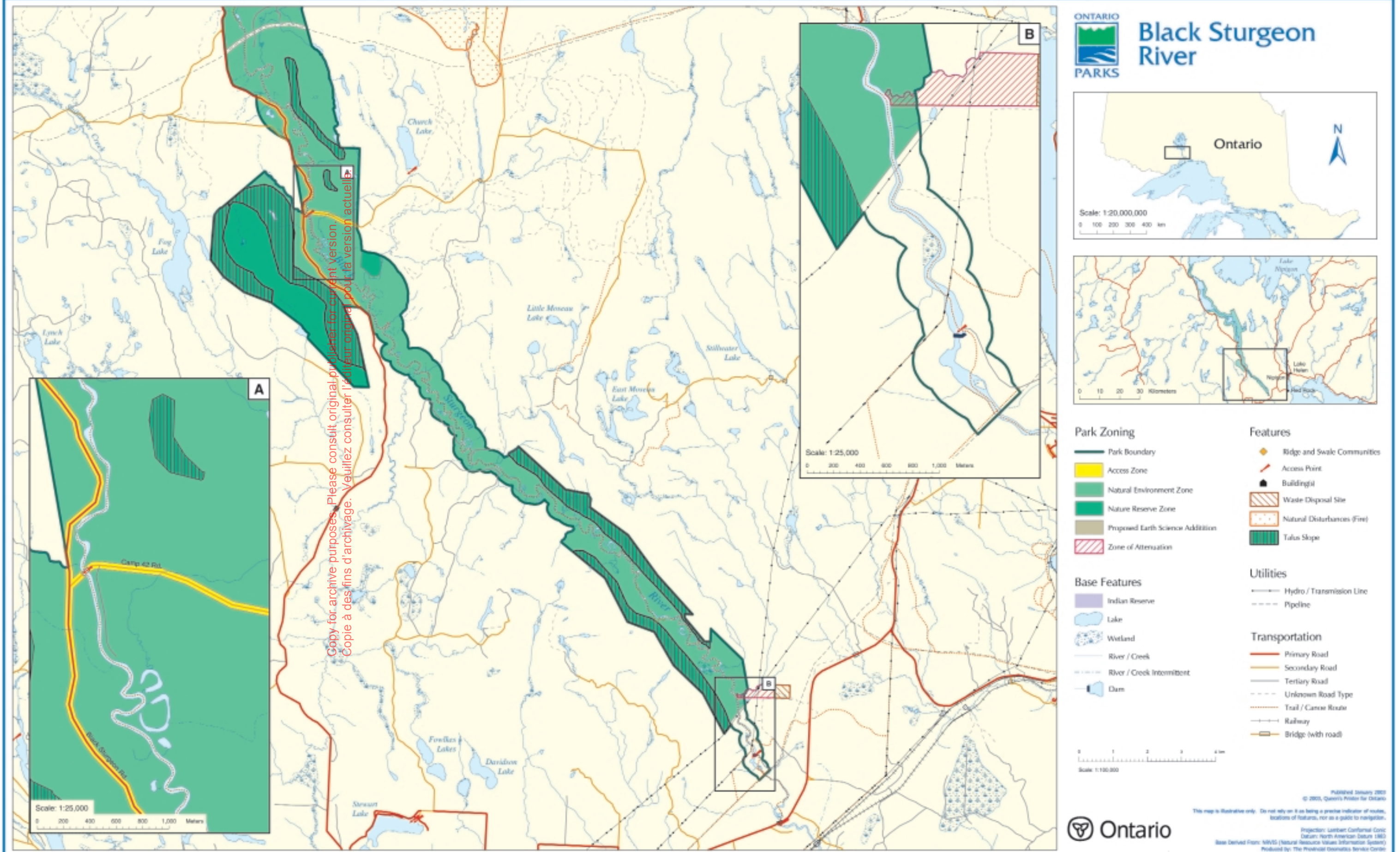


FIGURE 17: PARK ZONING (TILE 1)

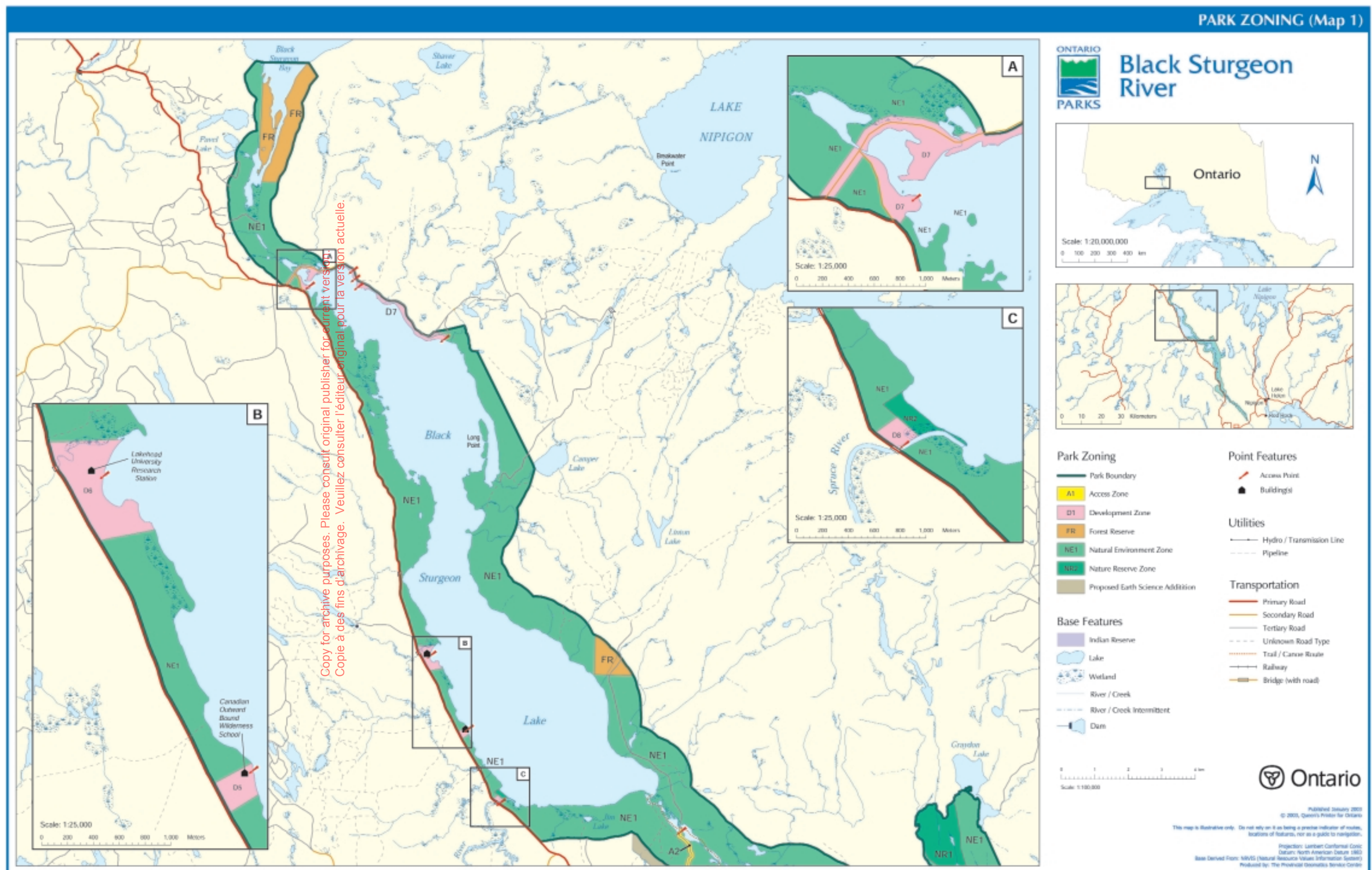


FIGURE 18: PARK ZONING (TILE 2)

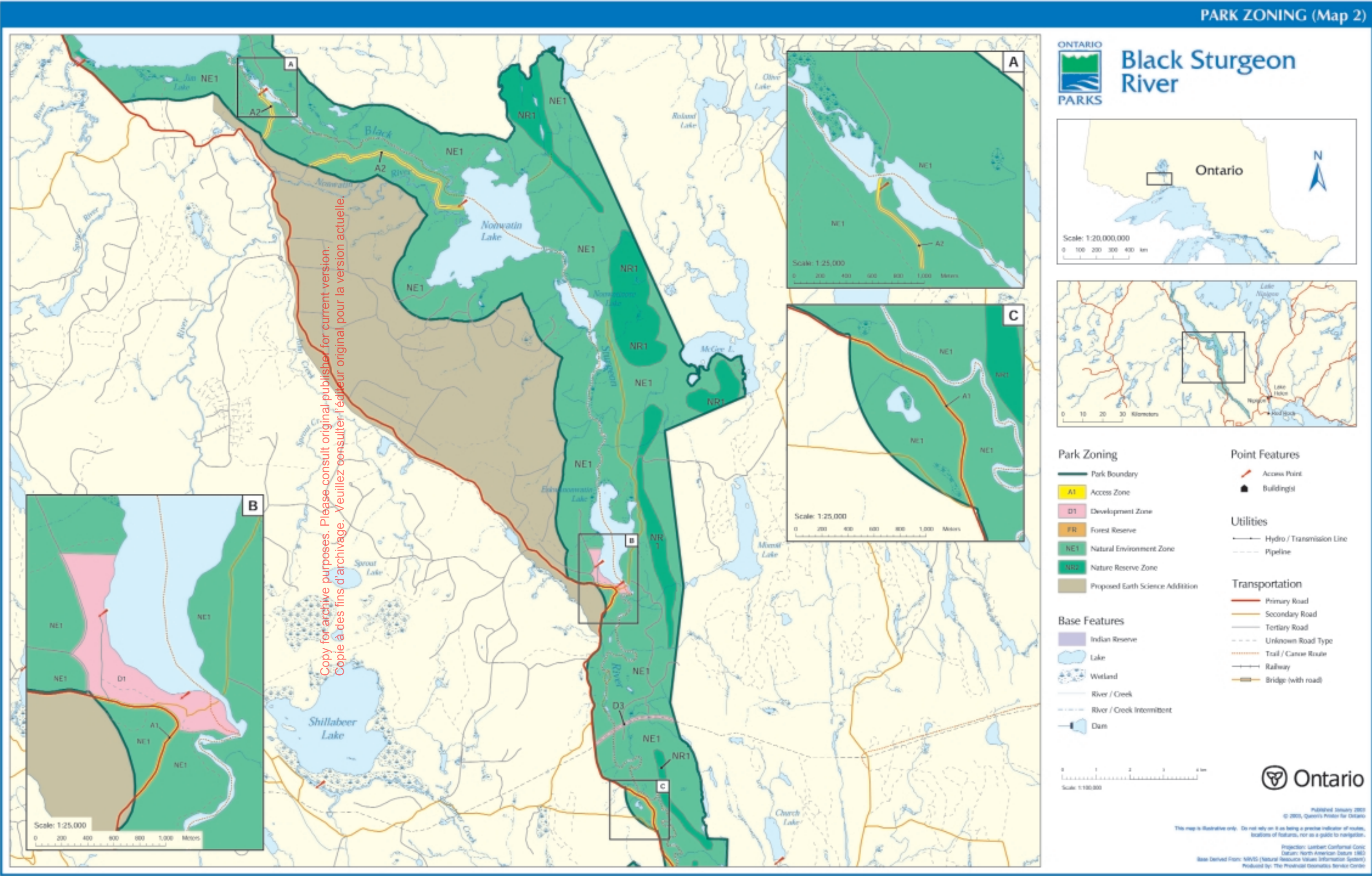


FIGURE 19: PARK ZONING (TILE 3)

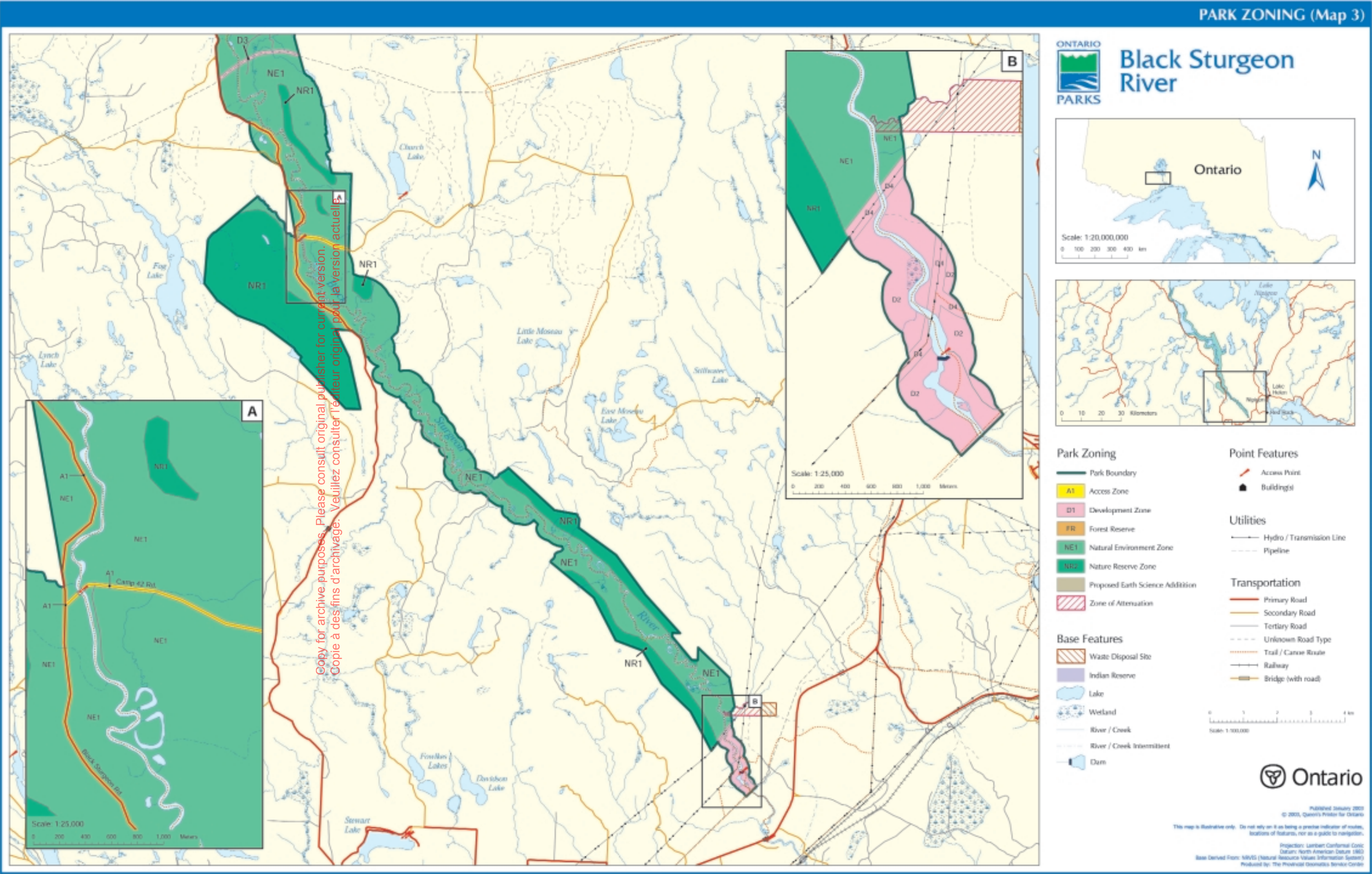
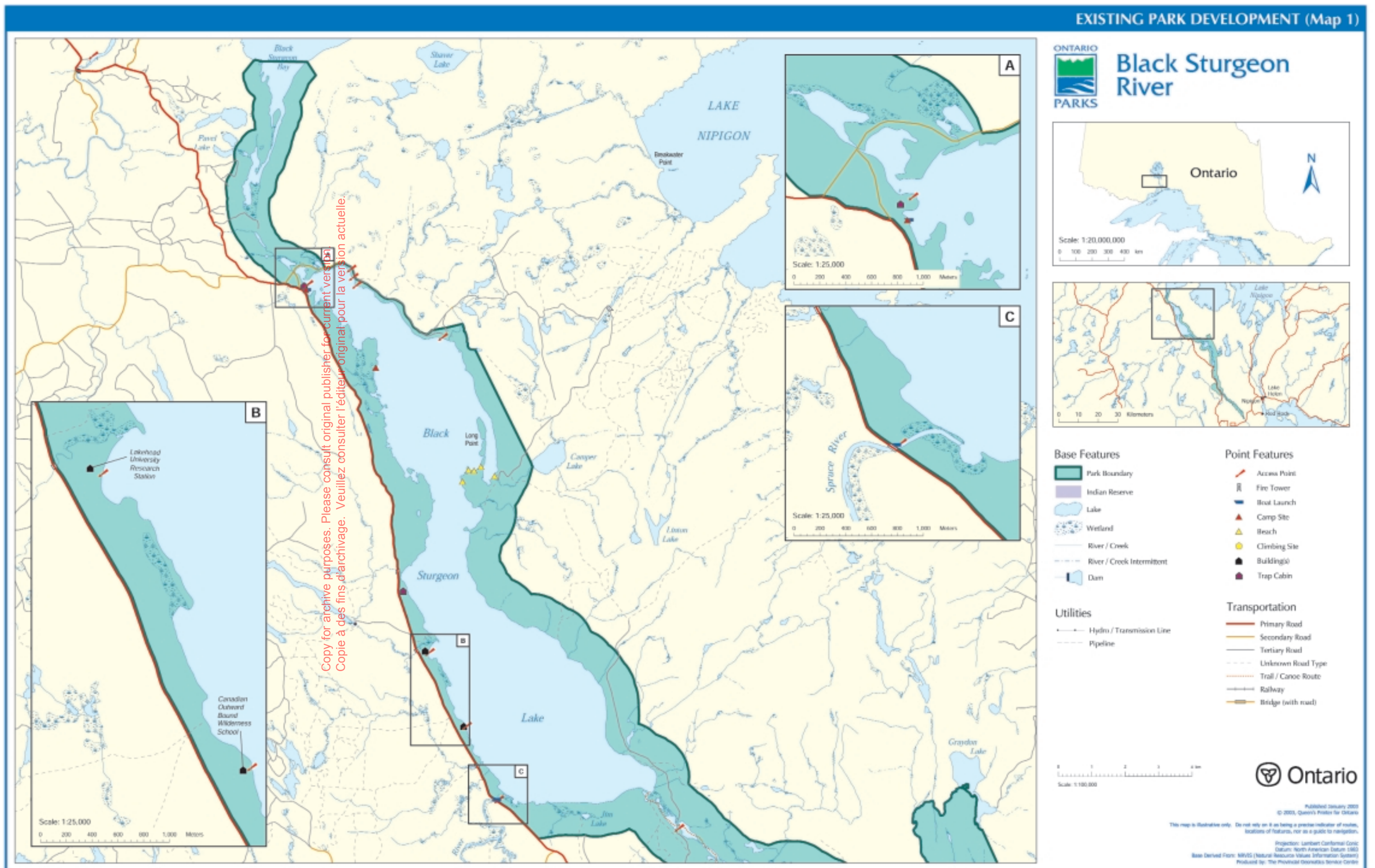


FIGURE 20: EXISTING DEVELOPMENT (TILE 1)



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FIGURE 21: EXISTING DEVELOPMENT (TILE 2)

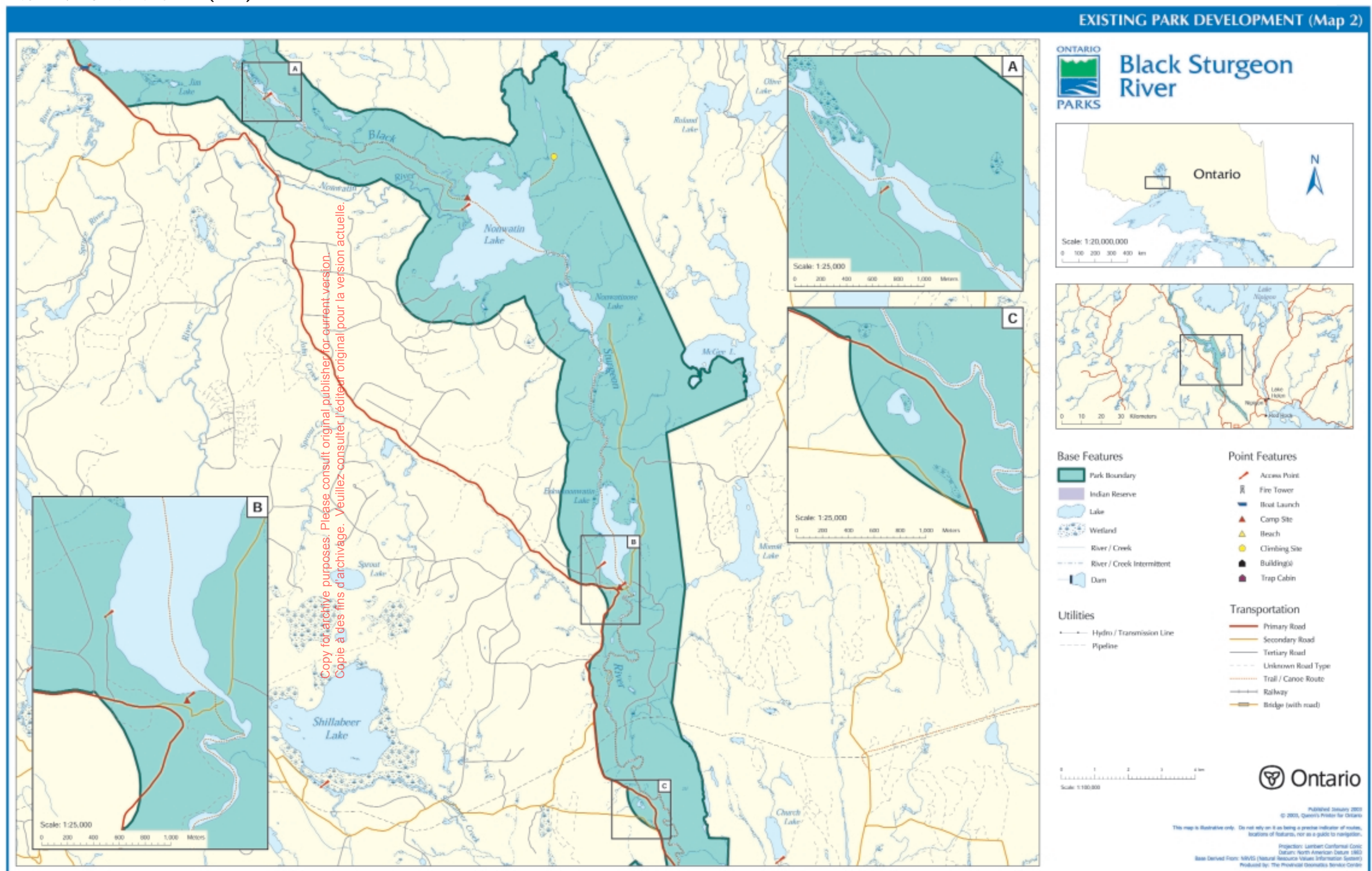
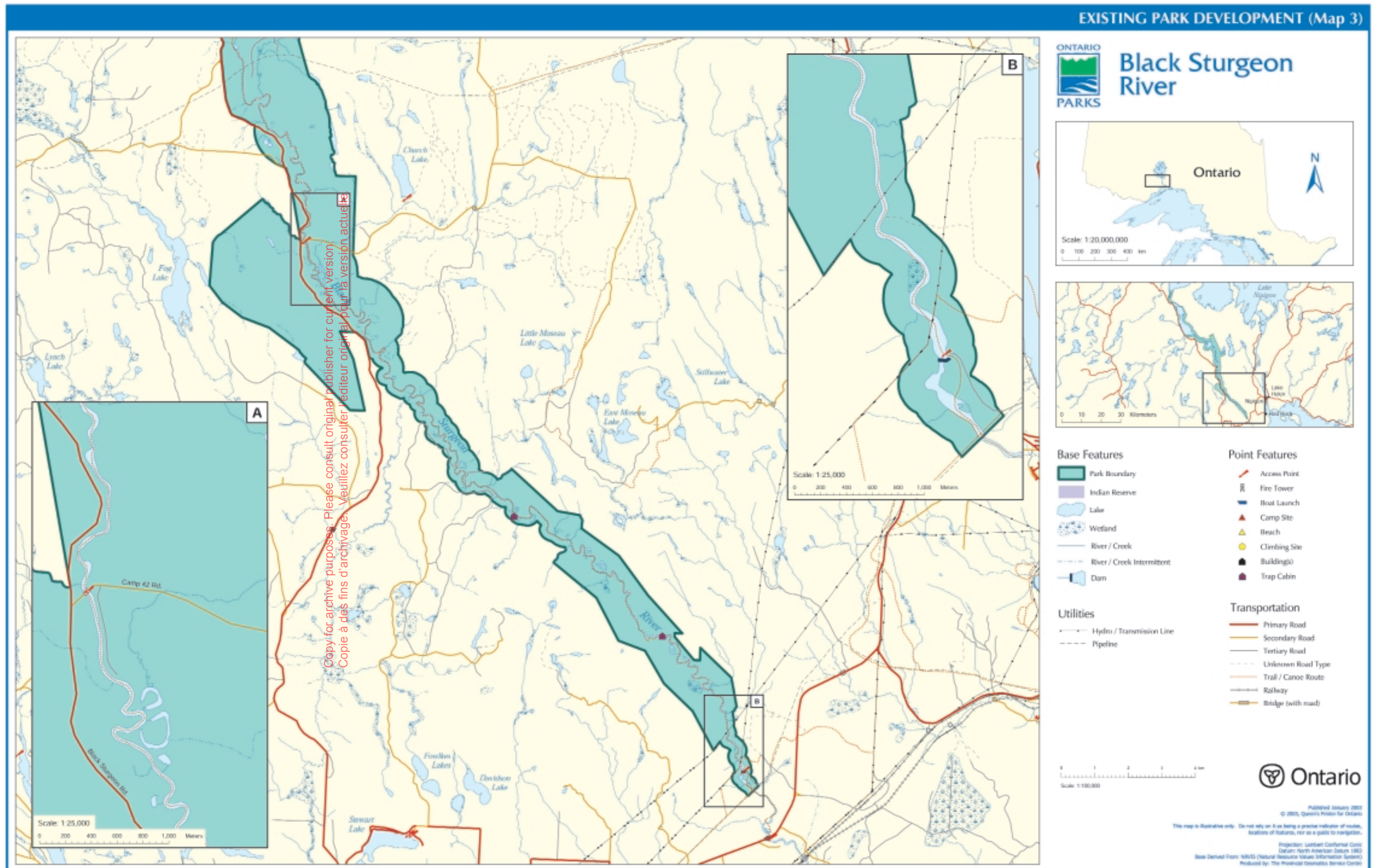


FIGURE 22: EXISTING DEVELOPMENT (TILE 3)





LAKE NIPIGON BASIN SIGNATURE SITE

PARK MANAGEMENT PARENT PLAN

**LAKE NIPIGON
KABITOTIKWIA RIVER
LIVINGSTONE POINT
WINDIGO BAY
WEST BAY**

CHAPTER 6



July 2003

Dear Sir/ Madam:

I am pleased to approve the Lake Nipigon Basin Signature Site Park Management Parent Plan as the official policy for the protection and management of Lake Nipigon Provincial Park, Kabitotikwia River Provincial Nature Reserve, Livingstone Point Provincial Nature Reserve, West Bay Provincial Nature Reserve, and Windigo Bay Provincial Nature Reserve. The plan reflects the Ministry of Natural Resources' and Ontario Parks' intent to protect the natural and cultural features of these five parks, while maintaining and developing high quality opportunities for outdoor recreation and heritage appreciation for the residents of Ontario and visitors to the province.

Lake Nipigon Provincial Park, Kabitotikwia River Provincial Nature Reserve, Livingstone Point Provincial Nature Reserve, West Bay Provincial Nature Reserve and Windigo Bay Provincial Nature Reserve are all located within the Lake Nipigon Basin Signature Site, one of 9 such areas featured in the *Ontario's Living Legacy Land Use Strategy* (1999). Signature Sites are identified for their range of natural and recreational values and their potential to contribute to future recreation and tourism.

This management parent plan has been developed under the general direction of the *Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy*, which provides the overall context for land use and resource management activities in the Basin.

The plan includes a prioritized implementation strategy and summarizes the public consultation that occurred as part of the planning process.

The park management parent plan will be used to guide the management of these five parks. It may be reviewed to address changing issues or conditions. A review will be held as required.

I wish to extend my sincere thanks to all those who participated in the public consultation process.

Yours truly,

A handwritten signature in black ink, reading "A. Ireland-Smith".

Adair Ireland-Smith
Managing Director

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STATEMENT OF ENVIRONMENTAL VALUES AND THE ENVIRONMENTAL BILL OF RIGHTS

In accordance with the provisions of the *Environmental Bill of Rights*, the Ministry of Natural Resources prepared a *Statement of Environmental Values*. It describes how the purposes of the *Environmental Bill of Rights* are to be considered whenever decisions are to be made which might significantly affect the environment. This includes decisions made as a result of the park management planning process.

The primary purpose of the *Environmental Bill of Rights* is "to protect, conserve and wherever possible, restore the integrity of the environment." From the Ministry's prospective, that broad statement of purpose translates into four objectives in its *Statement of Environmental Values*:

- To ensure the long-term health of the ecosystems by protecting and conserving our valuable soil, aquatic resources, forest and wildlife resources as well as their biological foundations;
- To ensure the continuing availability of natural resources for the long-term benefit of the people of Ontario;
- To protect natural heritage and biological features of provincial significance; and,
- To protect human life, the resource base and the physical property from the threats of forest fires, floods and erosion.

The Ministry's *Statement of Environmental Values* has been considered in the development of the *Lake Nipigon Basin Signature Site Provincial Park Management Parent Plan* for Lake Nipigon Provincial Park, Kabitotikwia River Provincial Nature Reserve, Livingstone Point Provincial Nature Reserve, West Bay Provincial Nature Reserve, and Windigo Bay Provincial Nature Reserve.

1.0 INTRODUCTION

This “*parent plan*” has been prepared to cover the management needs of the five provincial parks located on the shores of Lake Nipigon because these parks are spatially, thematically and administratively related. The plan includes sufficient background information and analysis upon which to support planning decisions. This “*parent plan*” has the force and effect of a full management plan. Where sufficient background inventory is not available to support significant decisions, or in situations where further study or analysis is required, decisions were deferred to subsidiary plans, as is the current practice.

As stated in the *Environmental Bill of Rights* posting, “*the goal of the Lake Nipigon Basin Project Team is to develop an Ecological Land Use and Resource Management Strategy for the Nipigon Basin that includes management plans for provincial parks and conservation reserves*”.

The parks covered by this parent plan are components of the Lake Nipigon Basin Signature Site. The planning process for the Lake Nipigon Basin Signature Site is a complex initiative. A single process is being applied to the signature site, which contains a number of areas with different land use designations. These areas all share common planning stages and timelines, thereby facilitating the concurrent public consultation and planning process. The areas included within the Lake Nipigon Basin also share common geographic themes, recreation uses and resource issues with the various components of the signature site. The development of *Lake Nipigon Basin Ecological Land Use and Resource Management Strategy* will include the development of the management plans for parks including Black Sturgeon River Provincial Park, Lake Nipigon Provincial Park, Kabitotikwia River Provincial Nature Reserve, Livingstone Point Provincial Nature Reserve, Windigo Bay Provincial Nature Reserve, and West Bay Provincial Nature Reserve.

The parks addressed by this park management parent plan are limited to the regulated parks on the shores of Lake Nipigon and include:

- Lake Nipigon Provincial Park;
- Kabitotikwia River Provincial Nature Reserve;
- Livingstone Point Provincial Nature Reserve;
- Windigo Bay Provincial Nature Reserve; and
- West Bay Provincial Nature Reserve.

There are three remaining provincial parks within the Lake Nipigon Basin Signature Site that are not included in the parent plan. The parks not covered by this parent plan are:

- Kopka River Provincial Park;
- Whitesand Provincial Park; and
- Black Sturgeon River Provincial Park.

The original Kopka River Provincial Park and additions will not be included in this process because the majority of the park is outside of the signature site boundary. The boundary of Kopka River Provincial Park, however, will be amended through the *Lake Nipigon Basin Ecological Land Use and Resource Management Strategy* process. Direction for Kopka River Provincial Park and additions will be considered during the park management planning process for the Kopka River and Wabakimi Provincial Parks. Whitesand Provincial Park will not be included in this planning process due to outstanding Aboriginal concerns. Black Sturgeon River Provincial Park is the subject of a separate park management planning process as part of the larger Lake Nipigon Basin planning initiative.

1.1 LAKE NIPIGON PROVINCIAL PARK

Lake Nipigon Provincial Park is 918 hectares in size and is located along the southeast shores of Lake Nipigon, between Highway 11 and the Lake Nipigon shore, approximately 100 kilometres southwest of Geraldton. The park was established in 1960 as Blacksand

Provincial Park. In 1971, the area of the park was increased to include Lake Nipigon waters for a distance of 152 metres from shore (high water mark). The park name was changed in 1978.

The latest park management plan for Lake Nipigon Provincial Park was approved in 1988 and subsequently amended in 1997.

As part of the “*Land and Larger Landbase Framework Agreement*”, an area of 350 hectares was deregulated in August 1999 from Lake Nipigon Provincial Park and is being transferred to the federal government to form a new reserve for the Sand Point First Nation. Public input played an important role in making the final decision to remove land from Lake Nipigon Provincial Park. A major park management plan amendment was completed in spring 1997 as part of the deregulation. The balance of the park has retained its natural environment classification.

1.2 KABITOTIKWIA RIVER PROVINCIAL NATURE RESERVE

Kabitotikwia River Provincial Nature Reserve is a nature reserve class park (1,965 hectares) located on the west side of the Lake Nipigon Basin, on the southwest shore of Gull Bay. The park contains a variety of wetlands, such as fluvial marsh, treed fen, and low shrub fen. The meandering Kabitotikwia River, which flows through the park, is part of an established canoe route in Nipigon District.

The park was regulated on January 15, 1985. An interim management statement for Kabitotikwia River Provincial Nature Reserve was revised in March, 1991.

1.3 LIVINGSTONE POINT PROVINCIAL NATURE RESERVE

Livingstone Point is a nature reserve class park (1,800 hectares in size) located in the northeast quadrant of the Lake Nipigon Basin, south of Humboldt Bay. The major physiographic features include moderately to strongly broken uplands with shallow, sand till over bedrock, with lacustrine clay in

valleys. The relief is variable with the highest and most rugged area in the central portion of the park, with large hills flanked by extensive talus boulder fields.

The park was regulated on February 16, 1985. An interim management statement for Livingstone Point Provincial Nature Reserve was revised in March, 1991.

1.4 WINDIGO BAY PROVINCIAL NATURE RESERVE

Windigo Bay is a nature reserve class park (8,378 hectares in size) located on the northwest shore of Lake Nipigon. It is bounded by the Whitesand River (on the west), the CN rail line (on the north), Kenna Creek (on the east) and Lake Nipigon (on the south). There is a small area adjacent to the east boundary of the park that is held by private tenure. An area around Mount St. John, where the “*Old Whitesand*” community was located until approximately 1940, is not included in the park. Windigo Bay protects a number of significant natural features including wintering range and migration corridor for woodland caribou.

The park was identified for its geological values and regulated on May 27, 1989.

The interim management statement for Windigo Bay Provincial Nature Reserve was revised in February, 1999. This revision reflected an agreement between Ontario Parks and Whitesand First Nation for the construction of a restricted access road by the First Nation for access to their healing lodge immediately west of Mount St. John.

1.5 WEST BAY PROVINCIAL NATURE RESERVE

West Bay Provincial Nature Reserve is one of the smallest parks in the Lake Nipigon Basin with an area of 1,120 hectares. It is a nature reserve class park located on the west side of Lake Nipigon on the northern shore of West Bay.

There are some wetlands present and these are mostly graminoid or low shrub bogs developing in small kettle potholes. The dominant forest type is a deciduous shrub-rich mixedwood, and overall the West Bay Provincial Nature Reserve environment is pristine, due to the difficulty of accessing this remote area.

The park was identified for its shoreline features of Lake Kelvin and sections of Onaman Interlobate Moraine. The park was regulated on February 16, 1985. An interim management statement for West Bay Provincial Nature Reserve was revised in March, 1991.

The Lake Nipigon Basin Signature Site Park Management Parent Plan has evolved from the public review of the following documents:

- Lake Nipigon Basin Background Document;
- Lake Nipigon Basin Signature Site Management Options; and
- Lake Nipigon Basin Signature Site Preliminary Park Management Parent Plan.

The background document and management options document includes information on all of the conservation reserves, enhanced management areas and provincial parks within the signature site. The preliminary park management plan was specific to parks covered by the “*parent plan*”.

The approved Lake Nipigon Basin Signature Site Park Management Parent Plan sets direction for the next 20 years by establishing policy and identifying appropriate development, consistent with the goals and objectives of Ontario Parks.

2.0 SUMMARY OF SIGNIFICANT ISSUES (NOT RANKED)

Park users, local residents, Spruce River/Armstrong Local Citizens Committee, First Nations, Canadian Outward Bound Wilderness School (COBWS), as well as other groups and individuals, identified the following concerns related to the management of Lake Nipigon Provincial Park, Kabitotikwia River Provincial Nature Reserve, Livingstone Point Provincial Nature Reserve, West Bay Provincial Nature Reserve, and Windigo Bay Provincial Nature Reserve.

2.1 CLASSIFICATION OF LAKE NIPIGON PROVINCIAL PARK

Lake Nipigon Provincial Park is a natural environment class park. According to park policy, natural environment parks should be at least 2,000 hectares or more in size. The park boundary was modified in 1997 to accommodate the establishment of the Sand Point First Nation. Now the park is 918 hectares in size. Some suggested the classification be changed to nature reserve. This consideration is addressed in section 3.0.

2.2 THE USE OF MOTORIZED BOATS IN KABITOTIKWIA RIVER PROVINCIAL NATURE RESERVE

Kabitotikwia River Provincial Nature Reserve was established to protect the wetland complex south of Gull Bay along the Kabitotikwia River. Currently, anglers from Lake Nipigon use the area. There is evidence to suggest that the wakes from the anglers’ motorized boats are negatively affecting the wildlife and vegetation in the park. Three options to deal with this issue were provided in the management options document. The first option proposed continuing the use of motorized boats in the park. The second option proposed restricting the use of motorized boats in the river, such that boats must travel through the park without creating a wake. The third option prohibited motorized boats from operating in the park.

REGIONAL SETTING



FIGURE 23. REGIONAL SETTING

The public supported a ban on motorized boats within the park. This consideration is addressed in more detail in sections 7.1.1 and 9.2.1.

2.3 BOUNDARY EXPANSIONS AROUND KOPKA RIVER PROVINCIAL PARK

Three potential expansions of Kopka River Provincial Park were proposed in the Lake Nipigon Basin Signature Site Management Options document, as follows:

- Changing the designation of Wabinoash Bay from conservation reserve to provincial park;
- Including the former Prisoner of War camp site, which was included within an enhanced management area; and
- Including portions of the conservation reserve on the east shore of Wabinoash Lake.

Some people were opposed to increasing the size of parks and protected areas, thereby decreasing the amount of area within the enhanced management area. The park boundary was adjusted to include all three of these areas. This concern is addressed in Chapter 1, Section 3.1.1 of the Strategy, because the park is not being planned for in this parent planning process.

2.4 ROAD RESTRICTIONS IN WINDIGO BAY PROVINCIAL NATURE RESERVE

Currently there is a healing lodge on the shores of Lake Nipigon, surrounded by Windigo Bay Provincial Nature Reserve. This spiritual centre and its associated cabins were built to provide emotional support and cultural development for the members of Whitesand First Nation. A road and trail were constructed through Windigo Bay Provincial Nature Reserve to provide land access to the Whitesand First Nation Healing Lodge. The project was subject to a field environmental planning process, which concluded in 1997. During that process, concerns were raised that the road and trail would disrupt the

woodland caribou migration between the Wabakimi/Armstrong area and Lake Nipigon. The road use Memorandum of Understanding signed in 1998 between Whitesand First Nation and MNR/Ontario Parks will remain to guide the agreed timing and use parameters of the road through the park. These considerations are addressed in sections 5.1, 5.1.2, 7.2.1 and 7.2.2.

3.0 CLASSIFICATION

The provincial parks system incorporates six classes of parks, which are selected to meet representation targets in addition to the protection of special values. Lake Nipigon Provincial Park retains its natural environment classification. Natural environment parks are selected to protect large, representative, and ecologically viable areas throughout Ontario. The target is to establish one natural environment park in each of the province's ecological districts. All parks are included within and representative of ecoregion 3W and ecodistrict 3W-3 (Hills 1964; Crins 2000). All other existing parks in this parent plan are nature reserve class parks. Nature reserve parks and zones are established to represent and protect Ontario's geological, ecological, and species diversity.

4.0 GOAL

The five provincial parks on the shores of Lake Nipigon contribute to the provincial parks system by protecting such values as plant communities, wildlife, and cultural resources, providing recreational opportunities for heritage appreciation and tourism benefits. These five parks will contribute to resource protection in the region.

In accordance with each park's classification, the goal of the five parks within this parent plan is:

To protect the significant natural, cultural, and recreational features, while providing opportunities for visitors to participate in non-consumptive and compatible heritage appreciation, recreation, and tourism activities.

These parks contribute to the goal of the provincial park system, which is:

To provide a variety of outdoor recreation opportunities and to protect provincially significant natural, cultural and recreational environments in a system of provincial parks.

5.0 OBJECTIVES

Ontario's provincial park system has four objectives: *protection, recreation, heritage appreciation, and tourism*. Each park in the system contributes in some way to each of these objectives, depending on its resource base. Each park in the basin contributes to the achievement of all four objectives.

The four key objectives are:

- Protection: *To protect provincially significant elements of the natural and cultural landscape of Ontario;*
- Recreation: *To provide outdoor recreation opportunities ranging from high-intensity day-use to low-intensity wilderness experiences;*
- Heritage Appreciation: *To provide opportunities for exploration and appreciation of the outdoor natural and cultural heritage of Ontario; and*
- Tourism: *To provide Ontario's residents and out-of-province visitors with opportunities to discover and experience the distinctive regions of the province.*

5.1 PROTECTION OBJECTIVE

To protect the provincially significant natural features in the parks including arctic-alpine disjunct plants and communities, bald eagles, woodland caribou populations as well as representative ecosystems and potential cultural sites.

These five parks contain a variety of natural and cultural resources that are provincially significant. These include:

- Arctic-alpine disjunct plants and communities (Livingstone Point);
- Woodland caribou wintering range (Livingstone Point and Windigo Bay);
- Marsh complex (Kabitotikwia River);

- Provincially significant glacial Lake Kelvin shoreline features (West Bay and Windigo Bay);
- Provincially significant Onaman Interlobate Moraine earth feature (West Bay and Windigo Bay);
- Nesting bald eagles in the parks (all); and
- High potential for cultural sites (Kabitotikwia River, Livingstone Point and Windigo Bay).

These parks make significant contributions to the protection objective. Their connection and geographic relationship to the Lake Nipigon Basin Signature Site is also important. The Whitesand River valley, as well as Windigo Bay Provincial Park, forms a valuable northern 'arm' or extension to the signature site. It may provide a natural corridor for the movement of wildlife between the Lake Nipigon Basin, the Armstrong airport and Wabakimi Provincial Park. This is critical to connecting the populations of woodland caribou from Lake Nipigon to Wabakimi Provincial Park. Livingstone Point Provincial Nature Reserve also facilitates caribou movement to the east between Onaman Lake and Lake Nipigon.

The protection objective will be accomplished through appropriate park zoning, resource management policies (land use controls), research, monitoring, and a greater park ecosystem approach to park planning and management. The greater park ecosystem is defined as the area of influence surrounding the park from an ecological, social and economic perspective. It is the area where most of the cross-boundary impacts affecting the park and the surrounding area will occur, and vice versa.

5.1.1 EARTH SCIENCE

West Bay Provincial Nature Reserve protects the glacial Lake Kelvin shoreline sequence, Onaman Interlobate Moraine, and associated features from the Timiskaming Interstadial theme (Kor 1978b).

The glacial Lake Kelvin shoreline is also evident as terraces within Windigo Bay Provincial Nature Reserve as well as the associated features from the Timiskaming Interstadial theme. The glacial Lake Kelvin shoreline is considered provincially significant (Kor 1978a).

Late Precambrian diabase sills and Jellicoe Spillway glacial deposits are protected within Lake Nipigon Provincial Park (Kor 1978a).

Earth science values are protected within nature reserve and natural environment zones through the policies that apply to these zones.

5.1.2 LIFE SCIENCE

The moderately to strongly broken shallow till over Proterozoic bedrock with lacustrine clay in valleys and associated vegetation in Livingstone Point Provincial Nature Reserve is representative of eodistrict 3W-3. Included within the park are regionally rare arctic alpine disjunct plants.

The weakly broken lacustrine fine sand with some medium and coarse sand within Kabitotikwia River support associated representative vegetation communities of eodistrict 3W-3. Also contained within the park are a diversity of wetland plants, nesting shorebirds, an unusually rectilinear river meander pattern and marsh complex.

The weakly broken lacustrine clay plain and weakly broken lacustrine sand plain with sandy till within Windigo Bay Provincial Nature Reserve support associated representative vegetation communities of eodistrict 3W-3. Of special note is the dune field vegetation within the park. The dune complexes, with open jack pine forest, scattered openings, and gently rolling topography provide woodland caribou wintering habitat. These dunes are regionally significant. The woodland caribou wintering range in Windigo Bay Provincial Nature Reserve is provincially significant (Harris and Foster 1997).

The large rich fen in the southeast portion of Windigo Bay Provincial Nature Reserve is uncommon in ecodistrict 3W-3, and is considered regionally significant.

Life science values are protected within nature reserve and natural environment zones.

5.1.3 CULTURAL RESOURCES

There is a high potential for cultural sites within Kabitotikwia River, Livingstone Point and Windigo Bay Provincial Nature Reserves.

The protection and management of identified cultural values are described in section 8.2.

5.2 RECREATION OBJECTIVE

To provide visitors to these five parks with opportunities for low-impact, non-consumptive recreation such as canoe and sea kayak tripping, fishing, swimming, and snowshoeing.

Because of their remoteness and inaccessibility, these parks provide opportunities for a limited number of low-impact, non-consumptive recreational uses compatible with the character of these parks. The extent of recreational activity in these areas is unknown.

The Kabitotikwia River is identified as a canoe route, forming part of the system of routes in Thunder Bay District. All of the parks currently support opportunities for sport fishing, paddling on Lake Nipigon and nature appreciation.

The recreation objective will be achieved through appropriate development, access, nature reserve and natural environment zoning; the identification of management policies to prevent any compromise of significant values; market research and monitoring; and mitigating impacts of use.

5.3 HERITAGE APPRECIATION OBJECTIVE

To provide unstructured, self-use opportunities for exploration and appreciation of the natural and cultural

heritage within the parks, as well as the associated earth and life science features.

Unstructured self-use activities allow users to experience a dramatic landscape that illustrates a chronology of geological events and processes. Examples of activities include paddling, hiking, snowshoeing, and scenic and wildlife viewing. This objective will be achieved through the provision of accurate up-to-date information to park visitors regarding the natural, cultural and recreational resources of the parks.

More information on cultural resources is contained in Section 8.2.

The area represents several period themes such as Fur Trade; Indigenous Settlers, Traders and Potters; and Northern Hunters and Fishers. Section 9.1 lists interpretive themes and techniques for the parks.

5.4 TOURISM OBJECTIVE

To provide both Ontario residents and out-of-province visitors with opportunities to discover and to experience the unique natural and cultural features of these five parks, through the provision of high quality land and water-based experiences.

These five parks along the shores of Lake Nipigon provide limited day-use experiences for destination visitors to Lake Nipigon.

The tourism objective is achieved by providing outstanding paddling, hiking, fishing and nature appreciation experiences with links to the Lake Nipigon Basin Signature Site Tourism Strategy that will attract and retain visitors.

Further information about the Lake Nipigon Basin Signature Site Tourism Strategy can be found in section 7.1.3 and 8.2 of this plan, and Chapter 1, section 3.2.4 of the *Ecological Land Use and Resource Management Strategy*.

6.0 PARK BOUNDARIES

No land disposition will occur within the four nature reserve parks. Commercial land disposition may be considered in Lake Nipigon Provincial Park, subject to future planning.

6.1 WEST BAY PROVINCIAL NATURE RESERVE

During future park expansion programs, such as “Room to Grow” additional glacial moraine and shoreline features to the north and west of the park should be considered for inclusion.

6.2 WINDIGO BAY PROVINCIAL NATURE RESERVE

Windigo Bay Provincial Nature Reserve surrounds the site of “Old Whitesand”.

This site has historical, traditional and spiritual significance to Whitesand First Nation, who have continued to use it for these purposes. Members of Whitesand First Nation recently built a healing lodge in recognition of the site’s significance. Appropriate tenure for the healing lodge site will be granted by MNR to the Whitesand First Nation, but will not affect the park boundary.

Research to determine the importance of the pelican nesting colony on islands adjacent to Windigo Bay Provincial Nature Reserve will be completed. This study will determine if the islands should be included in the park.

TABLE 32. ZONE POSSIBILITIES BY PARK CLASS

Park Class	Zone Type					
	NE	D	WI	NR	HI	A
NR				*	*	*
NE	*	*	*	*	*	*

7.0 PARK ZONING

Classification of provincial parks and zoning are the key elements in determining the type and extent of resource management and recreation activities that may take place in a provincial park. Classification sets the direction for the types of zones that a park may contain and the general approach used in formulating management policies. Park zoning permits further refinement in the development of specific policies by setting limits on the range of management activities that can be considered—these activities are described in the *Ontario Provincial Parks: Planning and Management Policies* (MNR 1992).

Zoning is a key part of a park management plan. Zones fulfill a variety of functions that include:

- Providing recognition of the features and attributes of a park;
- Delineating areas on the basis of their requirements to protect and buffer provincially significant representative features;
- Delineating areas on the basis of their ability to support various recreational activities; and
- Identifying uses that will protect significant features, yet allow opportunities for recreation and heritage education (please refer to Table 32 for more information).

There are six zones that could guide the resource management and development of Lake Nipigon Provincial Park. These designations include natural environment, development, access, wilderness, historical

EXISTING PARK DEVELOPMENT



Lake Nipigon

0 400 800 1,200 1,600 m
Scale: 1:50,000

Point Features

- Access Point
- Fire Tower
- Boat Launch
- Camp Site
- Beach
- Climbing Site

- Building
- Trap Cabin

Base Features

- Park Boundary
- Indian Reserve
- Lake
- Wetland
- River / Creek
- River / Creek Intermittent
- Dam

Utilities

- Transmission Line
- Pipeline

Transportation

- Primary Road
- Secondary Road
- Tertiary Road
- Unknown Road Type
- Trail / Canoe Route
- Railway
- Bridge (with road)



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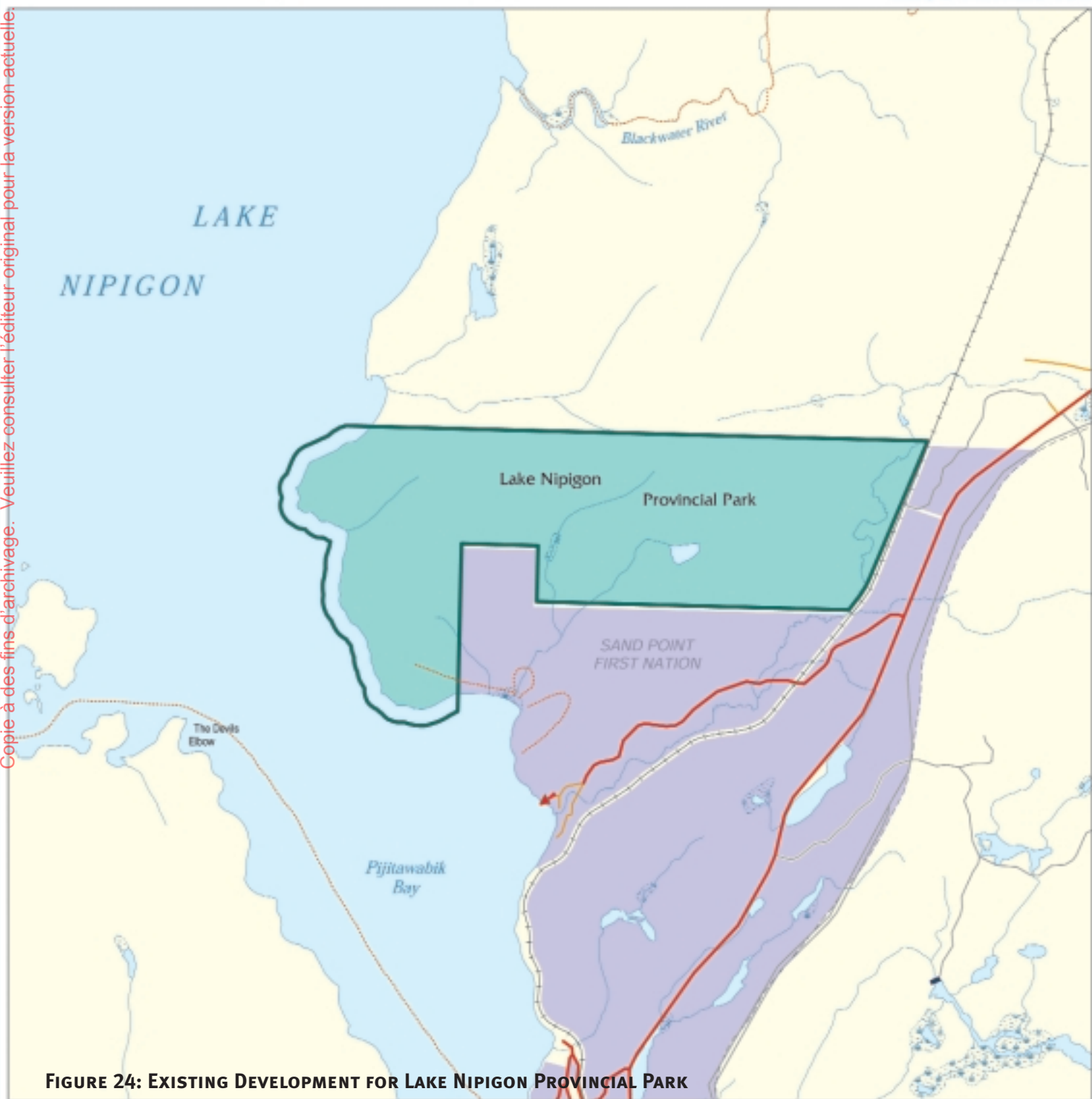


FIGURE 24: EXISTING DEVELOPMENT FOR LAKE NIPIGON PROVINCIAL PARK

and nature reserve zones (Table 32 and Figure 24).

For the nature reserves in this plan, three zones could guide the resource management and development, namely access, historical and nature reserve zones (Table 32 and Figures 24 through 28).

Any change in zoning after the park management plan is approved would require review through the management plan amendment process as outlined in the Ontario Provincial Park Management Planning Manual (MNR 1994).

7.1 NATURE RESERVE ZONES

Nature reserve zones protect the provincially significant earth and / or life science features within a park, and may include a protected buffer area in which a minimum of development is permitted. Development is generally restricted to trails, necessary signs, interpretive facilities (where warranted) and temporary facilities for research and management.

7.1.1 NATURE RESERVE ZONE 1 (1,952 HECTARES) (KABITOTIKWIA RIVER)

All of Kabitotikwia River Provincial Nature Reserve is zoned nature reserve to protect the wetland vegetation and shoreline nesting birds. This designation precludes motorized watercraft in the area. Anglers may paddle their boats through the park, then continue to use their motors once they are beyond the park boundary.

7.1.2 NATURE RESERVE ZONE 2 (1,778 HECTARES) (LIVINGSTONE POINT)

This zone is established to provide protection to the habitat used year-round by woodland caribou.

7.1.3 NATURE RESERVE ZONE 3 (1,101 HECTARES) (WEST BAY)

The nature reserve zone provides protection of the Onaman Interlobate Moraine and glacial Lake Kelvin shoreline features.

7.1.4 NATURE RESERVE ZONE 4 (8,395 HECTARES) (WINDIGO BAY)

The purpose of this nature reserve zone is to protect the woodland caribou wintering area, movement corridor, ancient beach ridges of glacial Lake Kelvin, dune complex and large fen in the park.

No new development, facilities or services will be permitted in the nature reserve zone, except for research facilities and infrastructure as outlined in section 9.3.

7.2 ACCESS ZONES

Access zones serve as staging areas, a means of both providing and regulating use in areas of the park geared towards low-impact recreation, such as “*leave-no-trace*” camping in natural environment parks. Provision may be made for limited self-use orientation. Limited facilities for research and park management may be present. Two access zones have been designated in Windigo Bay Provincial Nature Reserve, and one access zone has been designated in Lake Nipigon Provincial Park.

7.2.1 ACCESS ZONE 1 (34 HECTARES) (WINDIGO BAY ROAD)

This access zone is comprised of the 15-metre wide road corridor that provides members of the Whitesand First Nation with road access to within one kilometre of their healing lodge. Use of the road will comply with the Memorandum of Understanding signed in 1998 between Whitesand First Nation and MNR/Ontario Parks.

7.2.2 ACCESS ZONE 2 (2 HECTARES) (WINDIGO BAY TRAIL)

This access zone links the terminus of the road through Windigo Bay Provincial Park to the healing lodge and allows Whitesand First Nation members to travel by ATV, snowmobile and by foot. This zone is limited to the width of the trail, and extends from the terminus of the road to the park boundary to the south. Development in this zone will be restricted to trail maintenance and improvements needed

EXISTING PARK DEVELOPMENT



Kabitoikwia River

0 1 2 km
Scale: 1:100,000

Point Features

- Access Point
- Fire Tower
- Boat Launch
- Camp Site
- Beach
- Climbing Site

- Building
- Trap Cabin

Base Features

- Park Boundary
- Indian Reserve
- Lake
- Wetland
- River / Creek
- River / Creek Intermittent
- Dam

Utilities

- Transmission Line
- Pipeline

Transportation

- Primary Road
- Secondary Road
- Tertiary Road
- Unknown Road Type
- Trail / Canoe Route
- Railway
- Bridge (with road)



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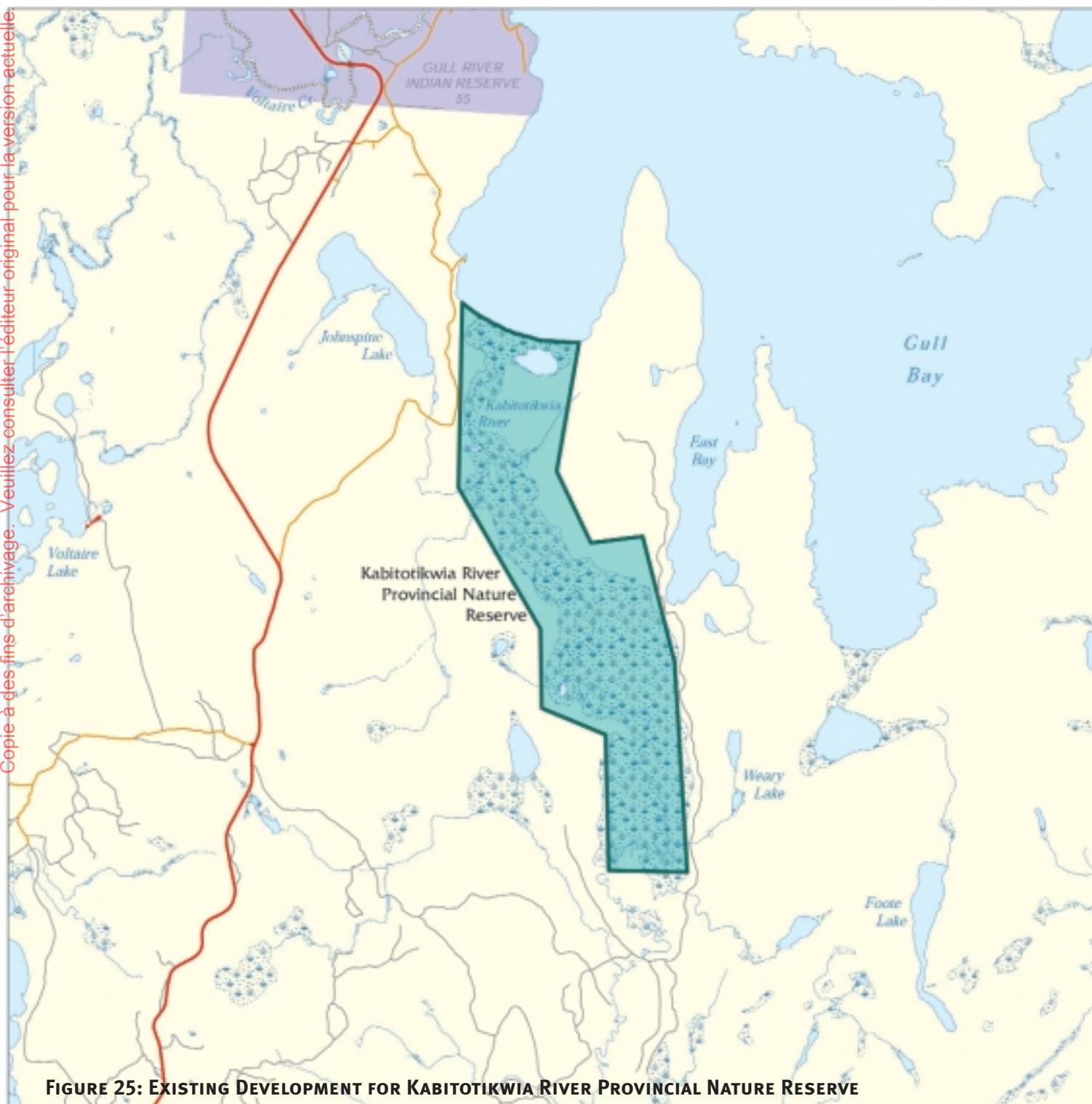


FIGURE 25: EXISTING DEVELOPMENT FOR KABITOTIKWIA RIVER PROVINCIAL NATURE RESERVE

to safely transport youth and elders between the road and the healing lodge.

The use restrictions articulated in 7.2.1 will also apply to this access zone.

Whitesand First Nation members accessing the healing lodge, commercial trappers accessing their traplines and employees of the Ministry of Natural Resources will be permitted to use mechanized travel within the park. Other uses of the road are discouraged.

7.2.3 ACCESS ZONE 3 (1 HECTARE) (THUNDERBIRD LOOKOUT TRAIL)

This zone in Lake Nipigon Provincial Park is limited to the existing trail. The existing trail may be upgraded to a 15-metre wide trail, to allow for motorized carts and vehicles from the proposed Copper Thunderbird resort on Sand Point Indian Reserve to the Thunderbird Lookout that is located within the park. Such improvements would require a site plan.

7.3 NATURAL ENVIRONMENT ZONES

Natural environment zones include natural landscapes, which permit the minimum level of development required to support low-intensity recreational activities. Development is limited to backcountry campsites, portages, necessary signs and minimal interpretive facilities.

7.3.1 NATURAL ENVIRONMENT ZONE 1 (918 HECTARES) (LAKE NIPIGON)

The balance of Lake Nipigon Provincial Park is zoned natural environment. This zone provides site protection for the representative landscape units in the park. It encompasses rugged, backcountry landscapes. This area may be utilized in the development of compatible high-quality, low intensity, non-consumptive, recreational opportunities.

Development in this zone will be limited to backcountry campsites, hiking and cross-country ski trails, and route signs where required.

8.0 RESOURCE STEWARDSHIP POLICIES

The management of the natural and cultural resources within Lake Nipigon Provincial Park will conform with the policies identified for natural environment parks in Ontario Provincial Parks: Planning and Management Guidelines (1992). The management of the natural and cultural resources within Kabitotikwia River, Livingstone Point, West Bay, and Windigo Bay Provincial Nature Reserves will conform with the policies identified for nature reserve parks in Ontario Provincial Parks: Planning and Management Guidelines (1992). Additional policy direction is provided in the following section.

First Nation members carry out traditional natural resource harvesting activities in accordance with their rights. Aboriginal and treaty rights are constitutionally protected.

8.1 NATURAL RESOURCES

8.1.1 LANDFORM

The management of the parks' land base will be directed towards maintaining the natural landscape. Mineral exploration and mining are prohibited within the boundaries of these parks. No new gravel pits are permitted in these parks. Aggregate for park purposes will be acquired from sources outside the park. Peat extraction is not permitted within the boundaries of these parks.

8.1.2 WATER

Water quality for fisheries habitat and recreational purposes will be maintained.

Water quality adjacent to access zones will be monitored where feasible, in accordance with provincial standards.

Commercial hydro development is not permitted within the boundaries of Lake Nipigon Provincial Park, Kabitotikwia River, Livingstone Point, West Bay Provincial Park, and Windigo Bay Provincial Nature Reserves.

EXISTING PARK DEVELOPMENT



Livingstone Point

0 1 2 km
Scale: 1:75,000

Point Features

- Access Point
- Fire Tower
- Boat Launch
- Camp Site
- Beach
- Climbing Site

- Building
- Trap Cabin

Base Features

- Park Boundary
- Indian Reserve
- Lake
- Wetland
- River / Creek
- River / Creek Intermittent
- Dam

Utilities

- Transmission Line
- Pipeline

Transportation

- Primary Road
- Secondary Road
- Tertiary Road
- Unknown Road Type
- Trail / Canoe Route
- Railway
- Bridge (with road)



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FIGURE 26: EXISTING DEVELOPMENT FOR LIVINGSTONE POINT PROVINCIAL NATURE RESERVE

8.1.3 VEGETATION

Generally, vegetation management within these five parks will be limited, allowing succession of communities to occur in an unmanipulated manner.

Active vegetation management activities (e.g. prescribed burns, thinning) may be used in limited cases to produce desired vegetation results (e.g. protection of woodland caribou habitat, ensuring future supply of woodland caribou habitat).

Commercial timber harvesting is prohibited within these parks.

Infestations of forest insects and diseases will be monitored and assessed, where feasible. Non-native species will be controlled, and native species may be controlled. If control measures are undertaken, they will be applied to minimize effects on the general park environment. Biological controls will be used wherever possible.

The removal of hazardous trees will be permitted in all zones where safety is a concern (e.g. trails and access points). Areas experiencing adverse impacts will be rehabilitated whenever possible using plant species native to the park.

Brushing and ditching along approved roads may be permitted to improve sight lines and/or traffic flow.

Herbicide applications will be discouraged for vegetation management.

Development that necessitates the removal of vegetation will be supported by a vegetation inventory in accordance with an approved site plan.

8.1.4 FIRE

Fires within these five provincial parks will be managed to protect park visitors and prevent socio-economic disruption. The ecological role of fire as an agent of disturbance for the maintenance of ecosystems and critical habitat will be promoted. Fire management will promote a “*naturalness*” objective to

approximate a natural forest and wildlife habitat condition. Fires will be managed to minimize the loss or damage to provincial park property, infrastructure and structures. Prescribed fires will be managed to minimize impacts on adjacent land users and communities through proper planning and sound decision-making. A fire management plan, in coordination with fire and vegetation research, will be developed for these parks to enable prescribed burning.

Light on the Land fire suppression techniques is the preferred option when protecting sensitive features. All fires that threaten park visitor safety or park infrastructure will receive Full Response and sustained action until extinguished. In the absence of an approved Fire Management Plan or Interim Fire Response Strategy for these parks, fires on the mainland will generally receive a Full Response and Sustained Action until extinguished. A Modified Response could occur after more detailed planning and in consultation with the park superintendent and the fire executive officer. The use of Suppression Action requires the approval of a Fire Assessment Report (FAR).

Fires that enhance caribou wintering habitat in Livingstone Point and Windigo Bay Provincial Nature Reserves will receive a Modified and/or Monitored Response, subject to more detailed planning and in consultation with the park superintendent. Prescribed burning may be used to meet ecosystem management objectives in the nature reserve zones within the four nature reserve parks, including enhancing caribou wintering habitat in Livingstone Point and Windigo Bay Provincial Nature Reserves.

8.1.5 WILDLIFE

The management of wildlife, including species at risk, will be limited within these five parks. Generally, succession of wildlife communities will occur in an unmanipulated manner. In certain cases, passive management (i.e. non-intervention) of species at risk and habitat will not guarantee the perpetuation of that species. If this is determined, then active management

EXISTING PARK DEVELOPMENT



Windigo Bay

Scale: 1:125,000
0 1 2 3 4 km

Point Features

- Access Point
- Fire Tower
- Boat Launch
- Camp Site
- Beach
- Climbing Site

- Building(s)
- Trap Cabin

Base Features

- Park Boundary
- Indian Reserve
- Lake
- Wetland
- River / Creek
- River / Creek Intermittent
- Dam

Utilities

- Transmission Line
- Pipeline

Transportation

- Primary Road
- Secondary Road
- Tertiary Road
- Unknown Road Type
- Trail / Canoe Route
- Railway
- Bridge (with road)



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FIGURE 27: EXISTING DEVELOPMENT FOR WINDIGO BAY PROVINCIAL NATURE RESERVE

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may be undertaken in the context of the broader management strategy for this species.

Hunting is prohibited in all five parks within this management plan. Status Indians having treaty rights to carry out traditional natural resource harvesting activities shall be permitted to carry on these activities in accordance with the terms of their treaty within their treaty area. These aboriginal and treaty rights are constitutionally protected.

Nuisance animals will be trapped and removed under the supervision of, or directly by Ministry of Natural Resources staff. This control will be exercised as a last resort when it is essential for the protection of human health and safety, the health of animal species, or the protection of infrastructure.

At present, there is a small portion of trapline NG-86 contained within Livingstone Point Provincial Nature Reserve. This trapline is currently held by a non-native trapper and, as such, will be phased out of the park by January 1, 2010. The trapline NG-21 is held by a First Nation community, and entirely contains West Bay and Kabitotikwia River Provincial Nature Reserves. There are two traplines (NG-29 and NG-50) located within Windigo Bay that are held by Status Indians enjoying treaty rights. Trapline NG-108 is also held by a Status Indians enjoying treaty rights, and encompasses Lake Nipigon Provincial Park. There are no trapline cabins located within any of these park boundaries. Licensed commercial trapping will be allowed to continue in nature reserves only for Status Indians enjoying treaty rights. Otherwise it will be phased out by January 1, 2010 or prior to this date if the trapline is surrendered through normal processes. If a licence is revoked, surrendered, or an application for transfer is received prior to this date, all portions of the registered trapline within the park will be rescinded from the trapline's legal descriptions. Trapline cabins will not be permitted within the parks. New commercial trapping is prohibited within these five provincial parks. Snowmobiles will be the only form of off-road transportation permitted in the parks, and only for the purpose of trapping or by members of Whitesand First

Nation to access their healing lodge via access Zones 1 and 2.

8.1.6 FISHERIES

The Nipigon District Fisheries Management Plan identifies strategies for Lake Nipigon Provincial Park, as well as Kabitotikwia River, Livingstone Point, West Bay Provincial, and Windigo Bay Provincial Nature Reserves.

Management of the fisheries resource will strive to protect a healthy aquatic ecosystem, which is aimed at maintaining or enhancing a self-sufficient native-species fishery.

Sport fishing is permitted in the parks. All fishing activities will be subject to the policies and regulations of the Ontario Fishing Regulations. Kabitotikwia River, West Bay and Windigo Bay Provincial Nature Reserves are located within Division 21 of the Ontario Fishing Regulations. Lake Nipigon Provincial Park and Livingstone Point Provincial Nature Reserve are included in Division 33 of the Ontario Fishing Regulations. The Park Superintendent may restrict sport fishing at certain times and locations for the purposes of fisheries management and/or public safety.

Stocking and spawn collection is not permitted.

The use and possession of baitfish is not permitted.

Existing commercial fishing on Lake Nipigon is permitted to continue within the boundary of Lake Nipigon Provincial Park and in the waters adjacent to the nature reserves.

Status Indians having treaty rights to carry out traditional natural resource harvesting activities shall be permitted to carry on these activities in accordance with the terms of their treaty within their treaty area. These aboriginal and treaty rights are constitutionally protected.

EXISTING PARK DEVELOPMENT



West Bay

0 1 2 km
Scale: 1:75,000

Point Features

- Access Point
- Fire Tower
- Boat Launch
- Camp Site
- Beach
- Climbing Site

- Building
- Trap Cabin

Base Features

- Park Boundary
- Indian Reserve
- Lake
- Wetland
- River / Creek
- River / Creek Intermittent
- Dam

Utilities

- Transmission Line
- Pipeline

Transportation

- Primary Road
- Secondary Road
- Tertiary Road
- Unknown Road Type
- Trail / Canoe Route
- Railway
- Bridge (with road)



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FIGURE 28: EXISTING DEVELOPMENT FOR WEST BAY PROVINCIAL NATURE RESERVE

8.2 CULTURAL RESOURCES

All five of these provincial parks are within the boundaries of lands covered under the Robinson-Superior 1850 Treaty.

Windigo Bay Provincial Nature Reserve surrounds the site of “*Old Whitesand*”.

This site has historical, traditional and spiritual significance to Whitesand First Nation and is the location of the healing lodge site.

Biinjitiwaabik Zaaging Anishinaabek is located on the southeast shore of Lake Nipigon. Members of this community travel on the lake, actively hunting and fishing for subsistence, as well as engaging in commercial fishing.

Gull Bay First Nation is located on the west shore of Lake Nipigon, just north of Kabitotikwia River Provincial Nature Reserve. Members of the community rely on the lake for subsistence and have commercial fishing licences on Lake Nipigon.

Sand Point First Nation is currently negotiating their land base with the Government of Canada, but are exploring commercial and residential opportunities on the land between Lake Nipigon Provincial Park and Biinjitiwaabik Zaaging Anishinaabek. There are plans to develop the Copper Thunderbird resort on this site. This ecotourism and cultural awareness centre will provide employment and income to the reserve and its residents. A trail from the lodge to the Thunderbird Lookout is being proposed in Lake Nipigon Provincial Park.

Members of Lake Nipigon Ojibway are also currently negotiating with the Government of Canada to establish a land base for their reserve. The site being discussed for the reserve is located east of the Lake Nipigon Basin Signature Site. Members of the community currently use the lake and may develop economic opportunities nearby.

Red Rock First Nation is located on Lake Helen, immediately adjacent to the signature site.

Poplar Point Ojibway and Poplar Point are communities of people currently seeking First Nation status. They have interests in and around Lake Nipigon. Ontario Parks recognizes that all First Nations within the signature site have traditional interests in the park(s) close to their communities.

Ontario Parks will continue to work with First Nation groups to document and protect cultural resources in the park. There are no formal land claims regarding any of these five parks at this time.

The focus of cultural/heritage representation in Ontario Parks is the protection of significant landscape-related cultural resources. Cultural resources will be managed to ensure their protection, and to provide opportunities for heritage appreciation and research where these activities do not impair the resource. This will be achieved through zoning and by controlling any recreational activities, development and research that may occur in these areas.

Although there is little documented evidence of known cultural occurrences, there is a high potential for cultural sites within Kabitotikwia River, and Livingstone Point Provincial Nature Reserves. Archaeological artifacts including Laurel pottery and Black Duck pottery shards have been found in Windigo Bay Provincial Nature Reserve. These artifacts correspond to known cultural sites. There is high potential for other occurrences within Windigo Bay Provincial Nature Reserve.

Ontario Parks/MNR will continue to work with the Ministry of Citizenship, Culture and Recreation in the inventory, protection and maintenance of archaeological and historic sites. If deemed appropriate for the protection and preservation of cultural resources, such inventory may include excavation of archaeological sites. Excavation by authorized licensed personnel with appropriate research permits will be conducted under the approval and supervision of the above Ministries. Upon completion of an excavation, the site or portions of the site will be returned to the extent possible to their original condition, or will be developed for the

purposes of interpreting the cultural resources of the site. The type and extent of such development will be determined by the findings from the excavation.

In order to protect these sites, Ontario Parks/MNR does not disclose the locations of known cultural or archaeological sites.

Periodic inspection of significant sites will occur with protective controls established as required. The removal of artifacts or destruction of historical features is illegal and prohibited. Additional significant archaeological discoveries may necessitate alterations to future development plans and/or park zoning

9.0 OPERATIONAL POLICIES

Lake Nipigon Provincial Park, as well as Kabitotikwia River, Livingstone Point, West Bay and Windigo Bay Provincial Nature Reserves are non-operating parks.

9.1 NATURAL HERITAGE EDUCATION

Because of the remote nature of these five parks and the relatively few number of people who visit the parks annually, the five parks in and around Lake Nipigon offer a self-use level of programming.

Natural Heritage Education programming will be limited to information contained in brochure(s) and on the Ontario Parks website.

9.1.1 PARK INFORMATION

A public information program will be offered as part of the Ontario Parks website. It will provide visitors with information about the park and its resources, environment and facilities. This information will emphasize the visitor's role in maintaining the natural environment of the park, appropriate behaviour in the park, and public safety.

Park literature will also advise visitors about commercial services and attractions in each local area and in other provincial parks.

Subject to available resources, park maps will be prepared. The park maps and brochures enable visitors to safely explore and use the park. A "*respect the environment*" ethic will be promoted in order to minimize human impact on the park environment.

Park information may also be included in promotional material for the Lake Nipigon Basin Signature Site.

9.1.2 INTERPRETATION

Interpretive programs and facilities provide park visitors with a greater understanding of the natural and cultural features. Printed material and self-use facilities will be the primary means of interpretation. The parks' primary interpretive themes relate to geology and how this geology has affected cultural

activities. The areas represent several period themes such as Fur Trade; Indigenous Settlers, Traders and Potters; and Northern Hunters and Fishers, as well as the parks' life and earth science features. Innovative ways of cooperative portrayal of these themes may be pursued with other agencies or partners.

9.1.3 RECREATION

Basic recreation information provided on the park maps will acquaint visitors with the attributes of the park.

9.2 RECREATION MANAGEMENT

Recreation management provides a variety of recreational opportunities while aspiring to minimize negative environmental impacts in recognition of the parks' significant landscape. Recreational activities that are incompatible with the park goal or with specific zones are prohibited or restricted. Prevention and control of such activities will be achieved through education and enforcement of park visitors concerning appropriate activities in the parks in general and within specific zones (Table 32). Low intensity recreation compatible with park values will be encouraged.

Camping in all five of these provincial parks is prohibited.

9.2.1 KABITOTIKWIA RIVER

The park will be promoted as a paddling and sport fishing area where high potential exists for viewing waterfowl and wildlife. Motorboat use is prohibited.

9.2.2 THUNDERBIRD LOOKOUT

Low intensity recreation will be confined to the trail within the park. The Thunderbird Lookout Trail may be upgraded to a road to allow visitors from the proposed Copper Thunderbird resort to use motorized access. Trail development must follow an approved site plan.

9.2.3 GREATER ECOSYSTEM

Within the context of the greater ecosystem, it is important to consider the ecological, social and economic relationships that these parks have with the surrounding area. Social and economic links include the local towns and First Nation communities whose residents and businesses either visit the parks and/or utilize the parks as an anchor or draw for recreation activities and business opportunities. The First Nation communities around Lake Nipigon use the entire area, including these parks, for spiritual, cultural, commercial and subsistence purposes.

9.3 RESEARCH

Ontario Parks' research and information needs relate directly to the Ministry of Natural Resources' mandate and the provincial parks' goal and objectives. Park-based research needs to address the wide range of environmental, social and economic factors necessary to administer an ecologically sustainable system of parks. It is also important that research activities address the demand for good quality outdoor recreation experiences and customer satisfaction.

Research information needs are diverse.

They cover the full spectrum of geological, biological, ecological, cultural, recreational and social sciences.

Scientific research and monitoring by qualified groups and individuals which contributes to the knowledge, inventory and identification of natural and cultural features and to environmental and recreational management objectives will be encouraged where appropriate. Subjects of particular interest include archaeology, geomorphology and geology, as well as earth and life science studies.

All research programs must be compatible with the park's goal, objectives and zoning prescriptions. Research projects require prior approval and must be conducted in accordance with MNR policy concerning research in provincial parks. Research must

also meet all other applicable provincial requirements. Park staff at the zone office will monitor these research programs. Any archaeological research will also require approval and monitoring by the Ministry of Culture. Should provincially or nationally significant features/resources be found, the management plan may be amended to ensure that protection will be provided through appropriate zoning or revision of plan policies.

Research will continue to monitor the effects of the access road through Windigo Bay Provincial Nature Reserve on park values, including caribou, plant populations and water quality for fish.

Research to determine the importance of the pelican nesting colony on islands adjacent to Windigo Bay Provincial Nature Reserve will be completed. This study will determine if the islands should be included in the park. Other research subjects of particular interest for Windigo Bay Provincial Nature Reserve would include woodland caribou populations, migration corridors, habitat suitability and the appropriateness of using fire as a vegetation management tool.

Wildlife facilities and infrastructure may be permitted for scientific research if approved by the Park Superintendent.

10.0 DEVELOPMENT POLICIES

Development policies identify priorities for new development as well as redevelopment of existing facilities. Development is implemented through business and work program planning, based on priority and subject to the availability of human and financial resources, and in accordance with approved site and development plans that detail the location, type and extent of the development permitted.

Ontario Parks will:

- Work in conjunction with the Ministry of Culture to conduct archaeological site assessments in any area of the proposed development. Should sites be known or discovered to exist in an area, inventory of the site(s) will occur; and
- Undertake earth and life science inventories so that development impacts can be mitigated.

No development will take place in nature reserve zones except for necessary signs, trails and facilities that mitigate human impacts.

10.1 ROADS AND TRAILS

Maintenance of existing roads in access zones will be permitted. All other roads will be decommissioned or allowed to naturally abandon. No new roads will be permitted within these five parks, with the exception of the completion of the road through Windigo Bay Provincial Park (Zone 1 and 2). The existing Thunderbird Lookout trail (Lake Nipigon Provincial Park, Zone 3) maybe upgraded to a 15 metre wide trail.

The construction of new trails as described in this plan will be subject to approved site plans.

11.0 PLAN IMPLEMENTATION AND REVIEW

In the implementation of the approved park management plan, Ontario Parks may pursue opportunities for partnerships involving other agencies and groups. Park development, operations and resource stewardship will be contingent upon the availability of funding and unforeseeable changes in priority or policy. Funding may be derived from a variety of sources, including corporate sponsorships and donations. Implementation of the management plan and operation of the park will meet the requirements of the *Environmental Assessment Act*, *Provincial Parks Act* and other pertinent legislation.

Unless otherwise identified in this document, implementation priorities may be established in subsidiary operating and resource stewardship plans. Preparation of these plans will involve the appropriate level of public consultation.

A list of implementation priorities follows. The order may be varied without a plan amendment.

11.1 RESOURCE STEWARDSHIP

- Install signs along Kabitotikwia River Provincial Nature Reserve boundary prohibiting motorboats and baitfish;
- Monitor the effects of the access road through Windigo Bay on park values;
- Undertake detailed life science inventories of Kabitotikwia River, Livingstone Point and West Bay;
- Prepare vegetation and fire stewardship plan(s) for Lake Nipigon, Kabitotikwia River, Livingstone Point, West Bay and Windigo Bay.
- Monitor potential remote campsite locations for signs of use (i.e. West Bay); and
- Undertake detailed earth science inventories of Kabitotikwia River, West Bay and Windigo Bay;

- Undertake detailed cultural inventory of Kabitotikwia River, Livingstone Point, West Bay and Windigo Bay.

11.2 DEVELOPMENT

- Prepare park maps; and
- Evaluate potential improvements to Thunderbird Lookout trail, and associated construction if necessary

11.3 PROJECT SCREENING

The *Environmental Assessment Act* requires that all park management activities conform to approved legislation, policy, procedures, guidelines and standards, including provision for public notice. The preparation of this park management plan constitutes the principal public review opportunity for activities and projects. Exceptions to this are projects where further study is required, or where a decision has been deferred to a subsidiary plan.

11.4 PLAN REVIEW AND AMENDMENT

The *Lake Nipigon Basin Signature Site Park Management Parent Plan* may be reviewed throughout its twenty-year life span, where warranted, to address issues or changing conditions.

A variety of monitoring programs will provide essential information concerning the effectiveness of approved policies. Such mechanisms as the collection of user statistics, periodic user surveys and park management audits will provide valuable information to ensure that policies remain current and relevant. Research findings and resource inventory work may aid in conducting plan reviews.

PARK ZONING



Lake Nipigon

0 400 800 1,200 1,600 m
Scale: 1:50,000

Park Zoning

- Park Boundary
- A3 Access Zone
- NE1 Natural Environment Zone
- NE2 Nature Reserve Zone

Point Features

- Access Point
- Building(s)
- Indian Reserve
- Lake
- Wetland
- River / Creek
- River / Creek Intermittent
- Dam

Utilities

- Transmission Line
- Pipeline

Transportation

- Primary Road
- Secondary Road
- Tertiary Road
- Unknown Road Type
- Trail / Canoe Route
- Railway
- Bridge (with road)



Ontario



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Base Derived From: MVELS
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Produced by: The Provincial Geomatics Service Centre

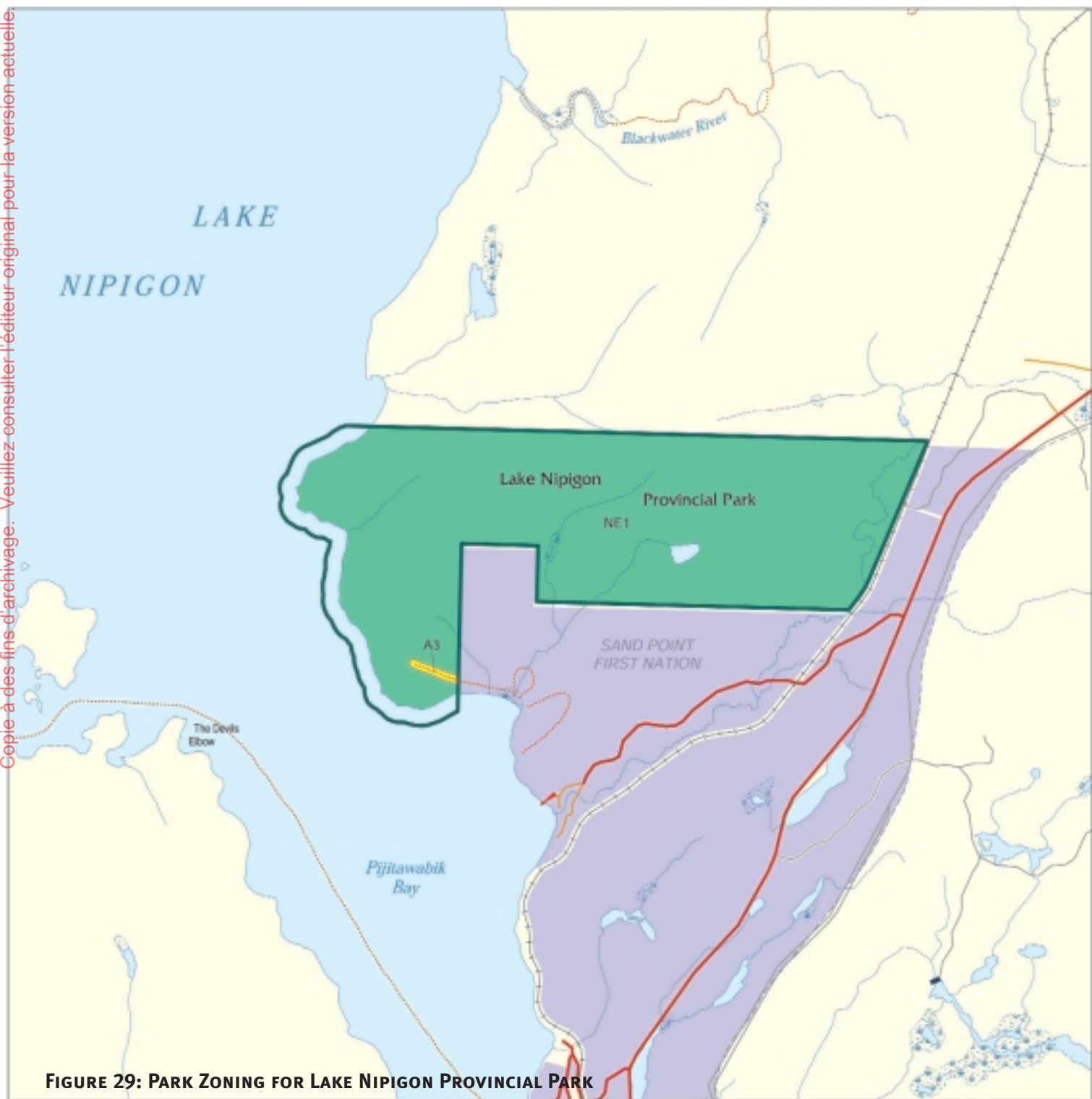


FIGURE 29: PARK ZONING FOR LAKE NIPIGON PROVINCIAL PARK

PARK ZONING



Kabitotikwia River

0 1 2 km
Scale: 1:100,000

Park Zoning

- Park Boundary
- Access Zone
- Natural Environment Zone
- Nature Reserve Zone

Point Features

- Access Point
- Building(s)

Base Features

- Indian Reserve
- Lake
- Wetland
- River / Creek
- River / Creek Intermittent
- Dam

Utilities

- Transmission Line
- Pipeline

Transportation

- Primary Road
- Secondary Road
- Tertiary Road
- Unknown Road Type
- Trail / Canoe Route
- Railway
- Bridge (with road)



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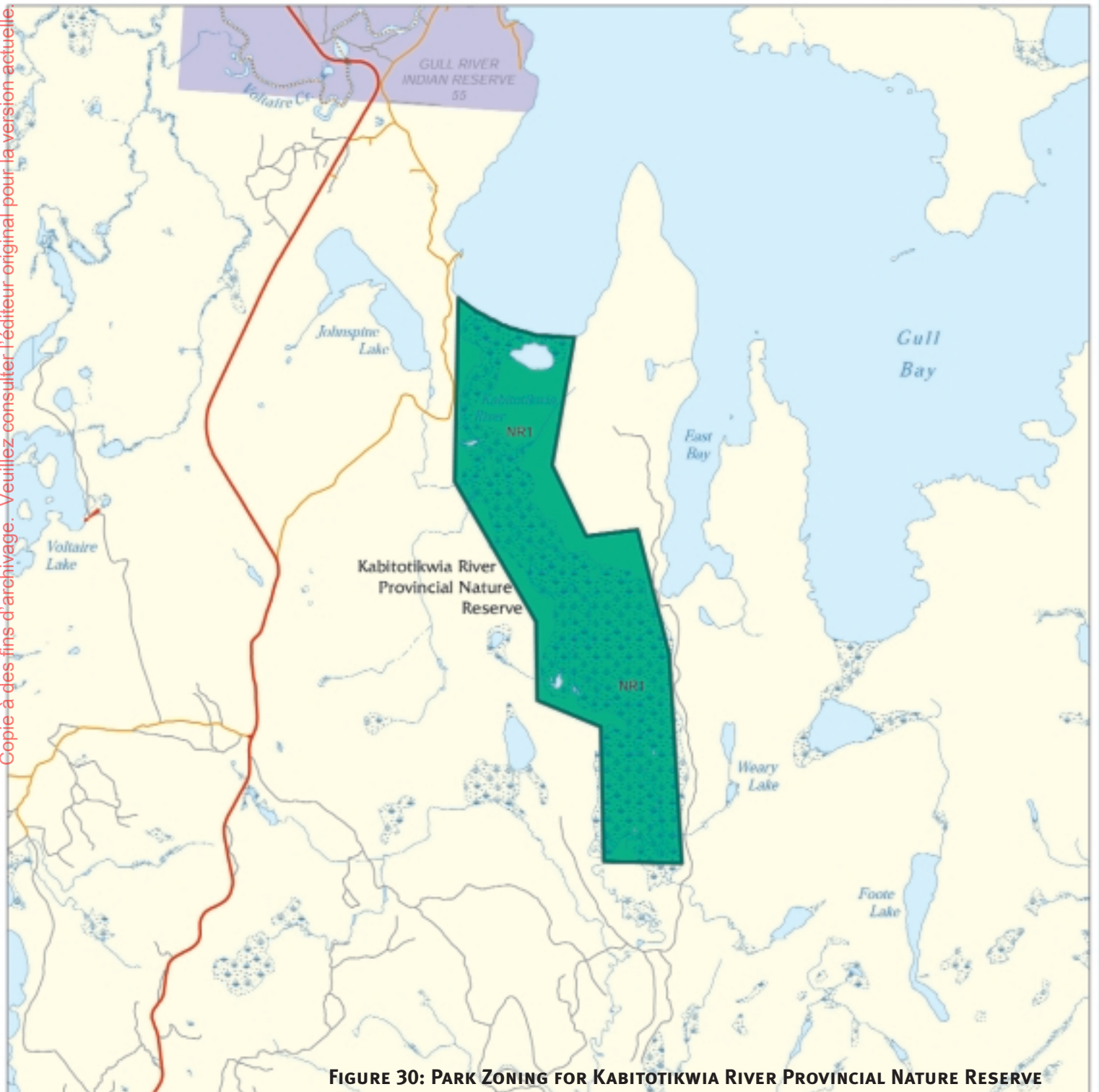


FIGURE 30: PARK ZONING FOR KABITOTIKWIA RIVER PROVINCIAL NATURE RESERVE

PARK ZONING



Livingstone Point

0 1 2 km
Scale: 1:75,000

Park Zoning

- Park Boundary
- A1 Access Zone
- NE1 Natural Environment Zone
- NR2 Nature Reserve Zone

Point Features

- Access Point
- Building(s)

Base Features

- Indian Reserve
- Lake
- Wetland
- River / Creek
- River / Creek Intermittent
- Dam

Utilities

- Transmission Line
- - - Pipeline

Transportation

- Primary Road
- Secondary Road
- Tertiary Road
- - - Unknown Road Type
- - - Trail / Canoe Route
- +— Railway
- Bridge (with road)



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Produced by: The Provincial Geomatics Service Centre

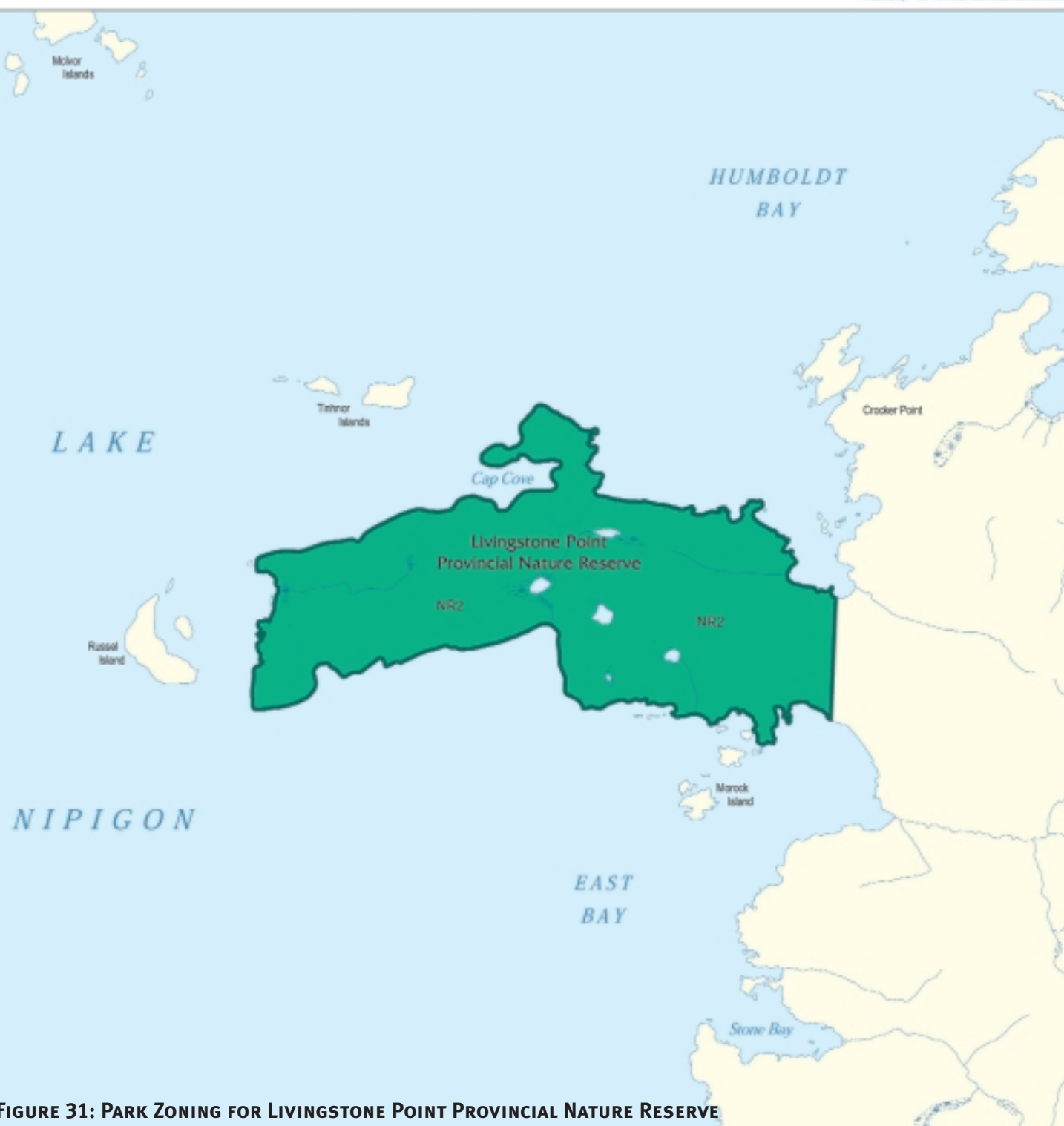


FIGURE 31: PARK ZONING FOR LIVINGSTONE POINT PROVINCIAL NATURE RESERVE

PARK ZONING



Windigo Bay

Scale: 1:125,000

Park Zoning

- Park Boundary
- A1 Access Zone
- NE1 Natural Environment Zone
- NR1 Nature Reserve Zone

Point Features

- Access Point
- Building(s)
- Base Features
- Indian Reserve
- Lake
- Wetland
- River / Creek
- River / Creek Intermittent
- Dam

Utilities

- Transmission Line
- Pipeline

Transportation

- Primary Road
- Secondary Road
- Tertiary Road
- Unknown Road Type
- Trail / Canoe Route
- Railway
- Bridge (with road)



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FIGURE 32: PARK ZONING FOR WINDIGO BAY PROVINCIAL NATURE RESERVE

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PARK ZONING



West Bay

0 1 2 km
Scale: 1:75,000

Park Zoning

- Park Boundary
- A1 Access Zone
- NE1 Natural Environment Zone
- NR3 Nature Reserve Zone

Point Features

- Access Point
- Building(s)
- Indian Reserve
- Lake
- Wetland
- River / Creek
- River / Creek Intermittent
- |— Dam

Utilities

- Transmission Line
- - - Pipeline

Transportation

- Primary Road
- Secondary Road
- Tertiary Road
- - - Unknown Road Type
- - - Trail / Canoe Route
- |— Railway
- Bridge (with road)



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FIGURE 33: PARK ZONING FOR WEST BAY PROVINCIAL NATURE RESERVE

12.0 PUBLIC CONSULTATION

Public consultation for the Lake Nipigon Basin Signature Site began in January, 2001 with the Invitation to Participate (OMNR 2001). This was followed by a series of open houses to present the background information in June, 2001. A stakeholders meeting to discuss management options and ideas was held in September, 2001. Another series of open houses were conducted to present the management options in December, 2001 and January, 2002. First Nations and a variety of stakeholders, interest groups and individual members of the public have expressed an interest in the project including anglers and hunters, cottagers, commercial fishermen, forestry, mining and utility companies, and recreational, naturalist and environmental groups. Discussions have also been held with the Nipigon Watershed Advisory Committee and with Nipigon West, Nipigon East, Spruce River and Armstrong Local Citizens Committees.

Input was received in the form of letters (20+), open house comment sheets (54), questionnaires (31), e-mails (10), briefs (3), proposals (1), data input and correction forms (9), as well as through numerous meetings and telephone calls. Approximately 240 people attended the June, 2001 Open Houses located in Nipigon, Beardmore, Armstrong and Thunder Bay. Approximately 245 people attended the December, 2001 Open Houses located in Nipigon, Beardmore, Armstrong, Thunder Bay and Biinjitiwaabik Zaaging Anishinaabek. Approximately 207 people attended the September, 2002 Open Houses located in Nipigon, Beardmore, Armstrong and Thunder Bay.

The dominant themes in the comments are reflected in the content of this park management parent plan and include:

- Classification of Lake Nipigon Provincial Park;
- Motorized boats within Kabitotikwia River Provincial Nature Reserve; and

- Use restrictions on the road through Windigo Bay Provincial Nature Reserve.

This is the public's final opportunity to review the approved park management parent plan. For a period of 45 days, interested participants in the process have a final opportunity to determine if their concerns have been considered and addressed and to initiate an appeal concerning the plan contents where necessary.

Ontario Parks will retain on file reference copies of relevant background information, terms of reference, preliminary park management parent plan and the approved park management parent plan.

APPENDIX

TABLE 33. POLICY REPORT - LAKE NIPIGON PROVINCIAL PARK

ACTIVITY	PERMITTED	GUIDELINES
COMMERCIAL ACTIVITIES		
AGGREGATE EXTRACTION	No	Please see Section 8.1.1 for more information.
BAIT FISHING (commercial)		
Existing	No	Activity does not presently occur.
New	No	
COMMERCIAL FISHING		
Existing	Yes	Activity does not occur within inland lakes in the park. The activity may occur as part of the commercial fishery on Lake Nipigon. Please see Section 8.1.6 for more information.
New	No	
COMMERCIAL FUR HARVESTING		
Existing	Yes	Existing use permitted to continue indefinitely. Please see Section 8.1.5 for more information.
New	No	
COMMERCIAL HYDRO DEVELOPMENT	No	New commercial development is not permitted. Please see Section 8.1.2 for more information.
COMMERCIAL TIMBER HARVEST	No	Commercial development is not permitted. Please see Section 8.1.3 for more information.
COMMERCIAL TOURISM (e.g. outfitting services, outpost camps, resorts/lodges)		
Existing	No	Activity does not presently occur. New commercial tourism associated with Copper Thunderbird may be permitted. Proposals will be reviewed through future planning.
New	Maybe	
ENERGY TRANSMISSION AND COMMUNICATIONS CORRIDOR NEW:	No	These facilities should avoid park lands whenever possible.
MINERAL EXPLORATION AND DEVELOPMENT	No	
WILD RICE HARVESTING		
Existing	No	Activity does not presently occur.
New	No	
LAND AND RESOURCE MANAGEMENT ACTIVITIES		
CROWN LAND DISPOSITION		
Private Use	No	No land disposition for the private use of individuals is permitted.
Commercial Use	Yes	Commercial disposition subject to decisions regarding commercial tourism determined through future planning.
FIRE SUPPRESSION	Yes	Please see Section 8.1.4 for more information.
FISH HABITAT MANAGEMENT	Yes	Please see Section 8.1.4 for more information.
FISH STOCKING		
Native Species	No	Please see Section 8.1.6 for more information.
Non-native Species	No	
INSECT/DISEASE SUPPRESSION	Yes	Please see Section 8.1.3 for more information.
INVENTORY/MONITORING	Yes	
PERSONAL USE PERMITS FOR WOOD HARVESTING	No	
PRESCRIBED BURNING	Yes	Prescribed burning may be used to meet ecosystem management objectives in the nature reserve zones. Please see Section 8.1.4 for more information.

TABLE 33. POLICY REPORT - LAKE NIPIGON PROVINCIAL PARK *continued*

ACTIVITY	PERMITTED	GUIDELINES
ROADS (non-park use)		
Existing	No	
New	No	
VEGETATION MANAGEMENT	Yes	Please see Section 8.1.3 for more information.
WATER CONTROL STRUCTURE		
Existing	No	
New	No	
WILDLIFE POPULATION MANAGEMENT	Yes	Please see Section 8.1.5 for more information.
SCIENCE, EDUCATION AND HERITAGE APPRECIATION		
DEMONSTRATION AREAS	No	
HISTORICAL APPRECIATION (self guided)	Yes	
NATURE APPRECIATION (self guided)	Yes	
PHOTOGRAPHY AND PAINTING	Yes	
RESEARCH	Yes	Subject to authorization.
WILDLIFE VIEWING	Yes	Limited to facilities (e.g. duck blinds) to be used for research.
RECREATION ACTIVITIES AND FACILITIES		
AIRCRAFT LANDING (water)	No	
ALL TERRAIN VEHICLE USE		
On Trails	No	
Off Trails	No	
CAMPING	Yes	Backcountry campsites only. Please see Section 7.2.1 for more information.
HORSEBACK RIDING (trail)	No	
HUNTING	No	
MOUNTAIN BIKE USE	No	
MOTOR BOAT USE		
Private	Yes	The use of motorized boats is prohibited on any inland waters within Lake Nipigon Provincial Park. Motorized boats are allowed on Lake Nipigon, within the park boundary.
Commercial	Yes	
NON-MOTORIZED RECREATION		
TRAVEL (canoeing, kayaking, hiking, cross-country skiing, snowshoeing)	Yes	
PRIVATE RECREATION CAMPS (Hunt Camps)		
Existing	No	
New	No	
ROCK CLIMBING	No	
SAILING AND SAILBOARDING	Yes	Activity is permitted on Lake Nipigon only. Activity is prohibited on inland lakes.
SCUBA AND SKIN DIVING	Yes	Activity is permitted on Lake Nipigon only. Activity is prohibited on
SNOWMOBILING		
On Trails	Yes	Snowmobile use is restricted to trappers accessing existing trapline trails for trapline NG-108.
Off Trails	No	
SPORT FISHING	Yes	Consult the Ontario Recreational Fishing Regulations Summary for specific local details.
TRAIL DEVELOPMENT	No	Please see Section 10.1 and 7.2.1 for more information.

Note: The policies outlined in this table do not supersede any Aboriginal or treaty rights that may exist, or other legal obligations.

TABLE 34. POLICY REPORT - KABITOTIKWIA RIVER PROVINCIAL PARK

ACTIVITY	PERMITTED	GUIDELINES
COMMERCIAL ACTIVITIES		
AGGREGATE EXTRACTION	No	Please see Section 8.1.1 for more information.
BAIT FISHING (commercial)		
Existing	Yes	Existing use to be phased out no later than Jan.1, 2010.
New	No	Please see Section 8.1.6 for more information.
COMMERCIAL FISHING		
Existing	No	
New	No	
COMMERCIAL FUR HARVESTING		
Existing	Yes	Please see Section 8.1.5 for more information.
New	No	Existing use to be phased out no later than Jan. 1, 2001, except for trapping by Status Indians enjoying Treaty rights.
COMMERCIAL HYDRO DEVELOPMENT	No	Please see Section 8.1.2 for more information.
COMMERCIAL TIMBER HARVEST	No	Please see Section 8.1.3 for more information.
COMMERCIAL TOURISM (e.g. outfitting services, outpost camps, resorts/lodges)		
Existing	No	
New	No	
ENERGY TRANSMISSION AND COMMUNICATIONS CORRIDOR		
NEW:	No	These facilities should avoid park lands whenever possible.
MINERAL EXPLORATION AND DEVELOPMENT	No	
WILD RICE HARVESTING		
Existing	No	Activity does not presently occur.
New	No	
LAND AND RESOURCE MANAGEMENT ACTIVITIES		
CROWN LAND DISPOSITION		
Private Use	No	No land disposition for the private use of individuals is permitted. All existing tenure issued by the Crown for private use will be phased out no later than Jan.1, 2010.
Commercial Use	Yes	
FIRE SUPPRESSION	Yes	Please see Section 8.1.4 for more information.
FISH HABITAT MANAGEMENT	Yes	Please see Section 8.1.2 and 8.1.6 for more information.
FISH STOCKING		
Native Species	No	Please see Section 8.1.6 for more information.
Non-native Species	No	
INSECT/DISEASE SUPPRESSION	Yes	Please see Section 8.1.3 for more information.
INVENTORY/MONITORING	Yes	
PERSONAL USE PERMITS FOR WOOD HARVESTING	Yes	
PRESCRIBED BURNING	Yes	Prescribed burning may be used to meet ecosystem management objectives in the nature reserve zones. Please see Section 8.1.4 for more information.

TABLE 34. POLICY REPORT - KABITOTIKWIA RIVER PROVINCIAL PARK *continued*

ACTIVITY	PERMITTED	GUIDELINES
ROADS (non-park use)		
Existing	No	
New	No	
VEGETATION MANAGEMENT	Yes	Please see Section 8.1.3 for more information.
WATER CONTROL STRUCTURE		
Existing	No	
New	No	
WILDLIFE POPULATION MANAGEMENT	Yes	Please see Section 8.1.5 for more information.
SCIENCE, EDUCATION AND HERITAGE APPRECIATION		
DEMONSTRATION AREAS	No	
HISTORICAL APPRECIATION (self guided)	Yes	
NATURE APPRECIATION (self guided)	Yes	
PHOTOGRAPHY AND PAINTING	Yes	
RESEARCH	Yes	Subject to authorization.
WILDLIFE VIEWING		
RECREATION ACTIVITIES AND FACILITIES		
AIRCRAFT LANDING (water)	No	
ALL TERRAIN VEHICLE USE		
On Trails	No	
Off Trails	No	
CAMPING	No	
HORSEBACK RIDING (trail)	No	
HUNTING	No	
MOUNTAIN BIKE USE	No	
MOTOR BOAT USE		
Private	No	
Commercial	No	
NON-MOTORIZED RECREATION		
TRAVEL (canoeing, kayaking, hiking, cross-country skiing, snowshoeing)	Yes	
PRIVATE RECREATION CAMPS (Hunt Camps)		
Existing	No	
New	No	
ROCK CLIMBING	No	
SAILING AND SAILBOARDING	Yes	
SCUBA AND SKIN DIVING	Yes	
SNOWMOBILING		
On Trails	Yes	Snowmobile use is restricted to trappers accessing existing trapline trails for trapline NG-21.
Off Trails	No	
SPORT FISHING	Yes	Consult the Ontario Recreational Fishing Regulations Summary for specific local details.
TRAIL DEVELOPMENT	Yes	Please see Section 10.1 for more information.

Note: *The policies outlined in this table do not supersede any Aboriginal or treaty rights that may exist, or other legal obligations.*

TABLE 35. POLICY REPORT - LIVINGSTONE POINT PROVINCIAL PARK

ACTIVITY	PERMITTED	GUIDELINES
COMMERCIAL ACTIVITIES		
AGGREGATE EXTRACTION	No	Please see Section 8.1.1 for more information.
BAIT FISHING (commercial)		
Existing	Yes	Existing use to be phased out no later than Jan.1, 2010. Please see
New	No	Section 8.1.6 for more information.
COMMERCIAL FISHING		
Existing	No	Please see Section 8.1.6 for more information.
New	No	
COMMERCIAL FUR HARVESTING		
Existing	Yes	Existing use to be phased out no later than Jan.1, 2010. except for
New	No	trapping by Status Indians enjoying Treaty rights. Please see Section 8.1.5 for more information.
COMMERCIAL HYDRO DEVELOPMENT	No	
COMMERCIAL TIMBER HARVEST	No	
COMMERCIAL TOURISM (e.g. outfitting services, outpost camps, resorts/lodges)		
Existing	No	
New	No	
ENERGY TRANSMISSION AND COMMUNICATIONS CORRIDOR		
NEW:	No	These facilities should avoid park lands whenever possible.
MINERAL EXPLORATION AND DEVELOPMENT	No	
WILD RICE HARVESTING		
Existing	Yes	
New	No	
LAND AND RESOURCE MANAGEMENT ACTIVITIES		
CROWN LAND DISPOSITION		
Private Use	No	No land disposition for the private use of individuals is permitted. All
Commercial Use	No	existing tenure issued by the Crown for private use will be phased out no
		no later than Jan.1, 2010.
FIRE SUPPRESSION	Yes	Please see Section 8.1.4 .
FISH HABITAT MANAGEMENT	Yes	Please see Section 8.1.6 for more information.
FISH STOCKING		
Native Species	No	
Non-native Species	No	
INSECT/DISEASE SUPPRESSION	Yes	Please see Section 8.1.3 for more information.
INVENTORY/MONITORING	Yes	
PERSONAL USE PERMITS FOR WOOD HARVESTING	Yes	
PRESCRIBED BURNING	Yes	Prescribed burning may be used to meet ecosystem management objectives in the nature reserve zone. Please see Section 8.1.4 for more information.

TABLE 35. POLICY REPORT - LIVINGSTONE POINT PROVINCIAL PARK *continued*

ACTIVITY	PERMITTED	GUIDELINES
ROADS (non-park use)		
Existing	No	
New	No	
VEGETATION MANAGEMENT	Yes	Please see Section 8.1.3 for more information.
WATER CONTROL STRUCTURE		
Existing	No	Please see Section 8.1.2 for more information.
New	No	.
WILDLIFE POPULATION MANAGEMENT	Yes	Please see Section 8.1.5 for more information.
SCIENCE, EDUCATION AND HERITAGE APPRECIATION		
DEMONSTRATION AREAS	No	
HISTORICAL APPRECIATION (self guided)	Yes	
NATURE APPRECIATION (self guided)	Yes	
PHOTOGRAPHY AND PAINTING	Yes	
RESEARCH	Yes	Subject to authorization.
WILDLIFE VIEWING	Yes	
RECREATION ACTIVITIES AND FACILITIES		
AIRCRAFT LANDING (water)	No	
ALL TERRAIN VEHICLE USE		
On Trails	No	
Off Trails	No	
CAMPING	No	
HORSEBACK RIDING (trail)	No	
HUNTING	No	
MOUNTAIN BIKE USE	No	
MOTOR BOAT USE		
Private	No	
Commercial	No	
NON-MOTORIZED RECREATION		
TRAVEL (canoeing, kayaking, hiking, cross-country skiing, snowshoeing)	Yes	
PRIVATE RECREATION CAMPS (Hunt Camps)		
Existing	No	
New	No	
ROCK CLIMBING	No	
SAILING AND SAILBOARDING	No	
SCUBA AND SKIN DIVING	Yes	
SNOWMOBILING		
On Trails	Yes	Snowmobile use is restricted to trappers accessing existing trapline trails for trapline NG-86.
Off Trails	No	
SPORT FISHING	Yes	Consult the Ontario Recreational Fishing Regulations Summary for specific local details.
TRAIL DEVELOPMENT	No	Please see Section 10.1.

Note: *The policies outlined in this table do not supersede any Aboriginal or treaty rights that may exist, or other legal obligations.*

TABLE 36 POLICY REPORT - WEST BAY PROVINCIAL PARK

ACTIVITY	PERMITTED	GUIDELINES
COMMERCIAL ACTIVITIES		
AGGREGATE EXTRACTION	No	Please see Section 8.1.1 for more information.
BAIT FISHING (commercial)		
Existing	No	
New	No	
COMMERCIAL FISHING		
Existing	No	Please see Section 8.1.6 for more information.
New	No	
COMMERCIAL FUR HARVESTING		
Existing	Yes	Existing use to be phased out no later than Jan. 1, 2010.
New	No	Please see Section 8.1.5 for more information.
COMMERCIAL HYDRO DEVELOPMENT	No	New commercial development is not permitted. Please see Section 8.1.2 for more information.
COMMERCIAL TIMBER HARVEST	No	Commercial development is not permitted. Please see Section 8.1.3 for more information.
COMMERCIAL TOURISM (e.g. outfitting services, outpost camps, resorts/lodges)		
Existing	No	
New	No	
ENERGY TRANSMISSION AND COMMUNICATIONS CORRIDOR		
NEW:	No	These facilities should avoid park lands whenever possible.
MINERAL EXPLORATION AND DEVELOPMENT	No	
WILD RICE HARVESTING		
Existing	Yes	Existing use to be phased out no later than Jan. 1, 2010, except for Status Indians enjoying Treaty rights,
New	No	
LAND AND RESOURCE MANAGEMENT ACTIVITIES		
CROWN LAND DISPOSITION		
Private Use	No	No land disposition for the private use of individuals is permitted. All existing tenure issued by the Crown for private use will be phased out no no later than Jan.1, 2010.
Commercial Use	No	
FIRE SUPPRESSION	Yes	Please see Section 8.1.4.
FISH HABITAT MANAGEMENT	Yes	Please see Section 8.1.6 for more information.
FISH STOCKING		
Native Species	No	
Non-native Species	No	
INSECT/DISEASE SUPPRESSION	Yes	Please see Section 8.1.3.
INVENTORY/MONITORING	Yes	
PERSONAL USE PERMITS FOR WOOD HARVESTING	Yes	
PRESCRIBED BURNING	Yes	Prescribed burning may be used to meet ecosystem management objectives in the nature reserve zones. Please see Section 8.1.4 for more information.

TABLE 36. POLICY REPORT - WEST BAY PROVINCIAL PARK *continued*

ACTIVITY	PERMITTED	GUIDELINES
ROADS (non-park use)		
Existing	No	
New	No	
VEGETATION MANAGEMENT	Yes	Please see Section 8.1.3.
WATER CONTROL STRUCTURE		
Existing	No	Please see Section 8.1.2.
New	No	.
WILDLIFE POPULATION MANAGEMENT	Yes	Please see Section 8.1.5.
SCIENCE, EDUCATION AND HERITAGE APPRECIATION		
DEMONSTRATION AREAS	No	
HISTORICAL APPRECIATION (self guided)	Yes	
NATURE APPRECIATION (self guided)	Yes	
PHOTOGRAPHY AND PAINTING	Yes	
RESEARCH	Yes	Subject to authorization.
WILDLIFE VIEWING	Yes	
RECREATION ACTIVITIES AND FACILITIES		
AIRCRAFT LANDING (water)	No	
ALL TERRAIN VEHICLE USE		
On Trails	No	
Off Trails	No	
CAMPING	No	
HORSEBACK RIDING (trail)	No	
HUNTING	No	
MOUNTAIN BIKE USE	No	
MOTOR BOAT USE		
Private	No	
Commercial	No	
NON-MOTORIZED RECREATION		
TRAVEL (canoeing, kayaking, hiking, cross-country skiing, snowshoeing)	Yes	
PRIVATE RECREATION CAMPS (Hunt Camps)		
Existing	No	
New	No	
ROCK CLIMBING	No	
SAILING AND SAILBOARDING	No	
SCUBA AND SKIN DIVING	No	
SNOWMOBILING		
On Trails	Yes	Snowmobile use is restricted to trappers accessing existing trapline trails
Off Trails	No	for trapline NG-27.
SPORT FISHING	Yes	Consult the Ontario Recreational Fishing Regulations Summary for specific local details.
TRAIL DEVELOPMENT	No	Please see Section 10.1.

Note: *The policies outlined in this table do not supersede any Aboriginal or treaty rights that may exist, or other legal obligations.*

TABLE 37 POLICY REPORT - WINDIGO BAY PROVINCIAL PARK

ACTIVITY	PERMITTED	GUIDELINES
COMMERCIAL ACTIVITIES		
AGGREGATE EXTRACTION	No	Please see Section 8.1.1.
BAIT FISHING (commercial)		
Existing	Yes	Existing use to be phased out no later than Jan.1, 2010.
New	No	
COMMERCIAL FISHING		
Existing	No	
New	No	
COMMERCIAL FUR HARVESTING		
Existing	Yes	Existing use to be phased out no later than Jan. 1, 2001, except for trapping by Status Indians enjoying Treaty rights.
New	No	
COMMERCIAL HYDRO DEVELOPMENT	No	
COMMERCIAL TIMBER HARVEST	No	
COMMERCIAL TOURISM (e.g. outfitting services, outpost camps, resorts/lodges)		
Existing	No	
New	No	
ENERGY TRANSMISSION AND COMMUNICATIONS CORRIDOR		
NEW:	No	These facilities should avoid park lands whenever possible.
MINERAL EXPLORATION AND DEVELOPMENT	No	
WILD RICE HARVESTING		
Existing	No	
New	No	
LAND AND RESOURCE MANAGEMENT ACTIVITIES		
CROWN LAND DISPOSITION		
Private Use	No	Land disposition for the private use of individuals is not permitted.
Commercial Use	No	
FIRE SUPPRESSION	Yes	Please see Section 8.1.4.
FISH HABITAT MANAGEMENT	Yes	Please see Section 8.1.6.
FISH STOCKING		
Native Species	No	Please see Section 8.1.6.
Non-native Species	No	
INSECT/DISEASE SUPPRESSION	Yes	Non-native species will be controlled, and native species may be controlled. See Section 8.1.3 for more information.
INVENTORY/MONITORING	Yes	
PERSONAL USE PERMITS FOR WOOD HARVESTING	No	
PRESCRIBED BURNING	Yes	Prescribed burning may be used to meet ecosystem management objectives in the nature reserve zones, including enhancing caribou wintering habitat.

TABLE 37. POLICY REPORT - WINDIGO BAY PROVINCIAL PARK *continued*

ACTIVITY	PERMITTED	GUIDELINES
ROADS (non-park use)		
Existing	Yes	No new roads may be constructed in the park. The existing road to access the healing lodge is permitted, subject to the terms and conditions outlined in section 7.2.1 and 7.2.2
New	No	
VEGETATION MANAGEMENT	Yes	See section 8.1.3 for more information.
WATER CONTROL STRUCTURE		
Existing	No	
New	No	
WILDLIFE POPULATION MANAGEMENT	Yes	
SCIENCE, EDUCATION AND HERITAGE APPRECIATION		
DEMONSTRATION AREAS	No	
HISTORICAL APPRECIATION (self guided)	Yes	
NATURE APPRECIATION (self guided)	Yes	
PHOTOGRAPHY AND PAINTING	Yes	
RESEARCH	Yes	Subject to authorization.
WILDLIFE VIEWING	Yes	
RECREATION ACTIVITIES AND FACILITIES		
AIRCRAFT LANDING (water)	No	
ALL TERRAIN VEHICLE USE		
On Trails	Yes	All terrain vehicle use for trapline management purposes and for Whitesand First Nation members accessing the healing lodge on the authorized road and trail, subject to management prescriptions outlined in Section 7.2.1 and 7.2.2.
Off Trails	No	
CAMPING	No	
HORSEBACK RIDING (trail)	No	
HUNTING	No	
MOUNTAIN BIKE USE	No	
MOTOR BOAT USE		
Private	Yes	
Commercial	No	
NON-MOTORIZED RECREATION		
TRAVEL (canoeing, kayaking, hiking, cross-country skiing, snowshoeing)	Yes	
PRIVATE RECREATION CAMPS (Hunt Camps)		
Existing	No	
New	No	
ROCK CLIMBING	No	
SAILING AND SAILBOARDING	No	
SCUBA AND SKIN DIVING	No	
SNOWMOBILING		
On Trails	Yes	Snowmobile use is limited to trapline management purposes and for Whitesand First Nation members accessing the healing lodge on the authorized road and trail, subject to management prescriptions outlined in Sections 7.2.1 and 7.2.2.
Off Trails	No	
SPORT FISHING	Yes	Consult the Ontario Recreational Fishing Regulations Summary for specific local details.
TRAIL DEVELOPMENT	No	Please see section 7.2.2 and 10.1 for more information.

Note: The policies outlined in this table do not supersede any Aboriginal or treaty rights that may exist, or other legal obligations.

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LAKE NIPIGON - BEARDMORE ENHANCED MANAGEMENT AREA RESOURCE MANAGEMENT GUIDELINE

CHAPTER 7

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1 INTRODUCTION

The Lake Nipigon-Beardmore Enhanced Management Area (EMA) was established as a result of the *Lands for Life* and Ontario's Living Legacy land use planning processes. It is recognized in the *Ontario's Living Legacy Land Use Strategy* (1999) as part of the Lake Nipigon Basin Featured Area (also known as Signature Site), one of nine identified featured areas.

This enhanced management area is one of seventeen Land Use Designations that form the Lake Nipigon Basin Signature Site. *Ontario's Living Legacy Land Use Strategy* recognizes this area as providing important shoreline access to southern Lake Nipigon. Future lake oriented development is encouraged (e.g. tourism, cottaging), subject to careful planning that takes into account the recreational and natural values of the area. The designation of enhanced management area allows for more detailed land use direction in areas with special features or values. The same activities that occur in general use areas can also occur in EMAs (i.e. forestry, mining, trapping, hunting, aggregate extraction), however these activities may be subject to special conditions that are designed to support the special values of the area.

The planning process and public consultation required for the development of this resource management guideline was an integral part of the overall development of the *Ecological Land Use and Resource Management Strategy for the Lake Nipigon Basin*. Detailed information relating to the process followed and the public input obtained can be found in Appendix A of the Strategy document.

2 DESCRIPTION

The Lake Nipigon-Beardmore Enhanced Management Area (EMA) is a recreation category EMA. It is located on the southeast shore of Lake Nipigon and includes a three kilometre wide strip of land, 13,091.4 hectares in size, extending from the southern end of Pijitiwabik Bay to Mungo Park Point (Figure 34 and 35).

Almost the entire enhanced management area, with the exception of a small portion at the north end, falls within the Regional Municipality of Greenstone. Existing almost entirely within the EMA boundaries are Biinjitiwaabik Zaaging Anishinaabek (Rocky Bay) and Sand Point First Nations. Animbiigoo Zaagi'igan Anishinaabek (Lake Nipigon Ojibway First Nation) uses this area for traditional activities as do two Aboriginal groups seeking band status, Poplar Point Ojibway and Poplar Point.

This Enhanced Management Area is home to the largest and most popular access points to Lake Nipigon, Poplar Lodge Campground and High Hill Harbour Marina. This EMA provides easy access to Lake Nipigon via Highway 580 and is the staging area for many of the lake's cruiser and charter boat operators. A variety of recreationists use the Poplar Point – High Hill Harbour area including Lake Nipigon anglers (both resident and non-resident), charter boat guests, campground users, cottagers and day users (swimming and picnicking). Kayakers use Poplar Lodge Campground as a starting point for multiple-day trips on Lake Nipigon.

The remote shoreline areas of this EMA are accessed from the water by anglers and boaters for swimming, picnicking and camping. Other resource uses in this enhanced management area include forestry operations, mineral exploration, hydro development, hunting, trapping, and bait fishing.

East-west trending "Greenstone Belt" rocks transect a significant portion of the Lake Nipigon-Beardmore EMA. These rocks have high mineral potential for gold and numerous mining claims have been and are currently staked in the area. Exploration work in the area may include stripping, trenching, sampling, geophysical surveys, geological mapping and diamond drilling.

The Lake Nipigon-Beardmore Enhanced Management Area is dominated by mixed woods, mostly white birch, white spruce, and balsam fir with white cedar along the water's edge. The area was extensively burned in

1999 from Macdiarmid, north to Mungo Park Point. Red and white pine occur intermittently along the Lake Nipigon shoreline slopes. Arctic-alpine plants have been recorded in this EMA some of which are regionally and provincially significant.

Mungo Park Point is an important landfall for caribou migrations in winter. Bald eagle nests (7 known) occur in this EMA along the Lake Nipigon Shoreline as do mineral licks which are important for moose and caribou. Tributaries flowing through the EMA to Lake Nipigon provide important spawning and nursery areas for Lake Nipigon fish species as well as stream resident fish. These streams provide sport fishing opportunities within the EMA.

The boundary of the Lake Nipigon-Beardmore Enhanced Management Area abuts the Lake Nipigon Conservation Reserve to the north and the Nipigon Palisades Conservation Reserve to the south. Highway 11 traverses through the southern portion of the EMA as does the Canadian National Railway and the Trans Canada Pipe Line. Lake Nipigon Provincial Park is situated along the Lake Nipigon shore just north of Macdiarmid.

3 LAND USE DIRECTION

The overall land use intent for the Lake Nipigon-Beardmore EMA is to encourage tourism and recreation development in a nodal fashion, focused on the current campground and marina facilities (Figure 36). The other portions of the EMA will be managed for more remote recreation opportunities. Public access to southeast Lake Nipigon will continue to be promoted through the existing municipal and private access points in the EMA.

A diversity of recreational uses will be promoted in this EMA, ranging from facility-oriented recreation to the use of accessible trail networks and enjoyment of quality backcountry experiences along its more remote sections. Specifically, the Crown land development opportunities that will be permitted in the EMA include:

- Development of one eco-lodge (contingent on potential private sector development)
- Improvement/expansion of the existing campground and marina facilities
- Development of a cottage lot subdivision in close proximity to High Hill Harbour Marina
- Development of a number of recreational trails (i.e. hiking, snowmobiling)

Any future facility development will be approached carefully in order to avoid negatively impacting cultural, biological or recreational values. Site inspections, biological and cultural inventories and assessment of potential impacts will precede any future development. Known values information (Figure 36) will be updated as new information becomes available through inventory work.

4 CROWN LAND DISPOSITION AND DEVELOPMENT

Within the Lake Nipigon-Beardmore Enhanced Management Area, alienated lands currently include the community of Macdiarmid, Biinjitiwaabik Zaaging Anishinaabek (Rocky Bay) Indian Reserve, the municipally run Poplar Lodge Campground (held under a Licence of Occupation) and High Hill Harbour Marina (held under a Land Use Permit). Just north of the Poplar Lodge Campground are nineteen privately owned cottage lots as well as a larger private property at the mouth of the Namewaminikan River on the north and south side. There are approximately 52 staked mining claims in the EMA. Mining leases and mining patents also exist within Eva and Dorothea Townships.

All decisions for the disposition of Crown land are subject to the requirements of the *Environmental Assessment Act*.

4.1 MANAGEMENT DIRECTION

4.1.1 TOURISM

Disposition of Crown land (patent, lease, land use permit) will be guided by the overall land use direction for the Lake Nipigon Basin which identifies this EMA for eco-tourism and outdoor recreation opportunities. Some Crown land will be made available to achieve this objective. The remote, recreation values (e.g. remote beaches and campsites) and ecological values (e.g. eagle nests, wetlands, significant habitat) along portions of this shoreline will be protected in future land disposition and road development decisions. Disposition that promotes nodal development around Poplar Lodge Campground and High Hill Harbour, compatible with the environment and current uses in the area is favoured. Provision of Crown land to the Regional Municipality of Greenstone for the expansion of High Hill Harbour or Poplar Lodge Campground will be considered if needed.

A parcel of Crown land will be identified for the development of an eco-lodge with a non-consumptive theme. The land will be initially leased with conditions, and sold to the proponent once the conditions have been met. A strong business case will be required. The development options would include a road accessible lodge in the vicinity of High Hill Harbour or a remote lodge located at either Grant Point or South High Hill Harbour (Figure 35). Exact site locations must be determined through extensive field investigations and after conducting the necessary inventories/studies to ensure protection of vegetative, wildlife, fisheries, geological and cultural values. Factors that will be key to the success of any proposal include:

- Economic benefits for local First Nations and communities
- Non-consumptive environmental and cultural theme based facility
- Provision of a high quality tourism opportunity

- Integration of the new facility in with existing facilities/operations (e.g. harbour, cruiser operations)
- Be aesthetically pleasing and blend in with the Basin landscape

While the disposition of this opportunity will be given a high priority after approval of the strategy, it must be planned carefully in consideration of any private sector development proposals that may be underway. The overall objective is to ensure that the ecological capacity of the Basin ecosystem to support development is not exceeded; that the value of remoteness is not compromised, and that the development resulting from this disposition is complementary to, and not in competition with, other private sector tourism proposals.

The MNR will seek partners for the development of a lookout - highway rest stop near the microwave tower south of Macdiarmid. This would be an ideal spot to view Pijitawabik Bay and the Palisades and is close to the highway.

The Regional Municipality of Greenstone is a new municipality (1998) and resulted from the amalgamation of a number of individual municipalities, one of which was the Township of Beardmore, which covers the Poplar Lodge - High Hill Harbour area. Currently (2002) there is no official plan in place for the new municipality. As such, the previous official plans and zoning by-laws apply until such time as a new official plan is developed. In the case of Crown land located within the Regional Municipality but not covered by a pre-existing official plan or comprehensive zoning by-law, such as Grant Point, the municipality will be encouraged to develop site specific zoning to address any proposed development. Direction for development will also come from Section 3.1 of the *Planning Act* and the *Provincial Building Code*.

4.1.2 COTTAGING

A parcel of Crown land, proximate to the High Hill Harbour Marina, will be made available to

the Regional Municipality of Greenstone for cottage lot development. Cottage lots will be established at least 500 metres back from the lake shoreline. The land between the lots and the waters' edge will remain Crown. The exact number of lots, lot size and layout will be determined after detailed field investigations to determine suitability of the terrain. Cottage owners will obtain access to the lake via the High Hill Harbour Marina. The marina provides docking, launching, gas and pump-out facilities. The municipality will be responsible for developing a plan of subdivision. No development will take place until inventory work ensures no negative impact on the environment including sensitive values (e.g., significant plant species), cultural features or water quality.

4.1.3 MUNICIPAL DEVELOPMENT

Crown land for other municipal infrastructure development, such as the expansion of existing recreational facilities, may be made available in the EMA subject to municipal needs, provided it is in keeping with the overall land use intent for the area and is supported through municipal planning.

4.1.4 OTHER CROWN LAND DISPOSITION

Crown land disposition for rural residential development will not be permitted in the Lake Nipigon-Beardmore Enhanced Management Area.

Other requests for Crown land disposition and development (e.g. trap cabin) will be considered within the context of the overall land use intent for the Lake Nipigon Basin and the Lake Nipigon-Beardmore EMA and their related objectives.

5 COMMERCIAL ACTIVITIES

The Lake Nipigon-Beardmore Enhanced Management Area is used for a variety of commercial activities including mineral exploration, forestry, fur harvesting, bait fishing and aggregate extraction. A non-operating hydroelectric generating facility is located on the Namewaminikan River just outside the boundaries of the Enhanced Management Area. These uses are permitted to continue while ensuring that the high quality recreation values and significant fish and wildlife habitat in this area are protected.

5.1 MANAGEMENT DIRECTION

5.1.1 FOREST OPERATIONS

Domtar Inc. is the current Sustainable Forest Licence holder for the Lake Nipigon Forest in which the Lake Nipigon – Beardmore Enhanced Management Area is located. Forest management practices in this EMA will be modified in a manner that will ensure the maintenance of recreation values in the EMA. These modifications will be implemented with no impact on wood supply and only in exceptional cases will wood cost be affected.

Forest access roads will be planned to ensure the maintenance of the recreation values in this area such as remote beaches, shoreline campsites, skyline vistas and potential future recreational trail development. To prevent unplanned access to the water's edge, roads within 1 kilometre of the Lake Nipigon shoreline will be constructed to the lowest standard possible (including but not necessarily winter roads only), and be abandoned after forest harvesting and renewal activities are completed. Specific means for abandonment and road regeneration (where required) to prevent unplanned access to the water's edge, will be identified as part of the forest management planning process. This will normally include removing all culverts and bridges from crossings and in most cases will require making the road impassable by ditching, scarifying or creating a berm. New roads for second chance harvest should be directed to existing roadbeds where possible,

with road location and construction standards facilitating access controls and abandonment.

Closing of roads or portions of roads may be required to prevent potential undesired access to the shoreline. Access control decisions will be addressed during the Forest Management Planning process.

Planning for roads in the remainder of the enhanced management area will follow the requirements of the forest management planning manual and may necessitate road decommissioning as well, to ensure that no unplanned access to the water's edge is created.

Aggregate supplies may be extracted from pits within the road right-of-way or within areas approved for allocations, where required for the construction and maintenance of forest access roads within the EMA. In the cases where sufficient aggregate supplies are not available, aggregate may be extracted outside of the road right-of-way or approved allocations through the standard permitting process currently in place. All pits will be rehabilitated at the end of the period of use.

Forest management practices within the entire EMA, will be implemented to ensure the protection of important fish habitat in Lake Nipigon tributaries. Where site conditions allow, temporary bridges will be used at stream crossings. A close liaison between the Ministry of Natural Resources biologist and Sustainable Forest Licence holder will be maintained when carrying out road planning and planning for construction and abandonment of water crossings. A joint site inspection will be required for any crossings requiring in-stream work or culvert installation unless it is mutually agreed that this is not required.

Forest management plans will contain Area of Concern documentation outlining prescriptions for identified values in the enhanced management area (e.g. bald eagles nests, mineral licks, caribou migration corridors, known cultural sites, groundwater recharge zones) within the context of the overall land use intent for this EMA.

Limited forest operations within 300 metres of the Lake Nipigon shoreline will be carried out following consultation and detailed operational planning to maintain the overall recreation intent for this area, and to minimize the possibility of unplanned access to the lake.

5.1.2 MINERAL EXPLORATION

Mineral exploration and extraction is permitted in this EMA. The Ministry of Northern Development and Mines (MNDM) in conjunction with MNR has developed Guidelines for Exploration Practices in Enhanced Management Areas in Ontario (2002). These Guidelines set out a code of “best practices” which prospectors will be encouraged to follow to ensure minimal impact on the environment, addressing road/trail building, working around water, camp operation and abandonment procedures. When work permits or other forms of approval are required for exploration activities, the best practice guidelines will be incorporated into the permit or approval document. An appropriate protocol will be developed to make certain that up-to-date values information is provided to MNDM by MNR and subsequently, to the prospectors working in the EMA so that they can conduct their activities without negatively impacting on known values. A copy of this Guideline is appended to the *Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy*.

5.1.3 AGGREGATE EXTRACTION

Aggregate extraction in this enhanced management area will be primarily for the purpose of forest access road construction and maintenance as well as for mining exploration and development.

Commercial aggregate operations are not permitted within 1 kilometre of the shoreline of Lake Nipigon. In the remainder of the enhanced management area, new commercial aggregate operations may be considered. Applicants must clearly show that the aggregate operation will not conflict with existing or future tourism and recreation

opportunities, or create undesirable impacts on fish and wildlife habitat.

5.1.4 BAIT FISHING

The degree of bait fishing currently occurring in the enhanced management area is not well known. There are 4 bait fish blocks that fall entirely or partly within the EMA (# 494881, 495881, 496881, 497881). Bait fishing will continue to be a permitted use. Any available vacant bait fish blocks will be allocated as per provincial bait fish policy.

5.1.5 FUR HARVESTING

Portions of traplines NG-93, NG-95 and NG-108 fall within the enhanced management area. Trapping is a permitted use in enhanced management areas. Through education and communication, efforts will be made to ensure that trapping activities and current and future recreation activities do not conflict.

5.1.6 HYDROELECTRIC DEVELOPMENT

Hydroelectric development exists on the Namewaminakin River in the form of a dam and reservoir. This facility is in disrepair and requires substantial investment to make it operational. Communication with the dam owner has been initiated and will continue to ensure the facility is repaired with the intent of having it operational by October 31 2003.

5.1.7 OTHER COMMERCIAL ACTIVITIES

Other commercial activities having the potential to negatively affect the natural and cultural values of the EMA will not be permitted (e.g. peat extraction).

Commercial fishing occurs offshore of the EMA in Lake Nipigon where it is a permitted activity and economically important to Biinjitiwaabik Zaaging Anishinaabek and Gull Bay First Nations, Beardmore and Macdiarmid. Commercial fishing is not allowed in tributaries or within 1 kilometre of tributaries entering Lake Nipigon. There is however, an active commercial fishery for smelt in the tributaries, which is conducted during the smelt runs using sport fish equipment (e.g., dip nets). The commercial

smelt fishery will continue to be a permitted use. Commercial fishing for other fish species in the tributaries will not be permitted (e.g., suckers). No new commercial fishing is permitted in the Lake Nipigon – Beardmore EMA.

Commercial activities that do not impact on the values within the EMA may be permitted (e.g., wild rice harvesting).

6 CROWN LAND RECREATION

Angling, hunting, Crown land camping, hiking, swimming and other recreational activities all occur within the Lake Nipigon – Beardmore Enhanced Management Area and form an integral part of the social and economic aspect of the surrounding communities.

6.1 MANAGEMENT DIRECTION

6.1.1 CROWN LAND RECREATION

Crown land recreation activities such as angling, hunting, camping, hiking, berry picking, cycling, snowmobiling, picnicking and swimming all occur in the enhanced management area and will continue to be encouraged. Organized camping will occur in the Poplar Lodge Campground; unstructured camping in other parts of the EMA will occur in traditionally used areas.

Overnight camping will not be permitted on Crown land west of the High Hill Harbour access road between Poplar Lodge Campground and High Hill Harbour. This area will be available for day use only to allow campground users and day visitors to enjoy walking, swimming, picnicking, etc. on the exceptional stretch of sand beach located there. Signs will be posted outlining the restriction.

6.1.2 HUNTING

Hunting will continue to be a permitted use in the enhanced management area. Approximately half of the EMA falls in Wildlife Management Unit 21A and half falls in Unit 19. One Bear Management Area (licence NG-

19-11) also falls partially within the EMA. Moose are the principal big game animal in the area. Some of the charter boat operators offer hunting trips to their clientele allowing hunters to access the remote shoreline areas from the lake. Subsistence hunting also occurs in this area.

6.1.3 ANGLING

Angling is a permitted use within the Lake Nipigon – Beardmore EMA. The entire EMA is in Management Division 33, however, some Division 34 regulations apply in the tributaries up to the first barrier to migration (i.e. northern pike season opens the third Saturday in May and walleye and sauger open June 10).

To provide additional angling opportunities, accessible lakes within the EMA will be assessed for their suitability for stocking. Stocking suitability will be determined using criteria described in the Provincial Stocking Policy Guidelines.

6.1.4 TRAILS

With the intent of maintaining the Poplar Lodge-High Hill Harbour area as the area of nodal development, efforts will be made to establish trails that originate from this location. A network of tertiary forest access roads located northeast of the current cottage lot subdivision will be investigated to determine if there are any abandoned roads that could be developed and promoted as trails. Additional trail clearing will likely be required to establish a good quality trail system.

Another trail opportunity that will be investigated is the development of a nature trail-boardwalk along the Standingstone Creek/wetland. This area is adjacent to the Poplar Lodge Campground and could offer campground visitors with the opportunity to learn about and experience the riverine environment. Extensive field investigation is required to determine exactly how and where the trail could be developed.

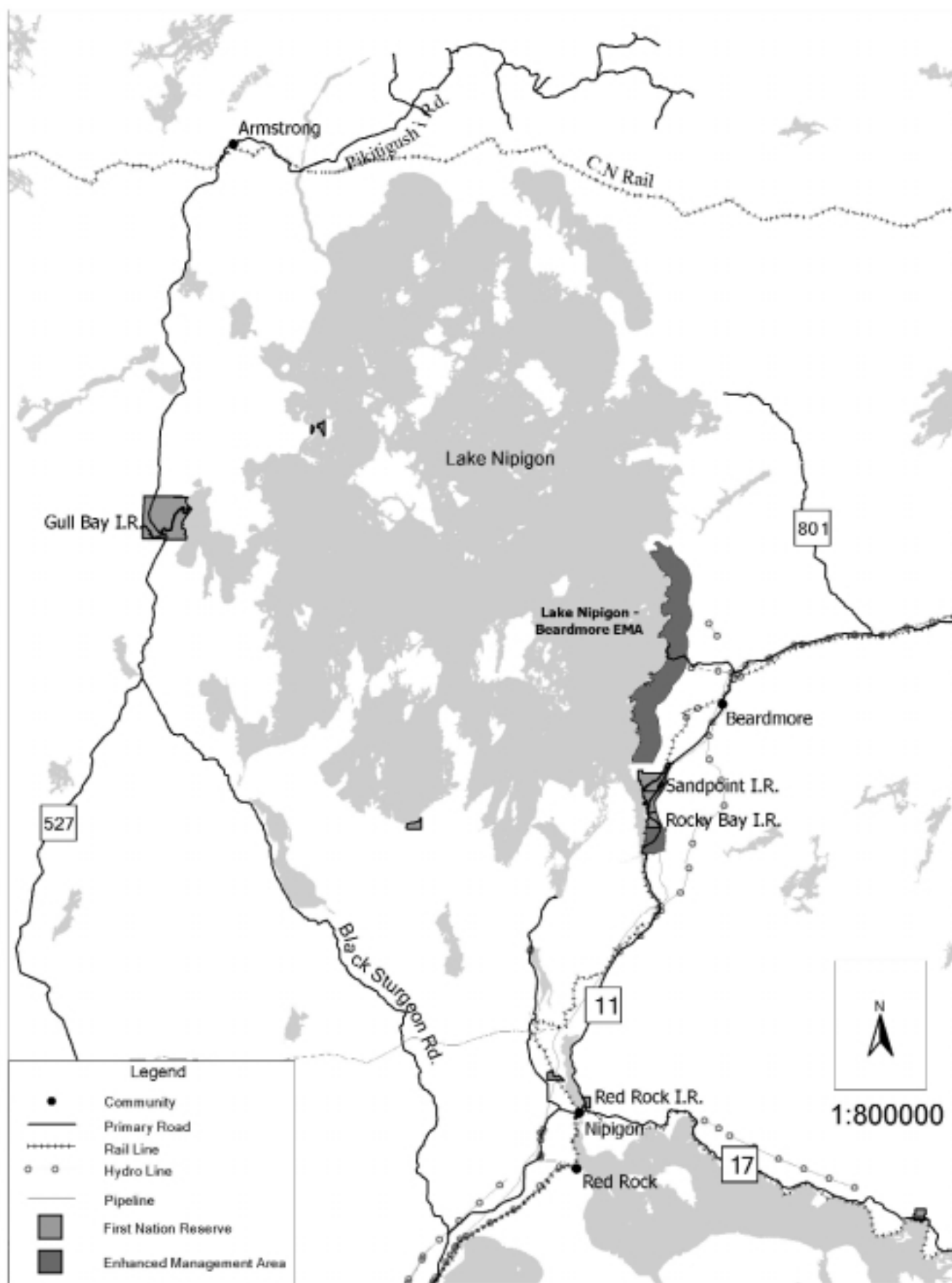
A third trail opportunity involves the development of a coastal trail extending south

from Poplar Lodge Campground to High Hill Harbour to Lake Nipigon Provincial Park.

This trail development would hold a similar appeal as the current coastal trail along Lake Superior, providing a fairly challenging hiking experience in a remote and scenic setting.

Trail development will involve production of promotional brochures, signage and interpretive panels. A partnership with the Regional Municipality of Greenstone and other stakeholders for trail development will be required.

FIGURE 34: REGIONAL SETTING MAP FOR LAKE NIPIGON-BEARDMORE ENHANCED MANAGEMENT AREA



Data Source: MNR NRVIS Database
 Projection: Universal Transverse Mercator, Zone 16
 North American Datum, 1983
 Date: 08/03/02

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INSERT FIGURE 35
BOUNDARY MAP FOR LAKE NIPIGON- BEARDMORE ENHANCED MANAGEMENT AREA

INSERT FIGURE 36
RESOURCE MANAGEMENT MAP FOR LAKE NIPIGON- BEARDMORE EMA

FIGURE 35: BOUNDARY MAP FOR LAKE NIPIGON- BEARDMORE ENHANCED MANAGEMENT AREA

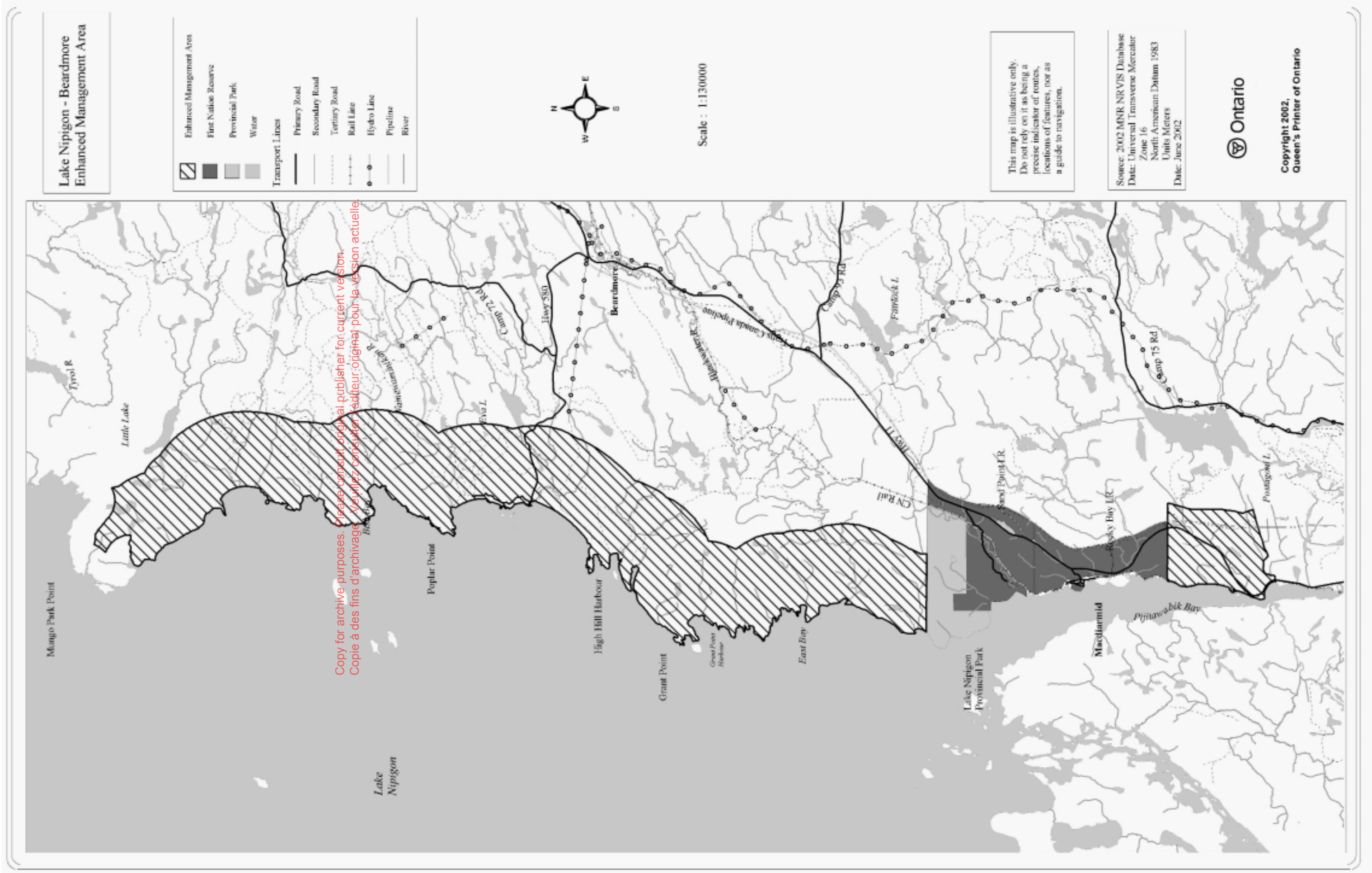
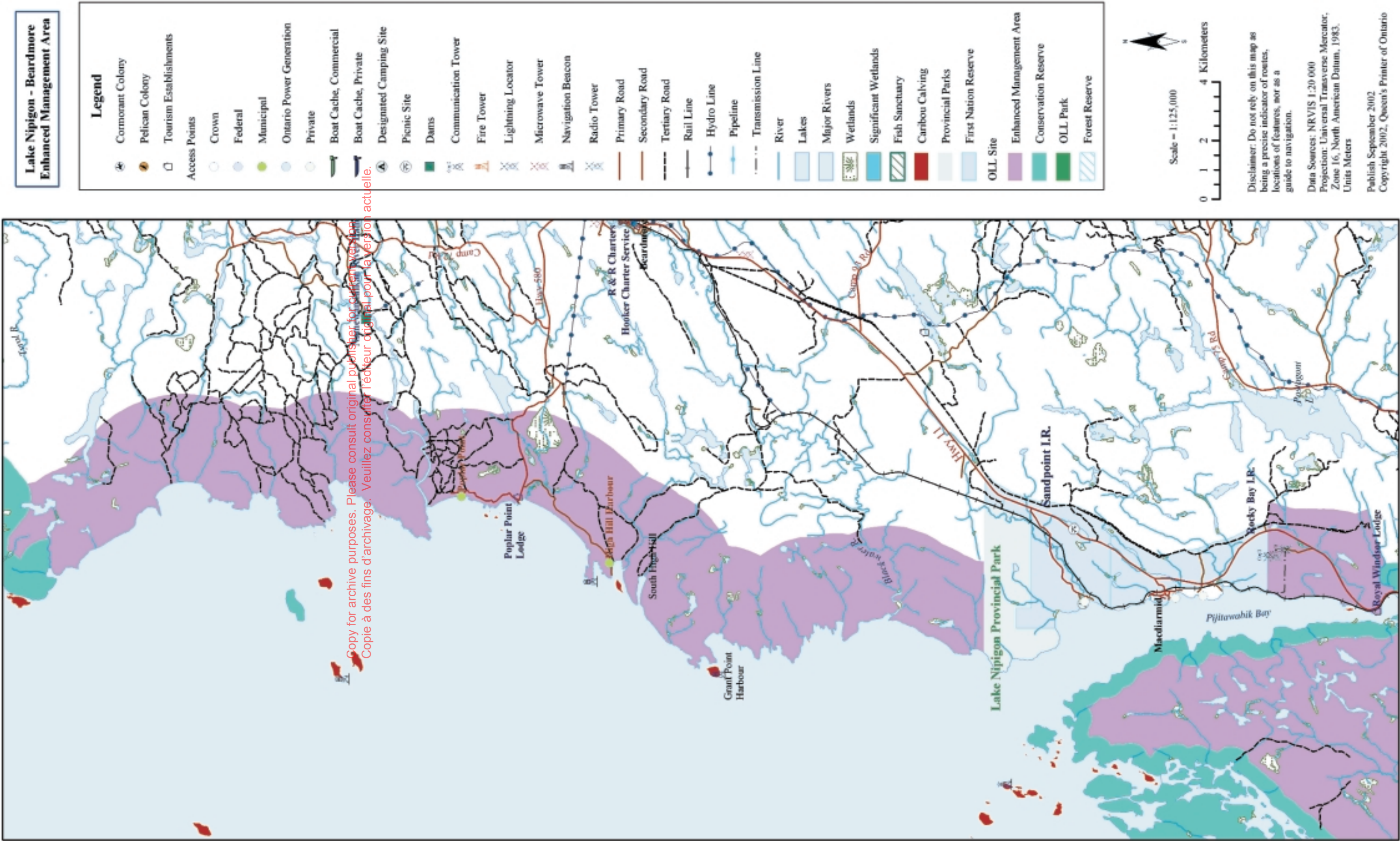


FIGURE 36: RESOURCE MANAGEMENT MAP FOR LAKE NIPIGON- BEARDMORE EMA



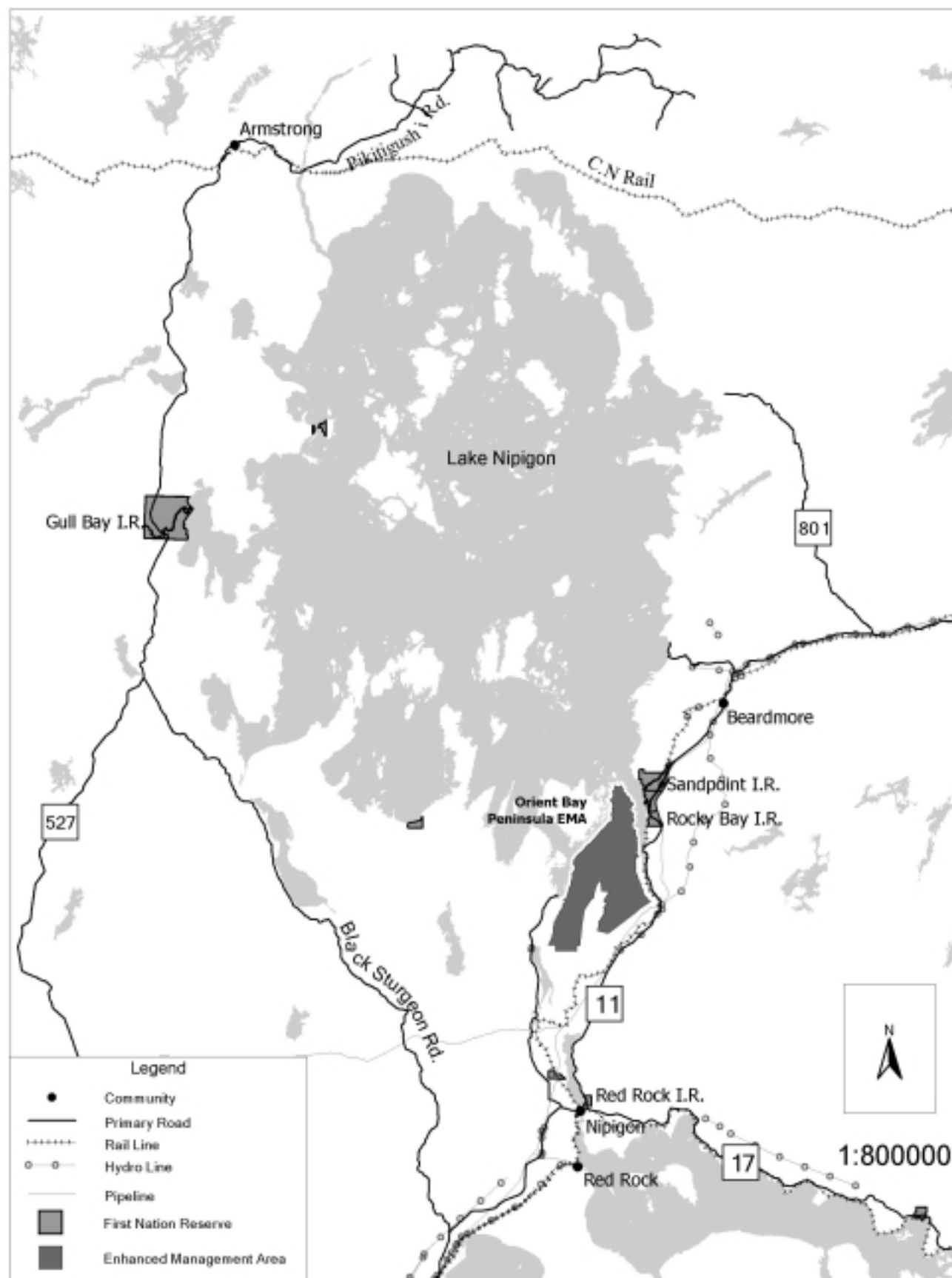
ORIENT BAY PENINSULA ENHANCED MANAGEMENT AREA RESOURCE MANAGEMENT GUIDELINE

CHAPTER 8

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FIGURE 37: REGIONAL SETTING MAP FOR ORIENT BAY PENINSULA ENHANCED MANAGEMENT AREA



Data Source: MNR NRVIS Database
 Projection: Universal Transverse Mercator, Zone 16
 North American Datum, 1983
 Date: 06/03/02

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1 INTRODUCTION

The Orient Bay Peninsula Enhanced Management Area (initially part of the South Lake Nipigon Enhanced Management Area) was established as a result of the *Lands for Life* and *Ontario's Living Legacy* land use planning processes. It is recognized in the *Ontario's Living Legacy Land Use Strategy* (1999) as part of the Lake Nipigon Basin Featured Area (also known as Signature Site), one of nine identified featured areas.

This enhanced management area (EMA) is one of seventeen Land Use Designations that form the Lake Nipigon Basin Signature Site. *Ontario's Living Legacy Land Use Strategy* recognizes this area as an important additional area of enhanced protection for Lake Nipigon, necessary to ensure protection of lake oriented values such as tributaries and important fish and wildlife habitat as well as the value of remoteness. This EMA is also recognized as providing opportunities for remote, backcountry recreation.

The designation of enhanced management area allows for more detailed land use direction in areas with special features or values. The same activities that occur in general use areas can also occur in EMAs (i.e. forestry, mining, trapping, hunting, aggregate extraction), however these activities may be subject to special conditions that are designed to support the special values of the area.

The planning process and public consultation required for the development of this resource management guideline was an integral part of the overall development of the *Ecological Land Use and Resource Management Strategy for the Lake Nipigon Basin*. Detailed information relating to the process followed and the public input obtained can be found in Appendix A of the Strategy document.

2 DESCRIPTION

The Orient Bay Peninsula Enhanced Management Area is a recreation category EMA. It includes most of the peninsula and is completely enclosed by the Lake Nipigon

Conservation Reserve around the northern half of the peninsula, and the Nipigon Palisades Conservation Reserve around the southern portion of the peninsula. The total area of this EMA is 16,166.2 hectares (Figure 37 and 38).

Access to the Orient Bay Peninsula EMA is currently provided by a single forest access road, which crosses Orient Bay north of Keemle Lake and extends into the EMA. This road is currently impassable due to the removal of a water crossing but forest management activities are planned throughout the peninsula in the future and upgrading of this road will occur.

Mixedwood forest is the dominant cover type, followed by deciduous stands, mostly composed of trembling aspen or aspen and birch. The principal species within the mixed wood forests include trembling aspen, black and white spruce, balsam fir and white birch.

Tributaries flowing through the EMA to Lake Nipigon provide important spawning and nursery areas for Lake Nipigon fish species as well as stream resident fish (Figure 39). These streams provide sport-fishing opportunities within the EMA along with opportunities provided by inland lakes (e.g., Shadow Lake, Screen Lake).

3 LAND USE DIRECTION

The overall land use intent for this area is twofold: 1) to ensure that lake oriented values such as spawning streams and remoteness are maintained and 2) to provide remote recreational opportunities within the peninsula. Access and forestry operations within this area will be carefully planned to protect headwater streams flowing into Lake Nipigon (Figure 39).

Access to this EMA will be via a single access route from Highway 11. This access limitation and the configuration of the EMA provide an opportunity for enhancing recreational use of the area. Apart from authorized commercial resource users, access to the EMA by the public will be restricted to off-road vehicles only (e.g., ATVs, snowmobiles). This will help

to reduce the impact of increased use when the area is better accessed for forest management purposes, and will also create new backcountry mechanized recreational opportunities for local residents and tourists.

First Nation people will be allowed motorized access to new roads within the EMA until roads are abandoned, if the area is part of their traditional lands and they are accessing it for traditional pursuits.

No new permanent access roads will be permitted within 2.5 kilometres of Lake Nipigon or the Nipigon River except where no other reasonable alternatives exist. Planning for new access roads must consider alternatives that do not traverse this shoreline portion of the EMA. Other roads in this 2.5 kilometre shoreline portion will be constructed to the lowest standard possible and will be physically abandoned after harvesting and renewal activities are completed. Stream crossings will be kept to a minimum to help protect important tributaries.

4 CROWN LAND DISPOSITION AND DEVELOPMENT

In keeping with the management intent of the EMA, land disposition and development will generally be discouraged. Crown land disposition may occur within the enhanced management area for permitted activities, but only where it is consistent with the land use intent for the maintenance of remoteness and lake oriented values.

All decisions for the disposition of Crown land are subject to the requirements of the *Environmental Assessment Act*.

4.1 MANAGEMENT DIRECTION

4.1.1 TOURISM DEVELOPMENT

There is currently one tourist outpost camp, authorized for hunting only, that is located in the EMA and held under a lease (Figure 39). No new tourism development will be permitted.

4.1.2 OTHER CROWN LAND DISPOSITION

Crown land disposition for new tourism, cottaging or rural residential development will not be permitted in the Orient Bay Peninsula Enhanced Management Area. Other requests for Crown land disposition and development (e.g. trap/bait fish cabins) will be considered within the context of the overall land use intent for the Lake Nipigon Basin and the Orient Bay Peninsula EMA.

5 COMMERCIAL ACTIVITIES

5.1 MANAGEMENT DIRECTION

5.1.1 FOREST OPERATIONS

The Orient Bay Enhanced Management Area falls within the Lake Nipigon Forest, with the Sustainable Forest Licence currently held by Domtar Inc. Access and forest management practices in this EMA will be planned in a manner that will provide for remoteness, the protection of lake tributaries and the protection of remote recreation values.

These modifications will be implemented with no impact on wood supply and only in exceptional cases will wood cost be affected.

Within 2.5 kilometres of Lake Nipigon, no new permanent access is permitted except where no other reasonable alternatives exist. Within this shoreline zone, roads will be built to minimum standards (including but not necessarily winter roads only) and physically abandoned after forest harvesting and renewal activities are completed. Specific means of abandonment and road regeneration (where required) will be identified as part of the forest management planning process. This will normally include removing all culverts and bridges from crossings and in most cases will require making the road impassable by ditching, scarifying or creating a berm. Stream crossings will be kept to a minimum to help protect important tributaries. New roads (for second chance harvest) will be directed to existing roadbeds where possible, and road location and construction will facilitate abandonment.

In the interior of the peninsula the intent is to limit, within operational constraints, the extent of roads built during forest management operations, and to limit through abandonment the number of accessible roads remaining after operations are complete.

Aggregate supplies may be extracted from pits within the road right-of-way or within areas approved for allocations, where required for the construction and maintenance of forest access roads within the EMA. In the cases where sufficient aggregate supplies are not available, aggregate may be extracted outside of the road right-of-way or approved allocations through the standard permitting process currently in place. Any pits will be rehabilitated at the end of the period of use.

Forest management practices will be implemented throughout the EMA to ensure the protection of important fish habitat in Lake Nipigon tributaries. Normally, temporary bridges will be used at stream crossings unless site conditions do not allow this. A close liaison between the Ministry of Natural Resources biologist and Sustainable Forest Licence holder will be maintained when carrying out road planning and planning for construction and abandonment of water crossings. A joint site inspection will be required for any crossings requiring in-stream work or culvert installation unless it is mutually agreed that this is not required.

Public access to the peninsula will be permitted by way of off-road vehicles (e.g., ATV, snowmobile), bicycle, horseback or on foot. Unrestricted access will be permitted by forest industry, government staff, prospectors, bait fishers, trappers and tourist operators while they are conducting their commercial activities. First Nation people will be allowed motorized access to new roads within the EMA until roads are abandoned, if the area is part of their traditional lands and they are accessing it for traditional pursuits. Specific prescriptions for public access control mechanisms will be determined during the forest management planning process.

Forest management plans will contain Area of Concern documentation outlining prescriptions for identified values in the enhanced management area (e.g. bald eagle nests, mineral licks, caribou migration corridors, known cultural sites, groundwater recharge zones, remote recreation values) within the context of the overall land use intent for this EMA.

5.1.2 MINERAL EXPLORATION

Mineral exploration and extraction is permitted in this area. The Ministry of Northern Development and Mines (MNDM) in conjunction with MNR, has developed *Guidelines for Exploration Practices in Enhanced Management Areas in Ontario* (2002). These Guidelines set out a code of “best practices” which prospectors will be encouraged to follow to ensure minimal impact on the environment, addressing activities such as road/trail building, working around water, camp operation and abandonment procedures. When work permits or other forms of approval are required for exploration activities, the best practice guidelines will be incorporated into the permit or approval document. An appropriate protocol will be developed to make certain that up-to-date values information is provided to MNDM by MNR and subsequently, to the prospectors working in the EMA so that they can conduct their activities without negatively impacting on known values. A copy of this Guideline is appended to the *Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy*.

5.1.3 AGGREGATE EXTRACTION

Aggregate extraction in this enhanced management area will be limited to the purposes of forest access road construction and maintenance and for mining exploration and development. Commercial aggregate operations will not be permitted.

5.1.4 BAIT FISHING

The degree of bait fishing currently occurring in the enhanced management area is not well

known. There are 4 bait fish blocks that fall entirely or partially within the EMA (# 494881, 493881, 492881, 492882). Bait fishing will continue to be a permitted use. Any available vacant bait fish blocks will be allocated as per provincial bait fish policy.

5.1.5 FUR HARVESTING

Portions of traplines NG-9, NG-10 fall partially or wholly within the enhanced management area. Trapping will continue to be a permitted use in the Orient Bay Peninsula EMA.

5.1.6 HYDROELECTRIC DEVELOPMENT

No hydro development currently exists within this EMA. Future possible hydroelectric generation opportunities will be evaluated in light of the overall land use direction for the Lake Nipigon Basin and the Orient Bay Peninsula Enhanced Management Area, and with regard to wildlife, fisheries tourism, recreation and cultural values.

5.1.7 OTHER COMMERCIAL ACTIVITIES

Peat extraction and other commercial activities having the potential to negatively affect the natural and cultural values of the EMA will not be permitted.

Commercial fishing does not occur within the EMA, but does occur offshore in Lake Nipigon waters where it is a permitted activity and economically important to local First Nations, Macdiarmid and Beardmore. No new commercial fishing will be permitted in the Orient Bay EMA.

Commercial activities that do not impact on the values within the EMA may be permitted (e.g., wild rice harvesting).

6 CROWN LAND RECREATION

The degree of Crown land recreation that occurs within the Orient Bay Peninsula Enhanced Management Area is not well known. The large size and remote characteristics of this area make it an ideal area for backcountry recreation.

6.1 MANAGEMENT DIRECTION

6.1.1 CROWN LAND RECREATION

Remote recreation activities that will be promoted in the Orient Bay Peninsula EMA include angling and hunting as well as non-consumptive activities such as Crown land camping, canoeing, swimming, nature photography, berry picking and bird watching. Public access is permitted using off-road vehicles or non-mechanized means of travel.

6.1.2 HUNTING

Hunting will continue to be a permitted use in the enhanced management area. The entire EMA is located in Wildlife Management Unit 21A. Four Bear Management Areas (licence #NG 21A-099, NG 21A-010, NG 21A-006, NG 21A-014) fall partially within the EMA. Moose are the principal big game species. Subsistence hunting also occurs in this area.

6.1.3 ANGLING

Angling is a permitted use within the Orient Bay EMA. The entire EMA is in Fishing Division 33, however, some Division 34 regulations apply in the tributaries up to the first barrier to migration (i.e. northern pike season opens the third Saturday in May and walleye and sauger open June 10).

To provide additional angling opportunities, accessible lakes within the EMA will be assessed for their suitability for stocking. Stocking suitability will be determined using criteria described in the Provincial Stocking Policy Guidelines.

6.1.4 TRAILS

Recreational trail development is compatible with the land use intent for this EMA.

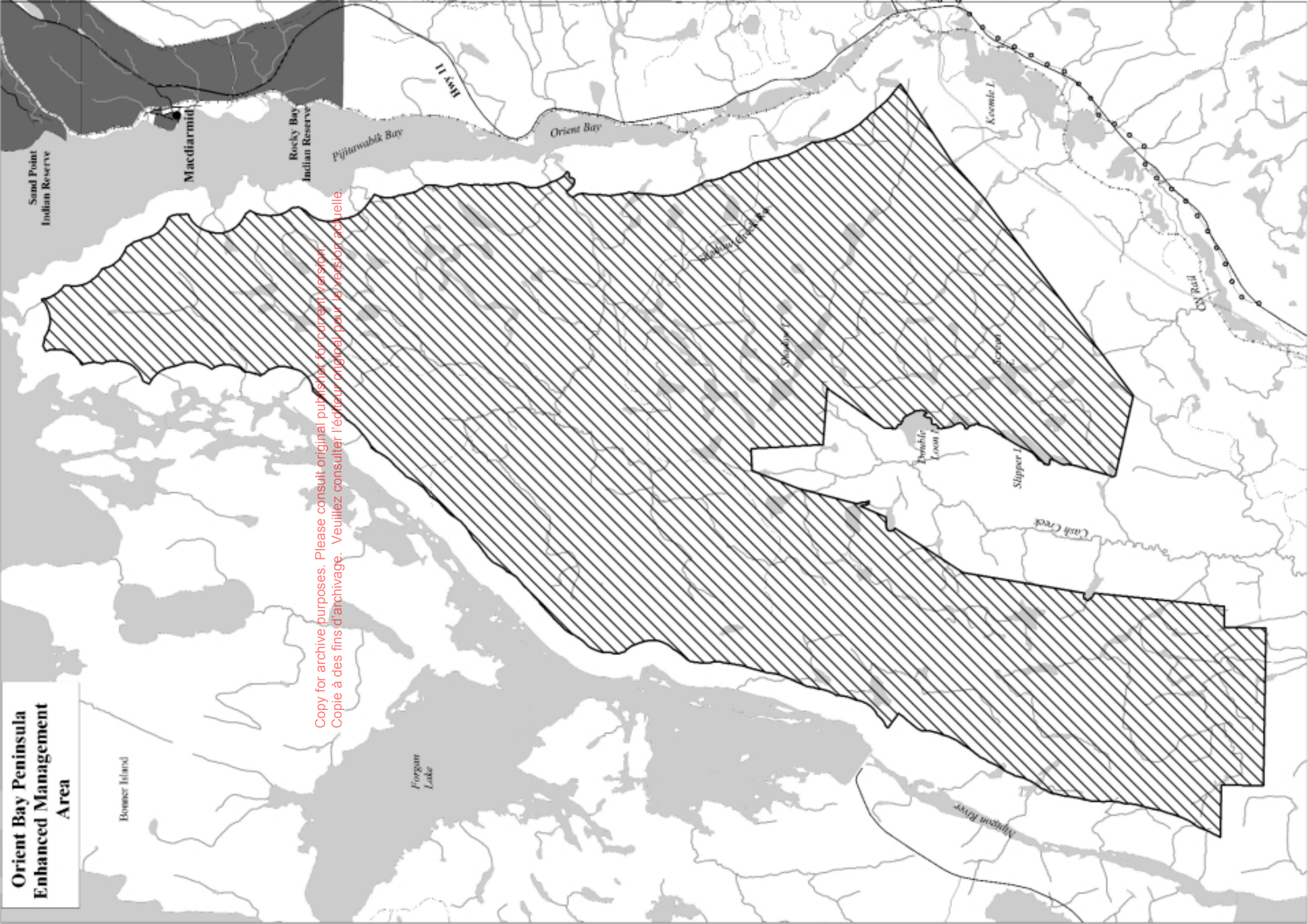
FIGURE 38 BOUNDARY MAP FOR ORIENT BAY PENINSULA ENHANCED MANAGEMENT AREA

INSERT FIGURE 38
BOUNDARY MAP FOR ORIENT BAY PENINSULA ENHANCED MANAGEMENT AREA

FIGURE 39: RESOURCE MANAGEMENT MAP FOR ORIENT BAY PENINSULA ENHANCED MANAGEMENT AREA

INSERT FIGURE 39
RESOURCE MANAGEMENT MAP FOR ORIENT BAY PENINSULA ENHANCED MANAGEMENT AREA

FIGURE 38 BOUNDARY MAP FOR ORIENT BAY PENINSULA ENHANCED MANAGEMENT AREA



Source: 2002 MINR NR/VIS Database
Data: Universal Transverse Mercator
Zone 16
North American Datum 1983
Units: Meters
Date: June 2002

This map is illustrative only.
Do not rely on it as being a
precise indicator of routes,
locations of features, nor as
a guide to navigation.

Enhanced Management Area

First Nation Reserve

Water

River

Primary Road

Secondary Road

Tertiary Road

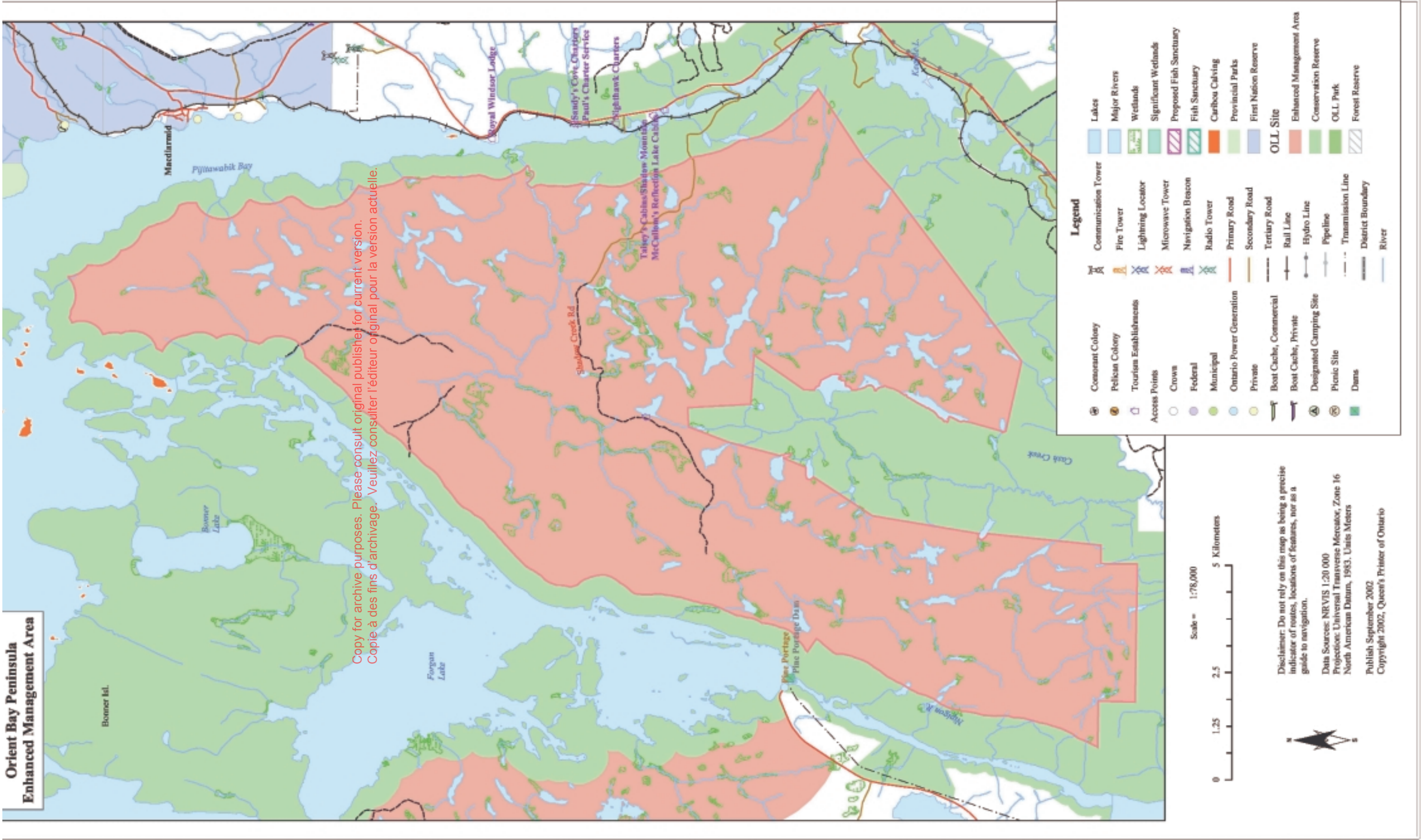
Rail Line



Scale : 1:750000



FIGURE 39: RESOURCE MANAGEMENT MAP FOR ORIENT BAY PENINSULA ENHANCED MANAGEMENT AREA



SOUTH LAKE NIPIGON ENHANCED MANAGEMENT AREA RESOURCE MANAGEMENT GUIDELINE

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1 INTRODUCTION

The South Lake Nipigon Enhanced Management Area was established as a result of the *Lands for Life* and *Ontario's Living Legacy* land use planning processes. It is recognized in the *Ontario's Living Legacy Land Use Strategy* (1999) as part of the Lake Nipigon Basin Featured Area (also known as Signature Site), one of nine identified featured areas.

This enhanced management area (EMA) is one of seventeen Land Use Designations that form the Lake Nipigon Basin Signature Site. *Ontario's Living Legacy Land Use Strategy* recognizes this area as an important additional area of enhanced protection for Lake Nipigon, necessary to ensure protection of lake oriented values such as tributaries and important fish and wildlife habitat as well as the value of remoteness.

The designation of enhanced management area allows for more detailed land use direction in areas with special features or values. The same activities that occur in general use areas can also occur in EMAs (i.e. forestry, mining, trapping, hunting, aggregate extraction), however these activities may be subject to special conditions that are designed to support the special values of the area.

The planning process and public consultation required for the development of this resource management guideline was an integral part of the overall development of the *Ecological Land Use and Resource Management Strategy for the Lake Nipigon Basin*. Detailed information relating to the process followed and the public input obtained can be found in Appendix A of the Strategy document.

2 DESCRIPTION

The South Lake Nipigon Enhanced Management Area is a remote access category EMA. It provides 2 kilometres of additional enhanced protection to the Lake Nipigon Conservation Reserve, along the south shore of Lake Nipigon from Chief Bay to the Nipigon River. It encompasses a total area of

24,568.1 hectares (Figure 40 and 41). *Ontario's Living Legacy Land Use Strategy*, recognizes this area as an important additional buffer necessary to ensure protection of lake oriented values such as remoteness, lake tributaries and significant fish and wildlife habitat.

Access to southern Lake Nipigon is available at a number of locations through this EMA. The Poshkogagan River runs through the EMA and the Lake Nipigon Conservation Reserve into Lake Nipigon providing access to the southwest end of the lake. Highway 585 travels through the EMA, providing access to Forgan Lake via the Pine Portage Access Point, which is located on a Crown lease held by Ontario Power Generation (OPG). A secondary road off of Highway 585 traverses the EMA to the South Bay Access Point. There are a number of tertiary roads that provide access to the EMA at various locations (Church Road, South Line, McCann Lake Road and Chief Bay Road).

Mixedwood forest is the dominant vegetation type, followed by deciduous stands, mostly composed of trembling aspen or aspen and birch. The principal species within the mixedwood forests include trembling aspen, black and white spruce, balsam fir and white birch. To the southeast of McIntyre Bay, white pine mixedwoods are located around Three Mount Lake. A number of arctic disjunct plant species, some of which are regionally significant, have been found in the EMA.

Tributaries flowing through the EMA to Lake Nipigon provide important spawning and nursery areas for Lake Nipigon fish species as well as stream resident fish. These streams provide sport-fishing opportunities within the EMA along with opportunities provided at Oskawe, Krug, Three Mount and Shaver Lakes.

Eight osprey nests have been documented within the South Lake Nipigon EMA. There are also numerous bald eagle and osprey nests along the south shore of Lake Nipigon, to which this EMA provides additional protection (Figure 42).

The west and southwest shores of Lake Nipigon are of significant interest to the mineral exploration and mining industry due to the high potential for platinum group elements (PGE). With regard to the South Lake Nipigon EMA considerable claim staking has occurred in the Chief Bay area of Lake Nipigon in the last one to two years (2000 – 2002). Currently, there are approximately 30 staked mining claims, 13 mining licences of occupation and a number of mining patents.

3 LAND USE DIRECTION

The overall land use intent for this area is to ensure that lake oriented values such as spawning streams and remoteness are maintained. Access and forestry operations within this area will be carefully planned to protect headwater streams flowing into Lake Nipigon.

The remote access category of EMA normally requires that all new roads will be restricted from public use. The narrow and linear nature of this EMA would make the management of road closures very difficult. The access objectives for this EMA will be met by limiting the number of new roads in the area and discouraging any permanent access. There are also a considerable number of abandoned road systems that over time are expected to naturally deteriorate.

No new permanent access is permitted in this area except where no other reasonable alternatives exist. Planning for new permanent access roads must consider alternatives that do not traverse the EMA. Other roads will be constructed to the lowest standard possible and will be physically abandoned after forest harvesting and renewal activities are completed. Stream crossings will be kept to a minimum to help protect important tributaries. The access points at South Bay (new access on southeast side of bay) will remain as a permitted access to the lake. Pine Portage access will continue provided OPG is in agreement.

Backcountry recreation activities such as canoeing, camping, nature appreciation,

angling and hunting will be encouraged in the South Lake Nipigon EMA.

4 CROWN LAND DISPOSITION AND DEVELOPMENT

Within the South Lake Nipigon Enhanced Management Area alienated lands include the McIntyre Bay Indian Reserve (inhabited seasonally), various forms of mining tenure previously mentioned and a number of patented parcels in Innes Township.

In keeping with the management intent for the EMA, land disposition and development will generally be discouraged. However, Crown land disposition can occur for permitted activities, but only where it is consistent with the land use intent for the maintenance of remoteness and lake-oriented values. Any future development will be approached carefully in order to avoid negatively impacting cultural, biological or recreational values. Site inspections, biological and cultural inventories and assessment of potential impacts will precede any future development. Known values information (Figure 42) will be updated as new information becomes available through inventory work.

All decisions for the disposition of Crown land are subject to the requirements of the *Environmental Assessment Act*.

4.1 MANAGEMENT DIRECTION

4.1.1 TOURISM DEVELOPMENT

There is one tourist facility located in the EMA at Krug Lake which is permitted to continue at its current capacity. New tourism development will not be permitted. The area is and will continue to be accessible to charter boat clientele and Crown land recreationalists via existing access roads and Lake Nipigon tributaries for remote hunting, angling, camping and nature appreciation.

4.1.2 OTHER CROWN LAND DISPOSITION

Crown land disposition for new tourism, cottaging or rural residential development will

not be permitted in the South Lake Nipigon Enhanced Management Area.

Other requests for Crown land disposition and development (e.g. trappers cabins) will be considered within the context of the overall land use intent for the Lake Nipigon Basin and the South Lake Nipigon EMA, and their related objectives.

5 COMMERCIAL ACTIVITIES

5.1 MANAGEMENT DIRECTION

5.1.1 FOREST OPERATIONS

The South Lake Nipigon Enhanced Management Area falls within two separate Forest Management Units, the Black Sturgeon Forest and Spruce River Forest, with Sustainable Forest Licences currently held by Bowater Canadian Forest Products Inc. and Abitibi-Consolidated Company of Canada, respectively.

Access and forest management practices in this EMA will be planned, in a manner that will maintain remoteness and the protection of lake tributaries, while ensuring that the long term delivered wood costs and volumes available for industrial use will not be negatively affected.

With regard to access, the overall intent is to limit, within operational constraints, the extent of roads built in the EMA during forest management operations. This includes the intent to limit stream crossings and to limit the number of accessible roads remaining after operations are complete, through abandonment activities.

No new permanent access is permitted in this EMA, except where no other reasonable alternatives exist. Roads will be constructed to the lowest standard possible (including but not necessarily winter roads only) and will be physically abandoned through a variety of means when no longer required for forestry activities. Specific means for abandonment and road regeneration (where required) to prevent unplanned access to the water's edge,

will be identified as part of the forest management planning process. This will normally include removing all culverts and bridges from crossings and in most cases will require making the road impassable by ditching, scarifying or creating a berm. New roads (for second harvest chances) will be directed to existing roadbeds where possible, and road location and construction will facilitate abandonment.

Forest management practices will be implemented to ensure the protection of important fish habitat in Lake Nipigon tributaries. Normally, temporary bridges will be used at stream crossings unless site conditions do not allow this. A close liaison between the Ministry of Natural Resources biologist and Sustainable Forest Licence holder will be maintained when carrying out road planning and planning for construction and abandonment of water crossings. A joint site inspection will be required for any crossings requiring in-stream work or culvert installation unless it is mutually agreed that this is not required.

Aggregate supplies may be extracted from pits within the road right-of-way or within areas approved for allocations, where required for the construction and maintenance of forest access roads within the EMA. In cases where sufficient aggregate supplies are not available, aggregate may be extracted outside of the road right-of-way or approved allocations, through the standard permitting process. All pits will be rehabilitated at the end of the period of use.

Forest management plans will contain Area of Concern documentation outlining prescriptions for identified values in the enhanced management area (e.g. bald eagle nests, mineral licks, caribou migration corridors, known cultural sites, groundwater recharge zones, remote recreation values) within the context of the overall land use intent for this EMA.

5.1.2 MINERAL EXPLORATION

Mineral exploration and extraction is permitted in this area. The Ministry of

Northern Development and Mines (MNDM), in conjunction with MNR, has developed *Guidelines for Exploration Practices in Enhanced Management Areas in Ontario* (2002). These Guidelines set out a code of “best practices” which prospectors will be encouraged to follow to ensure minimal impact on the environment, addressing activities such as road/trail building, working around water, camp operation and abandonment procedures. When work permits or other forms of approval are required for exploration activities, the best practice guidelines will be incorporated into the permit or approval document. An appropriate protocol will be developed to make certain that up-to-date values information is provided to MNDM by MNR and subsequently, to the prospectors working in the EMA so that they can conduct their activities without negatively impacting on known values. A copy of this Guideline is appended to the *Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy*.

5.1.3 AGGREGATE EXTRACTION

Aggregate extraction in this enhanced management area will normally be limited to the purposes of forest access road construction and maintenance as well as for mining exploration and development.

Commercial aggregate operations are not permitted within 1 kilometre of the shoreline (the first 500 metres of shoreline is within the Lake Nipigon Conservation Reserve) of Lake Nipigon. In the remainder of the enhanced management area, new commercial aggregate operations may be considered. Applicants must clearly show that the aggregate operation will not impact lake oriented values (e.g. spawning streams) or remoteness.

5.1.4 BAIT FISHING

The level of bait fish harvest/bait fishing activity currently occurring in the enhanced management area is not well known. There are 12 bait fish blocks that fall entirely or partially within the EMA (# 's 495884, 496884, 496891, 495891, 494891, 494884,

494883, 494882, 494881, 493881, 492881, 492882). Bait fishing will continue to be a permitted use. Any available vacant bait fish blocks will be allocated as per provincial bait fish policy.

5.1.5 FUR HARVESTING

Portions of traplines NG-11, NG-14, NG-19, NG-20 and NG-21 fall partially or wholly within the enhanced management area. Trapping will continue to be a permitted use in the South Lake Nipigon EMA. The level of fur harvest from the EMA is unknown.

5.1.6 HYDROELECTRIC DEVELOPMENT

No hydro development currently exists within this EMA. Any possible hydroelectric generation opportunities proposed in the future will be considered in light of the overall land use direction for the Lake Nipigon Basin and the South Lake Nipigon Enhanced Management Area, and with regard to tourism, recreational, cultural, wildlife and fisheries values.

5.1.7 OTHER COMMERCIAL ACTIVITIES

Peat extraction and other commercial activities having the potential to negatively affect the natural and cultural values of the EMA will not be permitted.

Commercial fishing does not occur within the EMA, but does occur offshore in Lake Nipigon waters where it is a permitted activity and economically important to local First Nations and the communities of Macdiarmid and Beardmore. No new commercial fishing is permitted in the EMA.

Commercial activities that do not impact on the values within the EMA may be permitted (e.g., wild rice harvesting).

6 CROWN LAND RECREATION

Angling, hunting, canoeing, Crown land camping, hiking, swimming and other recreational activities all occur within the South Lake Nipigon Enhanced Management Area.

6.1 MANAGEMENT DIRECTION

6.1.1 CROWN LAND RECREATION

Remote recreation activities that will be permitted and promoted in the South Lake Nipigon EMA include Crown land camping, hiking, canoeing, swimming, berry picking, angling and hunting. Mechanized travel is permitted on existing accessible roadways. Crown land camping will be governed by the 21-Day Crown land camping rule.

The South Bay access road to the new South Bay access point (southeast side of bay) will remain open to the public. The road accessing the old South Bay access point (south end of the bay) will be closed to the public to protect fish habitat.

6.1.2 HUNTING

Hunting will continue to be a permitted use in the enhanced management area. The entire EMA falls in Wildlife Management Unit 15B. Five Bear Management Areas (licence # TB-15B-015, NG-15B-043, NG-15B-031, TB 15B-53, NG 15B-45) also fall partially within the EMA. Moose are the principal big game animal in the area. Subsistence hunting also occurs in this area. Work with the Provincial Deer Committee will be initiated in an effort to open 15B to white-tailed deer hunting.

6.1.3 ANGLING

Angling is a permitted use within the South Lake Nipigon EMA. The entire EMA is in Fishing Division 21, however, some Division 34 regulations apply in the tributaries up to the first barrier to migration (i.e. northern pike season opens the third Saturday in May and walleye and sauger open June 10).

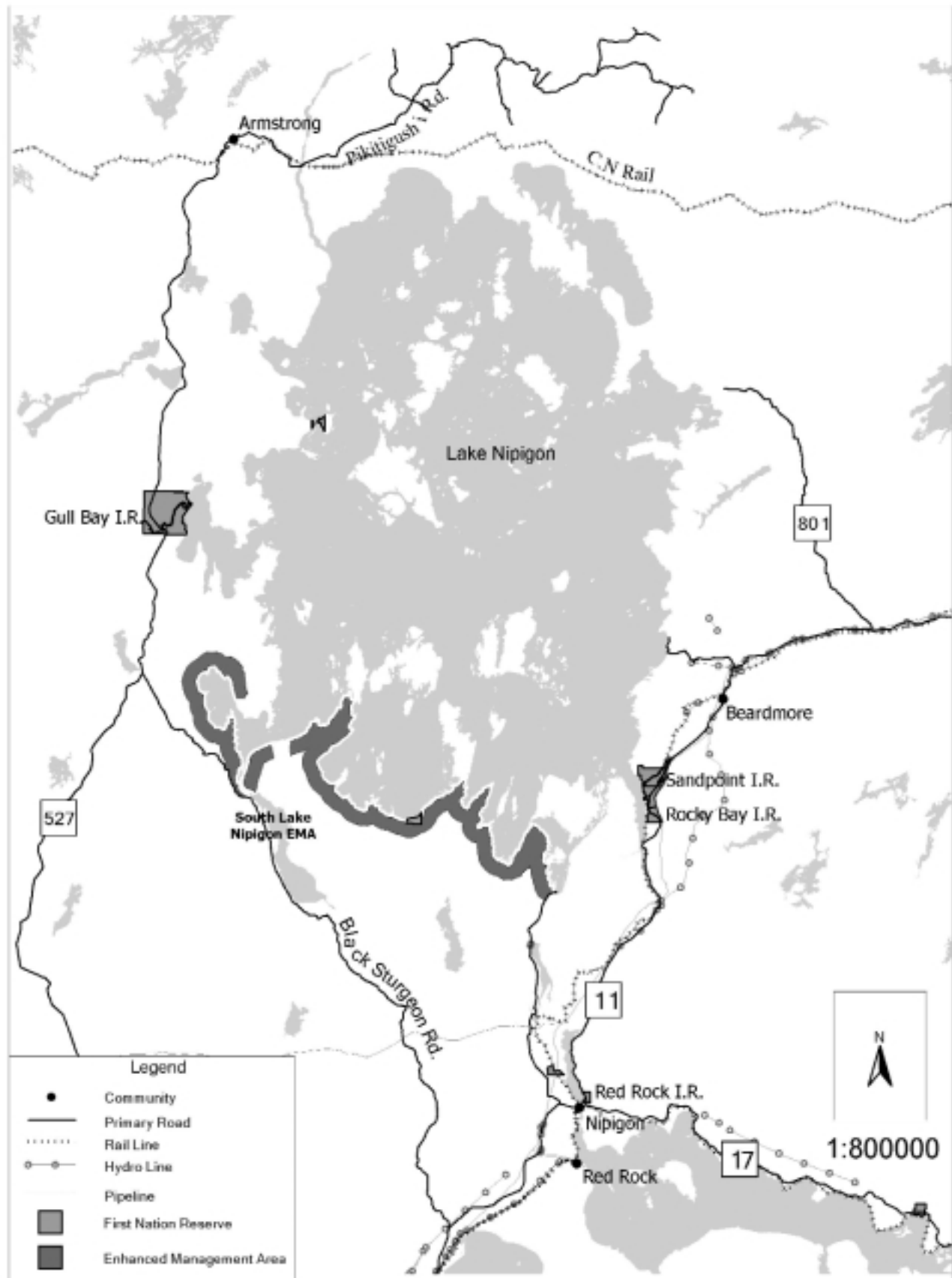
To provide additional angling opportunities, accessible lakes within the EMA will be

assessed for their suitability for stocking. Stocking suitability will be determined using criteria described in the Provincial Stocking Policy Guidelines.

6.1.4 TRAILS

The development of new recreational trail systems (e.g., hiking trails, snowmobile trails, ATV trails) will not be permitted.

FIGURE 40: REGIONAL SETTING MAP FOR SOUTH LAKE NIPIGON ENHANCED MANAGEMENT AREA



Data Source: MNR NR/VIS Database
 Projection: Universal Transverse Mercator, Zone 16
 North American Datum, 1983
 Date: 06/03/02

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INSERT FIGURE 41
BOUNDARY MAP FOR SOUTH LAKE NIPIGON ENHANCED MANAGEMENT AREA

INSERT FIGURE 42
RESOURCE MANAGEMENT MAP FOR SOUTH LAKE NIPIGON ENHANCED MANAGEMENT AREA

FIGURE 41: BOUNDARY MAP FOR SOUTH LAKE NIPIGON ENHANCED MANAGEMENT AREA

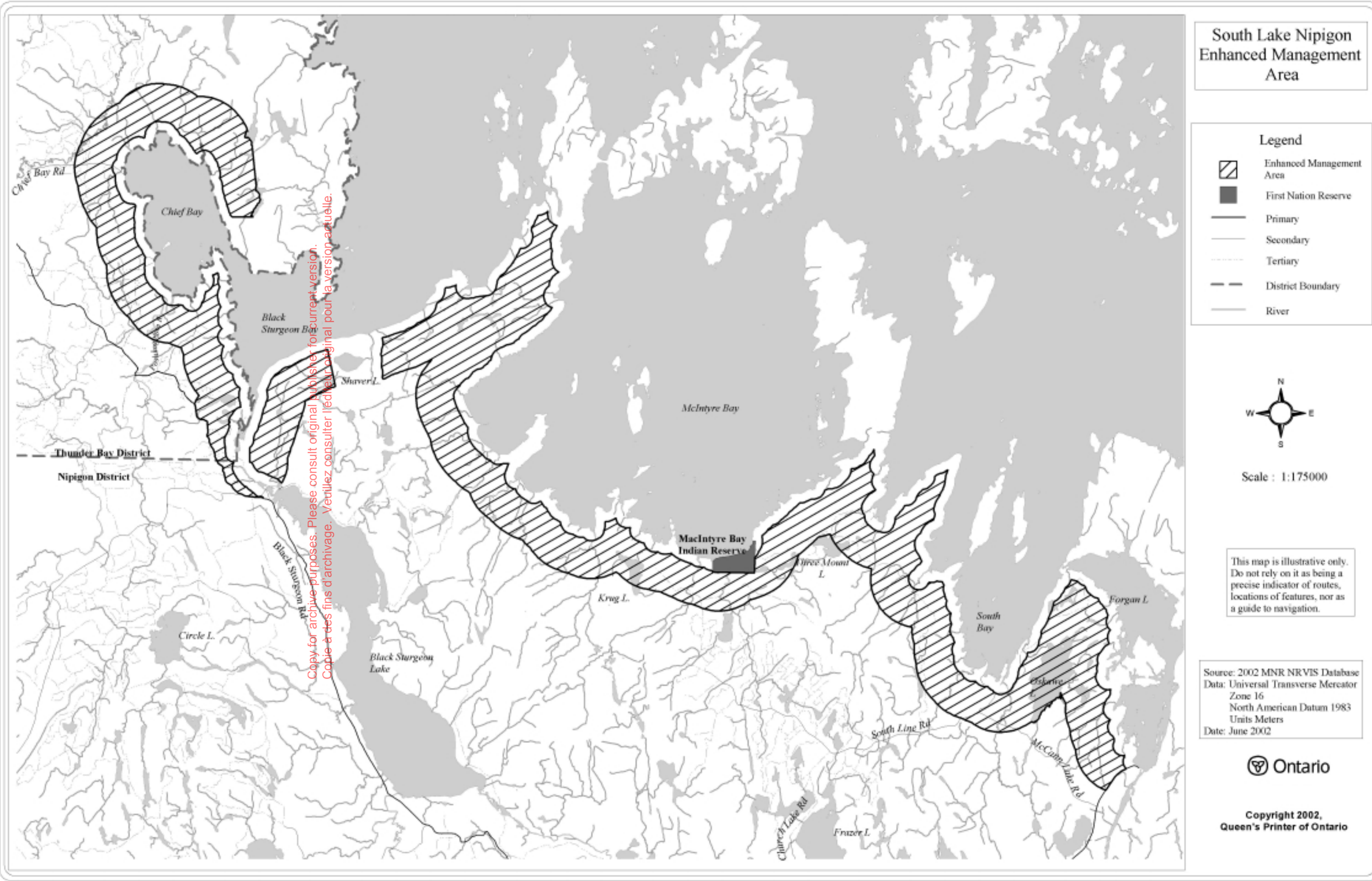
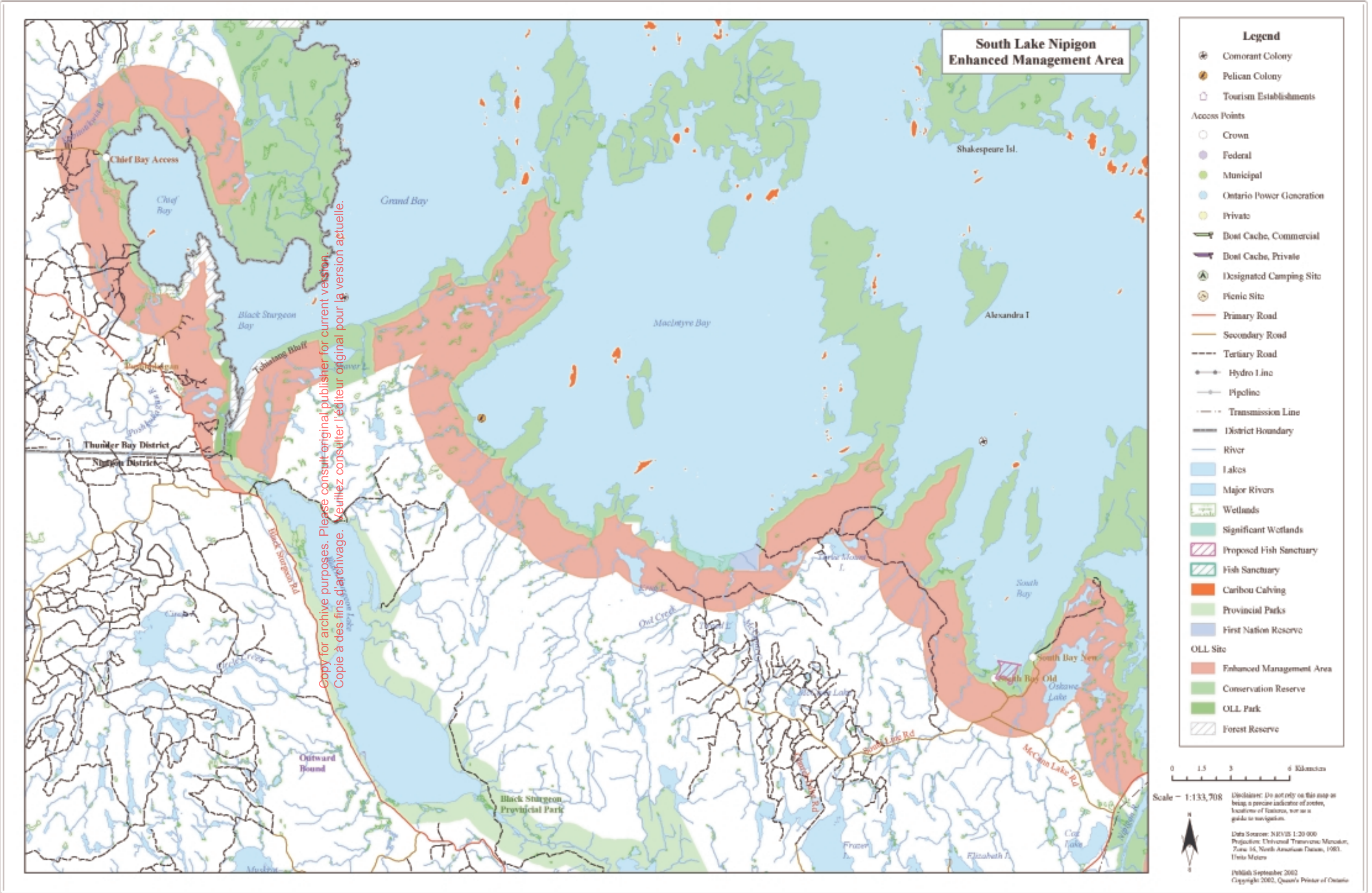


FIGURE 42: RESOURCE MANAGEMENT MAP FOR SOUTH LAKE NIPIGON ENHANCED MANAGEMENT AREA



GULL BAY ENHANCED MANAGEMENT AREA RESOURCE MANAGEMENT GUIDELINE

CHAPTER 10

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1 INTRODUCTION

The Gull Bay Enhanced Management Area (EMA) was established as a result of the *Lands for Life* and *Ontario's Living Legacy* land use planning processes. It is recognized in the *Ontario's Living Legacy Land Use Strategy* (1999) as part of the Lake Nipigon Basin Featured Area (also known as Signature Site), one of nine identified featured areas.

This enhanced management area is one of seventeen Land Use Designations that form the Lake Nipigon Basin Signature Site. *Ontario's Living Legacy Land Use Strategy* recognizes this EMA as an important shoreline access area to western Lake Nipigon with potential for future development of shoreline facilities for access and recreation. The designation of enhanced management area allows for more detailed land use direction in areas with special features or values. The same activities that occur in general use areas can also occur in EMAs (i.e. forestry, mining, trapping, hunting, aggregate extraction), however these activities may be subject to special conditions that are designed to support the special values of the area.

The planning process and public consultation required for the development of this resource management guideline was an integral part of the overall development of the *Ecological Land Use and Resource Management Strategy for the Lake Nipigon Basin*. Detailed information relating to the process followed and the public input obtained can be found in Appendix A of the Strategy document.

2 DESCRIPTION

The Gull Bay Enhanced Management Area (EMA), 209.2 hectares in size, is a recreation category EMA. It is located on the west shore of Lake Nipigon and includes two strips of shore land, 200 metres wide along the waters edge, extending north and south from the Gull Bay First Nation Reserve (Figure 43 and 44).

This area has clearly been identified for the purpose of improved west shore access.

A secondary road extending off of Highway 527 provides access to the southern portion of this EMA and a small scale facility known as Kings Landing (with several buildings, docks, boat ramp and basic campsites). Non-resident anglers and boaters are the primary users of this facility. The northern portion of this EMA is sensitive wetland habitat and not conducive to development. A tertiary road accesses the north portion of the EMA near Duck Bay.

The west shore of Lake Nipigon is of significant interest to the mineral exploration and mining industry due to the high potential for platinum group element (PGE) metals and the potential of the Nipigon Plate assemblage as a source of these metals. Considerable claim staking has occurred on the west side of Lake Nipigon in the last two years (2000 – 2002). There are currently two staked mining claims that fall partially in the southern portion of the Gull Bay EMA.

The area has a relatively homogeneous vegetation cover, with trembling aspen deciduous forests and conifer mixedwoods composed of aspen, birch, spruce and fir. Less common mixedwood forest types are characterized by white birch or cedar with balsam fir (the fir component has been virtually eliminated by spruce budworm) and aspen-jackpine communities. Coniferous forest present include jack pine on cliff slopes and black spruce swamps that occur as extensive stands in the northeast sector of this EMA.

Tributaries flowing through the EMA to Lake Nipigon provide important spawning and nursery areas for Lake Nipigon fish species as well as stream resident fish.

3 LAND USE DIRECTION

The land use intent for the Gull Bay Enhanced Management Area is to provide access to the west side of Lake Nipigon. Future access and shoreline facility development will be promoted. Economic benefit to the Gull Bay First Nation is a primary objective.

Any future development will be approached carefully in order to avoid negatively impacting cultural, biological or recreational values. Site inspections, biological and cultural inventories and assessment of potential impacts will precede any future development. Known values information (Figure 45) will be updated as new information becomes available through inventory work.

4 CROWN LAND DISPOSITION AND DEVELOPMENT

Crown land disposition for the purpose of establishing a shoreline access/campground facility is permitted. Crown land disposition for other purposes will be considered in the context of the overall land use intent and objectives for the Lake Nipigon Basin and the Gull Bay Enhanced Management Area.

All decisions for the disposition of Crown land are subject to the requirements of the *Environmental Assessment Act*.

4.1 MANAGEMENT DIRECTION

4.1.1 SHORELINE/ACCESS FACILITY DEVELOPMENT

A parcel of Crown land will be identified for the development of shoreline recreation and access facilities. Gull Bay First Nation will be approached to be a partner in the development of this parcel. The land will initially be leased with conditions (e.g., permitted development on site, time frame for development) and sold to the First Nation once the conditions have been met. A strong business case will be required. The location of the development will be in the southern portion of the enhanced management area, as the shoreline along the northern portion is largely comprised of sensitive wetland features. The majority of the shoreline in the southern portion has a stable boulder-type shoreline suitable for development. The exact site location will be determined through thorough field investigations and after conducting the necessary inventories/studies

to ensure protection of fish habitat, vegetation, water quality and cultural values.

The type of development that is intended for this area is a good quality access point with docking, launching, fish cleaning, garbage and washroom facilities. A car/RV campground, hiking trail, swimming area and interpretive signage/structures are other possible development options.

5 COMMERCIAL ACTIVITIES

The Gull Bay Enhanced Management Area is used for a number of commercial activities including mineral exploration, forestry, fur harvesting and bait fishing. These uses will be permitted to continue while ensuring that high quality recreation values and significant fish and wildlife habitat are protected.

5.1 MANAGEMENT DIRECTION

5.1.1 FOREST OPERATIONS

Bowater Canadian Forest Products Inc. is the current Sustainable Forest Licence holder for the Black Sturgeon Forest in which the Gull Bay Enhanced Management Area is located. Forest management practices in this EMA will be modified, in a manner that will ensure the maintenance or enhancement of recreation values in the EMA while ensuring that the long term delivered wood costs and volumes available for industrial use will not be negatively affected.

Forest access roads within the Gull Bay Enhanced Management Area will not be allowed except in exceptional circumstances where no other reasonable alternative exists. Forest access roads directly adjacent to the EMA will be planned for through the forest management planning process to ensure the maintenance of shoreline recreational values of the area such as skyline vistas and remoteness as well as the protection of important fish habitat in Lake Nipigon tributaries.

Forest management plans will contain Area of Concern documentation outlining prescriptions for identified values in the enhanced management area (e.g. bald eagles nests, mineral licks, caribou migration corridors, known cultural sites, groundwater recharge zones) within the context of the overall land use intent for this EMA. Limited forest operations within 300 metres of the Lake Nipigon shoreline will be carried out following consultation and detailed operational planning to maintain the overall recreation intent for this area, and to minimize the possibility of unplanned access to the lake.

5.1.2 MINERAL EXPLORATION

Mineral exploration and extraction is permitted in this area. The Ministry of Northern Development and Mines (MNDM), in conjunction with MNR, has developed *Guidelines for Exploration Practices in Enhanced Management Areas in Ontario* (2002). These Guidelines set out a code of “best practices” which prospectors will be encouraged to follow to ensure minimal impact on the environment, addressing activities such as road/trail building, working around water, camp operation and abandonment procedures. When work permits or other forms of approval are required for exploration activities, the best practice guidelines will be incorporated into the permit or approval document. An appropriate protocol will be developed to make certain that up-to-date values information is provided by MNR to MNDM and subsequently, to the prospectors working in the EMA so that they can conduct their activities without negatively impacting on known values. A copy of this Guideline is appended to the Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy.

5.1.3 AGGREGATE EXTRACTION

Aggregate extraction in the enhanced management area will be limited to the purposes of forest access road construction and maintenance and for mining exploration and development. Commercial aggregate

extraction is not permitted within the Gull Bay Enhanced Management Area.

5.1.4 BAIT FISHING

The degree of bait fishing currently occurring in the enhanced management area is not well known. There are 2 bait fish blocks that fall partially within the EMA (#’s 497891, 496891). Bait fishing will continue to be a permitted use. Any available vacant bait fish blocks will be allocated as per provincial bait fish policy.

5.1.5 FUR HARVESTING

Portions of trapline NG-21 fall within the enhanced management area. Trapping will continue to be a permitted use in the Gull Bay EMA.

5.1.6 HYDROELECTRIC DEVELOPMENT

No hydro development currently exists within this enhanced management area and no opportunity exists for future development.

5.1.7 OTHER COMMERCIAL ACTIVITIES

Peat extraction and other commercial activities having the potential to negatively affect the natural and cultural values of the EMA will not be permitted.

Commercial fishing does not occur within the EMA, but does occur offshore in Lake Nipigon waters where it is a permitted activity and economically important to Gull Bay First Nation members. No new commercial fishing is permitted.

Commercial activities that do not impact on the values within the EMA may be permitted (e.g., wild rice harvesting).

6 CROWN LAND RECREATION

Angling, hunting, Crown land camping, hiking, swimming and other recreational activities all occur within the Gull Bay Enhanced Management Area and form an integral part of the social and economic aspect of the surrounding communities.

6.1 MANAGEMENT DIRECTION

6.1.1 CROWN LAND RECREATION

Crown land recreation activities permitted in the Gull Bay EMA include Crown land camping, swimming, bird watching, photography, angling and hunting and recreational vehicle use (snowmobile, ATV).

6.1.2 HUNTING

Hunting will continue to be a permitted use in the enhanced management area. The entire EMA falls in Wildlife Management Unit 15B. No Bear Management Areas fall within the EMA. Moose are the principal big game animal in the area. Subsistence hunting also occurs in this area. Work with the Provincial Deer Committee will be initiated in an effort to open 15B to white-tailed deer hunting.

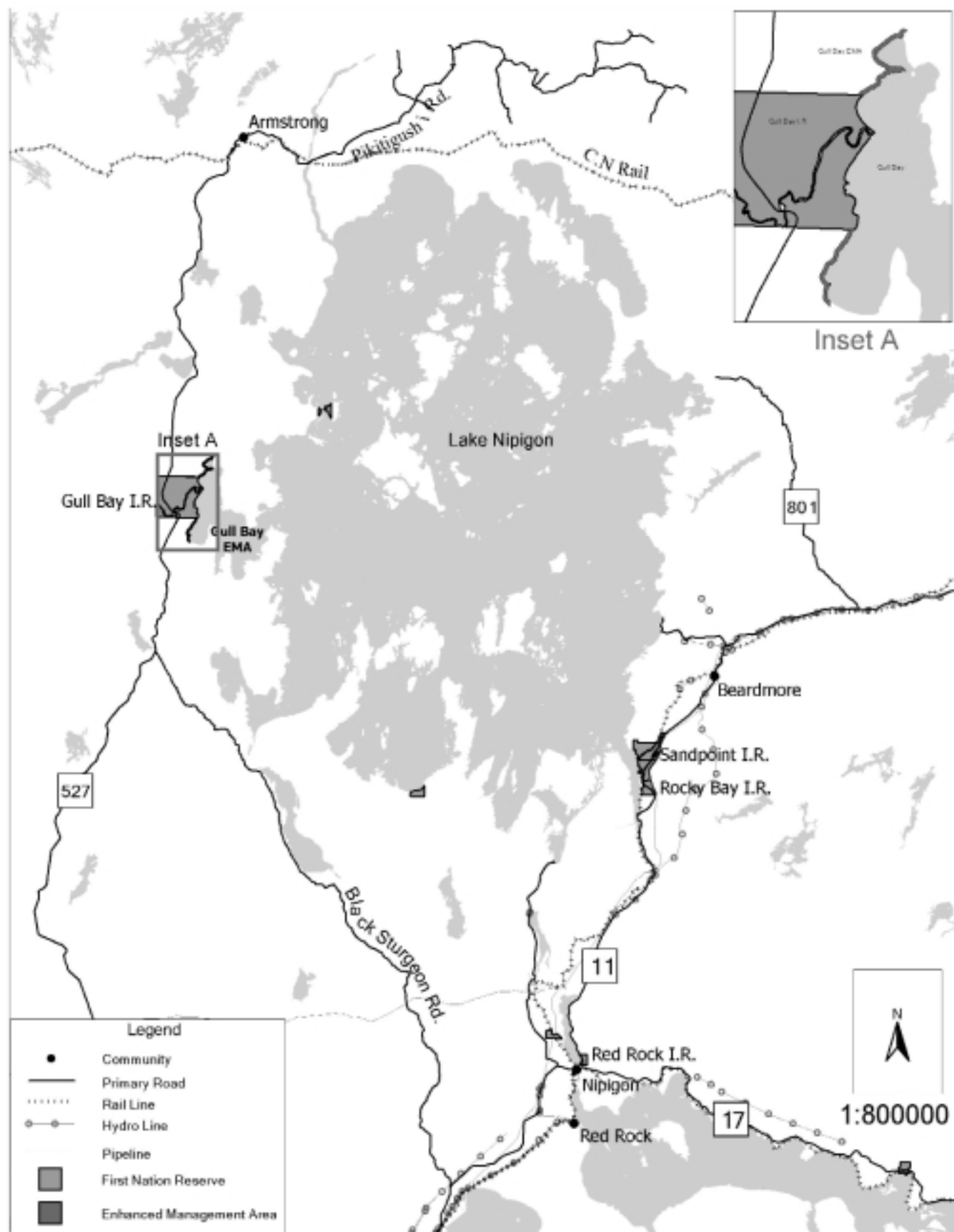
6.1.3 ANGLING

Angling is a permitted use within the Gull Bay EMA. The entire EMA falls within Fishing Division 21.

6.1.4 TRAILS

Trail development is consistent with the intent for this EMA

FIGURE 43: REGIONAL SETTING MAP FOR GULL BAY ENHANCED MANAGEMENT AREA



Data Source: MNR NRVIS Database
 Projection: Universal Transverse Mercator, Zone 16
 North American Datum, 1983
 Date: 06/03/02

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INSERT FIGURE 44

BOUNDARY MAP FOR GULL BAY ENHANCED MANAGEMENT AREA

INSERT FIGURE 45

RESOURCE MANAGEMENT MAP FOR GULL BAY ENHANCED MANAGEMENT AREA

FIGURE 44: BOUNDARY MAP FOR GULL BAY ENHANCED MANAGEMENT AREA

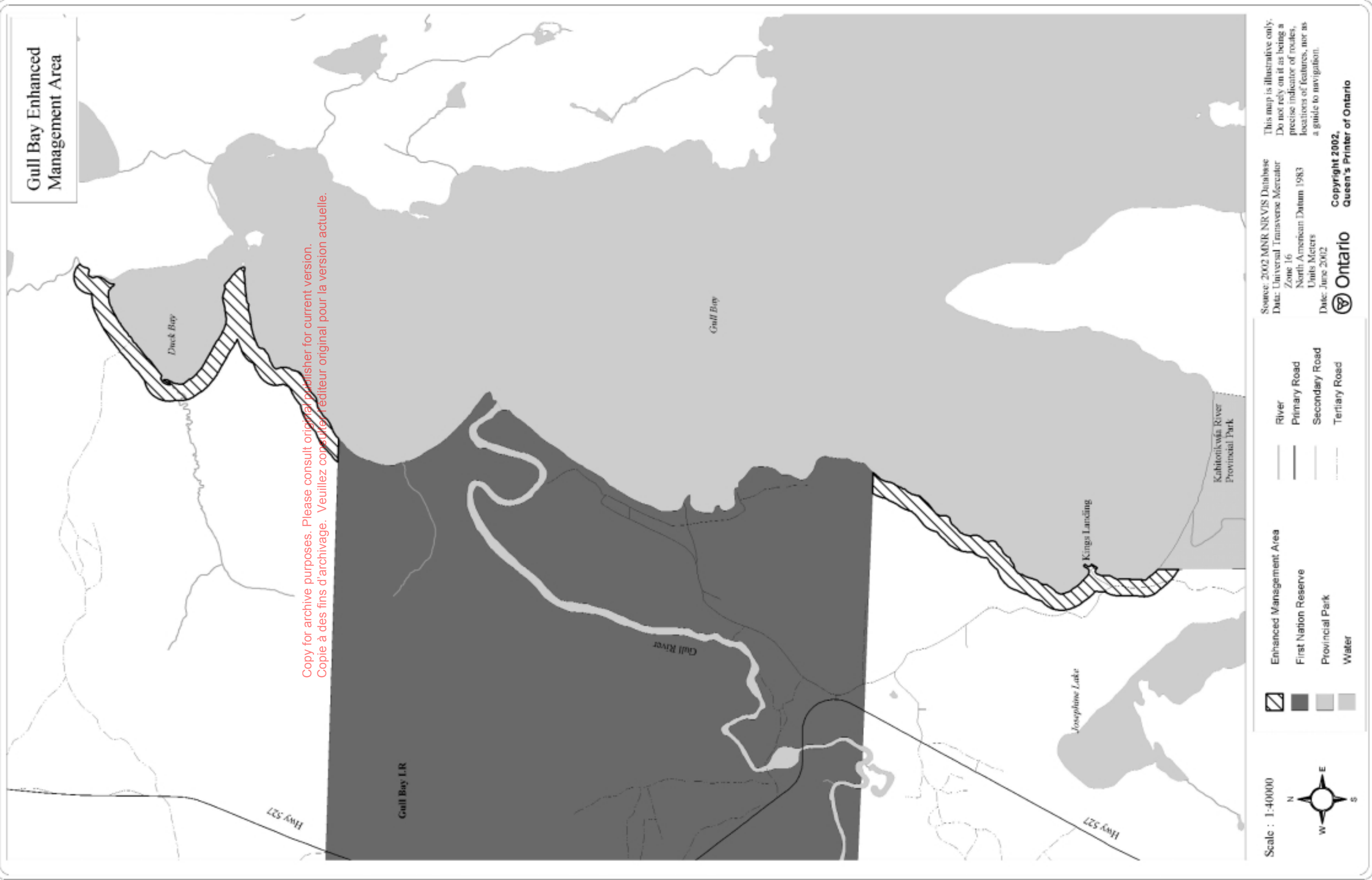
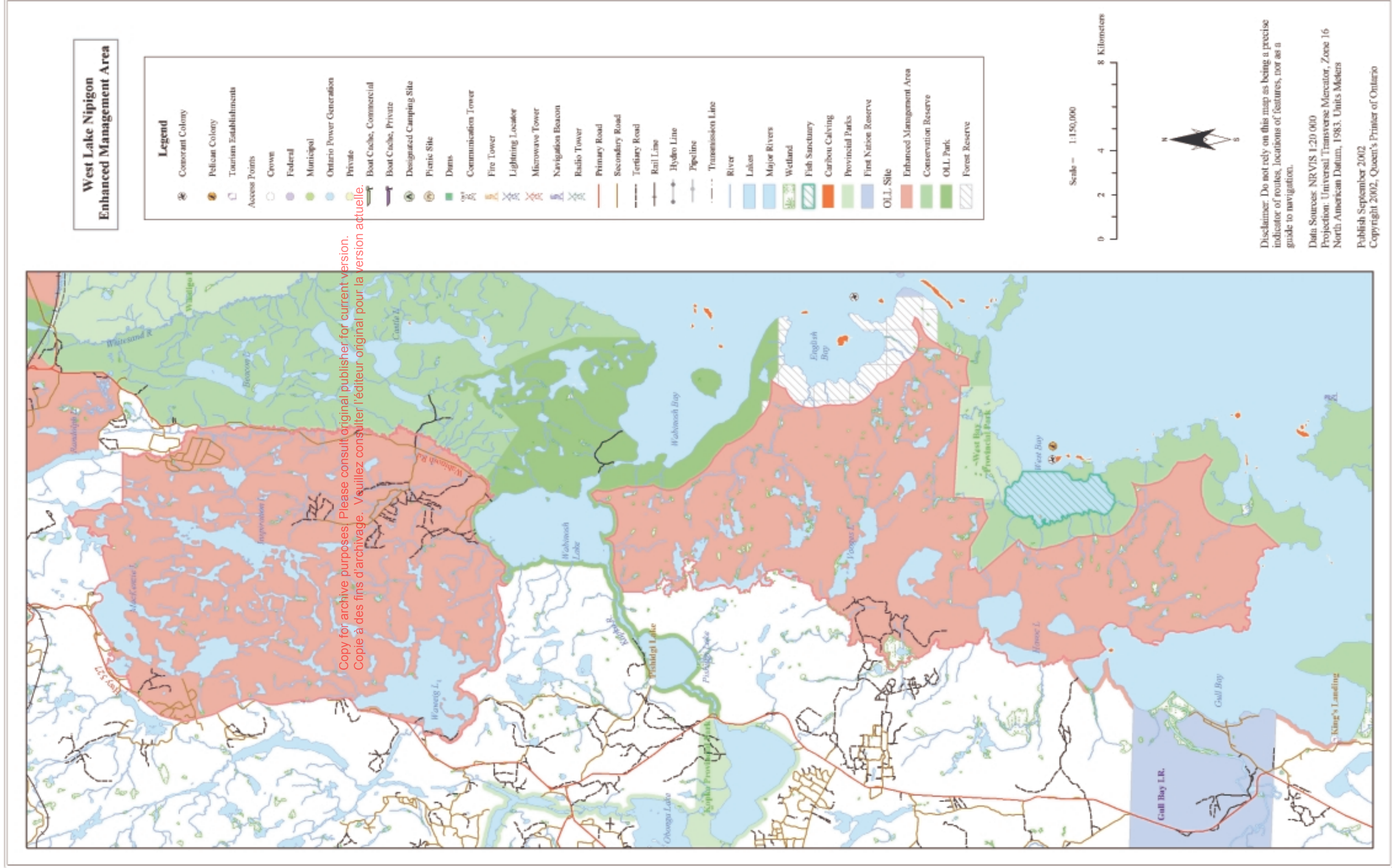


FIGURE 45: RESOURCE MANAGEMENT MAP FOR GULL BAY ENHANCED MANAGEMENT AREA



WEST LAKE NIPIGON ENHANCED MANAGEMENT AREA RESOURCE MANAGEMENT GUIDELINE

CHAPTER 11

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1 INTRODUCTION

The West Lake Nipigon Enhanced Management was established as a result of the *Lands for Life* and *Ontario's Living Legacy* land use planning processes. It is recognized in the *Ontario's Living Legacy Land Use Strategy* (1999) as part of the Lake Nipigon Basin Featured Area (also known as Signature Site), one of nine identified featured areas.

This enhanced management area (EMA) is one of seventeen Land Use Designations that form the Lake Nipigon Basin Signature Site. *Ontario's Living Legacy Land Use Strategy* recognizes this area as a poorly accessed and relatively undeveloped area having excellent potential for future eco-tourism and backcountry recreation.

The designation of enhanced management area allows for more detailed land use direction in areas with special features or values. The same activities that occur in general use areas can also occur in EMAs (i.e. forestry, mining, trapping, hunting, aggregate extraction), however these activities may be subject to special conditions that are designed to support the special values of the area.

The planning process and public consultation required for the development of this resource management guideline was an integral part of the overall development of the *Ecological Land Use and Resource Management Strategy for the Lake Nipigon Basin*. Detailed information relating to the process followed and the public input obtained can be found in Appendix A of the Strategy document.

2 DESCRIPTION

The West Lake Nipigon Enhanced Management Area (EMA) is a recreation category EMA. It is located just inland from the northwest shore of Lake Nipigon, adjacent to the Lake Nipigon Conservation Reserve and consists of two sections. The north section is directly south of Armstrong and incorporates the Waweig-MacKenzie-Machine Gun chain of lakes. The southern portion extends from the south shore of Wabinosh Lake to the north shore of Gull Bay (Figures 46 and 47).

The total land area of this EMA is 42,272.4 hectares.

The First Nation reserves of Gull Bay and Whitesand, located just south and north of the enhanced management area respectively, use these lands for traditional activities. The community of Armstrong is also located in close proximity to the EMA and local residents use the EMA for outdoor recreation activities.

Most of this enhanced management area is not well accessed and relatively undeveloped. There are cottage subdivisions on MacKenzie, Clearwater and Waweig lakes and three tourist establishments. There is a secondary forest access road (Wabinosh Road) which extends south from the Pikitigushi Road to Wabinosh Lake. A number of tertiary roads extend off of this secondary road. In the southern portion of the EMA, a secondary forest access road leads to the Vooges Lake area and another secondary road is planned in the Rae Lake area. There is no other access or development in the rest of the enhanced management area, resulting in its current pristine and remote attributes.

Mineral exploration on the west shore of Lake Nipigon has been very active over the past several years due to the present high price of Platinum Group Element (PGEs) metals and the potential of the Nipigon Plate assemblage as a source of these metals. Extensive claim staking has taken place on the west side of Lake Nipigon especially near English Bay, Gull Bay, Waweig Lake and throughout the southern portion of the West Lake Nipigon EMA.

Mixedwood forests form the dominant vegetation cover including trembling aspen, jack pine, white birch, white spruce and black spruce. The topography is extremely rugged consisting of cliffs, canyons, gorges and extensive talus slopes, which provide a diversity of habitats and vegetation cover. Wetlands are few, occurring as graminoid fens, low shrub fens and meadows within shallow bays along lakeshores.

Tributaries flowing through the EMA to Lake Nipigon provide important spawning and nursery areas for Lake Nipigon fish species as well as stream resident fish. These streams provide sport fishing opportunities within the EMA along with opportunities provided by the inland lakes (e.g., MacKenzie, Vooges, Waweig, Cry). Seven eagle and three osprey nests have been documented within the West Lake Nipigon Enhanced Management Area (Figure 48).

3 LAND USE DIRECTION

The primary intent for this area is to carry out forest management activities in a manner that will facilitate future eco-tourism activities and backcountry recreation. While development proposals will be considered, public access by vehicles will be limited within the EMA, in order to retain remote backcountry recreation opportunities.

The public will be permitted to access areas currently open to public access (e.g. Wabinosh Road, Vooges Road). To protect wilderness values and promote backcountry recreation, new roads and road extensions will be closed to motorized access (including snowmobiles, ATVs, cars, trucks, motorcycles, etc.). Non-motorized travel, such as travel on foot, mountain bike or horseback, will be permitted. Motorized access will be permitted by forest industry, government employees, and commercial users such as prospectors, bait fishers, trappers and tourist operators while they are conducting their commercial activities. First Nation people will be allowed motorized access to new roads within the EMA, until roads are abandoned, if the area is part of their traditional lands and they are accessing it for traditional pursuits. Prescriptions regarding specific public access control mechanisms and other operational prescriptions will be developed during the forest management planning process.

4 CROWN LAND DISPOSITION AND DEVELOPMENT

Within the West Lake Nipigon Enhanced Management Area alienated lands currently include 50 cottage lots on Mackenzie Lake, 27 on Waweig Lake and 20 on Clearwater Lake. There are numerous active mining claims throughout the EMA, especially in the vicinity of Waweig Lake, English Bay and along the western border north of Gull Bay. One tourist establishment on Waweig Lake and two on MacKenzie Lake are on private lands.

Land disposition is permitted in this enhanced management area. Disposition of Crown land will be governed by the overall land use direction for the Lake Nipigon Basin which identifies this EMA for eco-tourism and backcountry recreation.

Any future development will be approached carefully in order to avoid negatively impacting cultural, biological or recreational values. Site inspections, biological and cultural inventories and assessment of potential impacts will precede any future development. Known values information (Figure 48) will be updated as new information becomes available.

4.1 MANAGEMENT DIRECTION

4.1.1 TOURISM DEVELOPMENT

Future disposition for a remote eco-lodge or camp will be considered when accompanied by a strong business plan. A location off the Wabinosh Road is an option. The intent is to provide economic opportunities to local First Nations. Constraints include the rugged topography of the area and the fact that many of the lakes are lake trout lakes, which are sensitive to development and where development options are governed by the Provincial Lake Trout Policy. Tenure for this type of development would be granted under a land use permit or Crown lease.

A condition of disposition will be the requirement to develop a non-consumptive, ecologically focused tourism facility in keeping with land use direction for this EMA.

Crown land may be made available to Gull Bay First Nation for the development of a trail and lookout on the shoreline at the south end of the EMA amid the cliffs and spectacular scenery. This development would complement the access development in the Gull Bay EMA.

4.1.2 OTHER CROWN LAND DISPOSITION

Crown land disposition for new cottaging or rural residential development will not be permitted in the West Lake Nipigon Enhanced Management Area.

Other requests for Crown land disposition and development (e.g., trappers cabin) will be considered within the context of the overall land use intent for the Lake Nipigon Basin and the West Lake Nipigon EMA.

5 COMMERCIAL ACTIVITIES

The West Lake Nipigon Enhanced Management Area is used for a variety of commercial activities including forestry, mineral exploration, trapping, bait fishing and aggregate extraction. Management direction for this EMA will allow these uses to continue while ensuring that the high quality, backcountry recreation values and significant fish and wildlife habitat in this area are protected.

5.1 MANAGEMENT DIRECTION

5.1.1 FOREST OPERATIONS

The West Lake Nipigon Enhanced Management Area falls within two separate Forest Management Units, the Black Sturgeon Forest, and the Armstrong Forest, with Sustainable Forest Licences currently held by Bowater Canadian Forest Products Inc. and Norampac Inc., respectively. Forest management practices in this EMA will be modified in a manner that will facilitate future eco-tourism activity and backcountry recreation. These modifications will be implemented with no impact on wood supply and only in exceptional cases will wood cost be affected.

Access and forest management operations will be carefully planned to provide for eco-tourism activities and remote, backcountry recreation. Forestry operations will be carried out in a manner that minimizes the number of areas under active operation at any one time. This approach will entail the operation of a few, larger areas as opposed to many smaller ones during any one point in time.

With regard to access for forest management operations, the overall intent is to limit, within operational constraints, the number, duration and standard of roads built in the EMA, and to limit the number of accessible roadbeds remaining after operations are complete. Roads will be planned and constructed to the lowest standard possible (including but not necessarily winter roads only), taking into account economic and operational requirements. New permanent roads are not permitted. Roads will be abandoned through a variety of means when no longer required for forestry activities, in accordance with the use management strategy for each road. New roads for second chance harvest should be directed to existing roadbeds where possible, with road location and construction facilitating access controls and abandonment. Road abandonment will normally include removing all culverts and bridges from crossings and in most cases will require making the road impassable by ditching, scarifying or creating a berm.

Aggregate supplies may be extracted from gravel pits within the road right-of-way or within areas approved for allocations, where required for the construction and maintenance of forest access roads within the EMA. In the cases where sufficient aggregate supplies are not available, aggregate may be extracted outside of the road right-of-way or approved allocations through the standard permitting process currently in place. Any pits will be rehabilitated at the end of the period of use.

Forest management practices will be implemented to ensure the protection of important fish habitat in Lake Nipigon tributaries. Normally, temporary bridges will be used at stream crossings unless site

conditions do not allow this. A close liaison between the Ministry of Natural Resources biologist and Sustainable Forest Licence holder will be maintained when carrying out road planning and planning for construction and abandonment of water crossings. A joint site inspection will be required for any crossings requiring in-stream work or culvert installation unless it is mutually agreed that this is not required.

Forest management plans will contain Area of Concern documentation outlining prescriptions for identified values in the enhanced management area (e.g. bald eagle nests, mineral licks, caribou migration corridors, known cultural sites, groundwater recharge zones, remote recreation values) within the context of the overall land use intent for this EMA. Limited forest operations within 300 metres of the Lake Nipigon shoreline will be carried out following consultation and detailed operational planning to maintain the overall recreation intent for this area, and to minimize the possibility of unplanned access to the lake.

5.1.2 MINERAL EXPLORATION

Mineral exploration and extraction is permitted in this area. The Ministry of Northern Development and Mines (MNDM) in conjunction with MNR has developed *Guidelines for Exploration Practices in Enhanced Management Areas in Ontario* (2002). These Guidelines set out a code of “best practices” which prospectors will be encouraged to follow to ensure minimal impact on the environment, addressing road/trail building, working around water, camp operation and abandonment procedures. When work permits or other forms of approval are required for exploration activities, the best practice guidelines will be incorporated into the permit or approval document. An appropriate protocol will be developed to make certain that up-to-date values information is provided to MNDM by MNR and subsequently, to the prospectors working in the EMA so that they can conduct their activities without negatively impacting on known values. A copy of this Guideline is appended to the *Lake Nipigon Basin*

Signature Site Ecological Land Use and Resource Management Strategy.

5.1.3 AGGREGATE EXTRACTION

Aggregate extraction in this enhanced management area will be primarily for the purposes of forest access road construction and maintenance and for mining exploration and development.

Commercial aggregate operations are not permitted within 1 kilometre of the shoreline of Lake Nipigon. In the remainder of the enhanced management area, new commercial aggregate operations may be considered. Any applicant must clearly show that the aggregate operation will not conflict with existing or future tourism and recreation opportunities, or create undesirable impacts on fish and wildlife habitat.

5.1.4 BAIT FISHING

The degree of bait fishing currently occurring in the enhanced management area is not well known. There are 10 bait fish blocks that fall entirely or partly within the EMA (#’s 503891, 502891, 501981, 503884, 502884, 501884, 498891, 497891, 498884, 501884). Bait fishing will continue to be a permitted use. Any available vacant bait fish blocks will be allocated as per provincial bait fish policy.

5.1.5 FUR HARVESTING

Portions of traplines NG-35, NG-30, NG-29, NG-21, NG-48 and NG-49 fall within the enhanced management area. Trapping is a permitted use in enhanced management areas. Through education and communication, efforts will be made to ensure that trapping activities and current and future recreation activities do not conflict.

5.1.6 HYDROELECTRIC DEVELOPMENT

No hydroelectric development currently exists within this EMA. Any future possible hydroelectric generation opportunities will be considered in light of the overall land use direction for the Lake Nipigon Basin and the West Lake Nipigon Enhanced Management Area and with regard for tourism, recreation, cultural, wildlife and fisheries values.

5.1.7 OTHER COMMERCIAL ACTIVITIES

Peat extraction and other commercial activities having the potential to negatively affect the natural and cultural values of the EMA will not be permitted.

Commercial fishing does not occur within the EMA, but does occur offshore in the waters of Lake Nipigon where it is a permitted activity and economically important to Gull Bay and Rocky Bay First Nations and the communities of Macdiarmid and Beardmore. No new commercial fishing is permitted in the EMA.

Commercial activities that do not impact on the values within the EMA may be permitted (e.g., wild rice harvesting).

6 CROWN LAND RECREATION

Angling, hunting, canoeing, Crown land camping, hiking, swimming, and other recreational activities all occur within the West Lake Nipigon Enhanced Management Area.

6.1 MANAGEMENT DIRECTION

6.1.1 CROWN LAND RECREATION

Non-consumptive backcountry recreation activities such as canoeing, wilderness camping, nature appreciation, mountain biking and hiking will be encouraged. Crown land camping can occur for 21 days. Green zones will not be considered until there are adequate facilities to accommodate non-residents.

6.1.2 HUNTING

Hunting will continue to be a permitted use in the enhanced management area. The entire EMA falls in Wildlife Management Unit 15B. Five Bear Management Areas (licence # TB-15B-050, TB-15B-007, TB-16C-024, TB-15B-006, TB-15A-047) also fall partially within the EMA. Moose are the principal big game animal in the area. Subsistence hunting also occurs in this area. Work with the Provincial Deer Committee will be initiated in an effort to open 15B to white-tailed deer hunting.

6.1.3 ANGLING

Angling is a permitted use within the West Lake Nipigon EMA. The entire EMA is in Management Division 21, however, some Division 34 regulations apply in the tributaries up to the first barrier to migration (i.e. northern pike season opens the third Saturday in May and walleye and sauger open June 10).

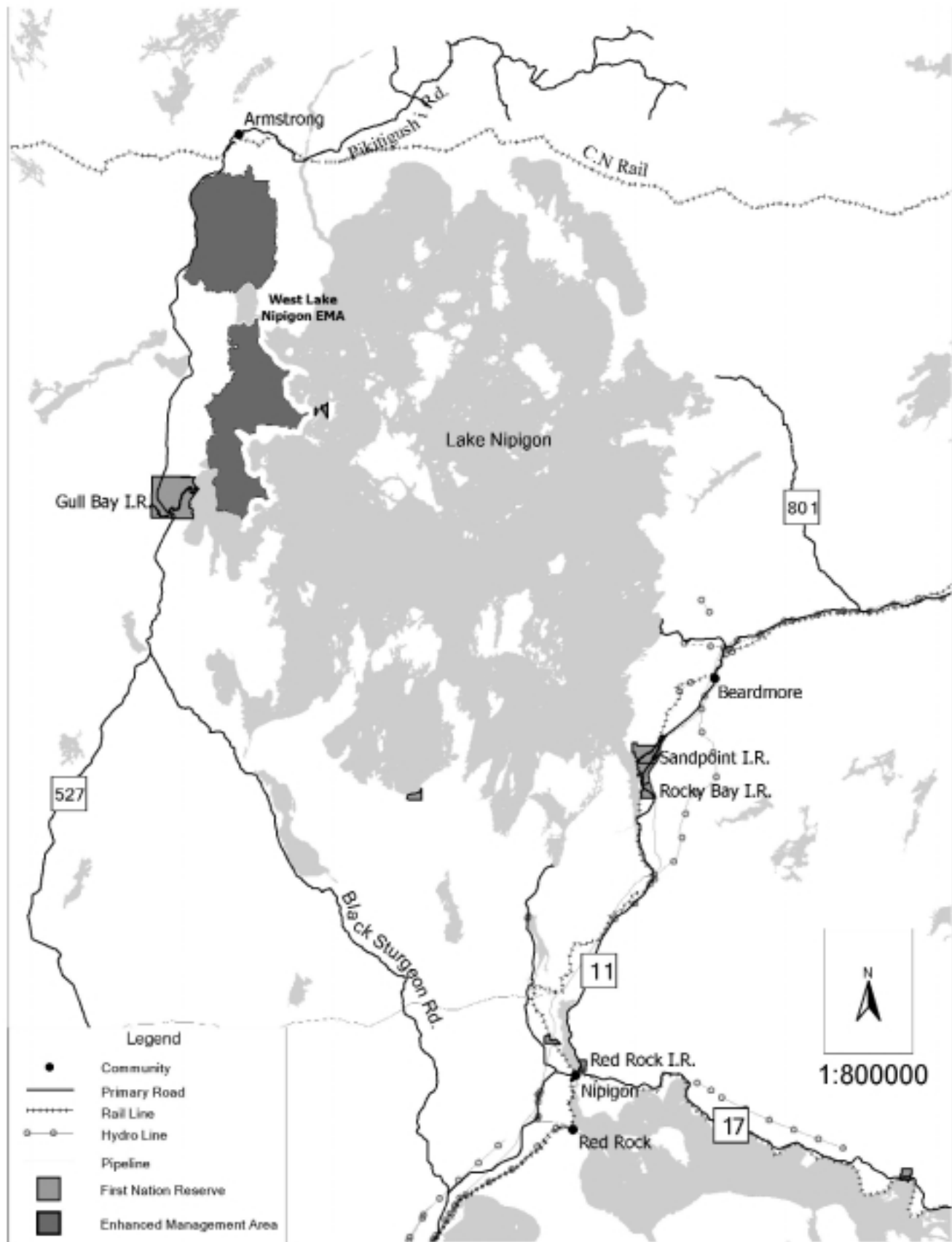
To provide additional angling opportunities, accessible lakes within the EMA will be assessed for their suitability for stocking. Stocking suitability will be determined using criteria described in the Provincial Stocking Policy Guidelines. Stocking of Chimney Lake will continue. Stocking of Mountain Lake will be considered.

6.1.4 CANOE ROUTES AND TRAILS

Opportunities for developing good quality canoe routes, portages, remote campsites and trails will be promoted and encouraged through partnerships or as tourism ventures. This could include developing/improving campsites, portages and providing fire rings and box privies. There are a number of interconnecting lakes in the northern half of the enhanced management area that could potentially be developed as a canoe route. Further investigation is required. The potential route is circular and includes Waweig, MacKenzie and Machine Gun lakes. Portions of the enhanced management area contain cliffs and canyons which offer the opportunity for the establishment of lookouts. Canoe route opportunities could be promoted through cruiser boat operations or tourism operations out of Armstrong.

A trail development opportunity may exist at the southernmost boundary of the EMA along the northeast shore of Gull Bay. This area is very scenic and offers the opportunity to develop a hiking trail to the top of the escarpment. Field surveys would be required to ensure that any trail development would not negatively affect values such as rare vegetation or cultural sites. This opportunity may be of interest to Gull Bay First Nation, and could be tied in with other possible, future tourism/access development in the Gull Bay Enhanced Management Area.

FIGURE 46: REGIONAL SETTING MAP FOR WEST LAKE NIPIGON ENHANCED MANAGEMENT AREA



Data Source: MNR NRVIS Database
 Projection: Universal Transverse Mercator, Zone 16
 North American Datum, 1983
 Date: 06/03/02

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INSERT FIGURE 47
BOUNDARY MAP FOR WEST LAKE NIPIGON ENHANCED MANAGEMENT AREA

INSERT FIGURE 48
RESOURCE MANAGEMENT MAP FOR WEST LAKE NIPIGON ENHANCED MANAGEMENT AREA

FIGURE 47: BOUNDARY MAP FOR WEST LAKE NIPIGON ENHANCED MANAGEMENT AREA

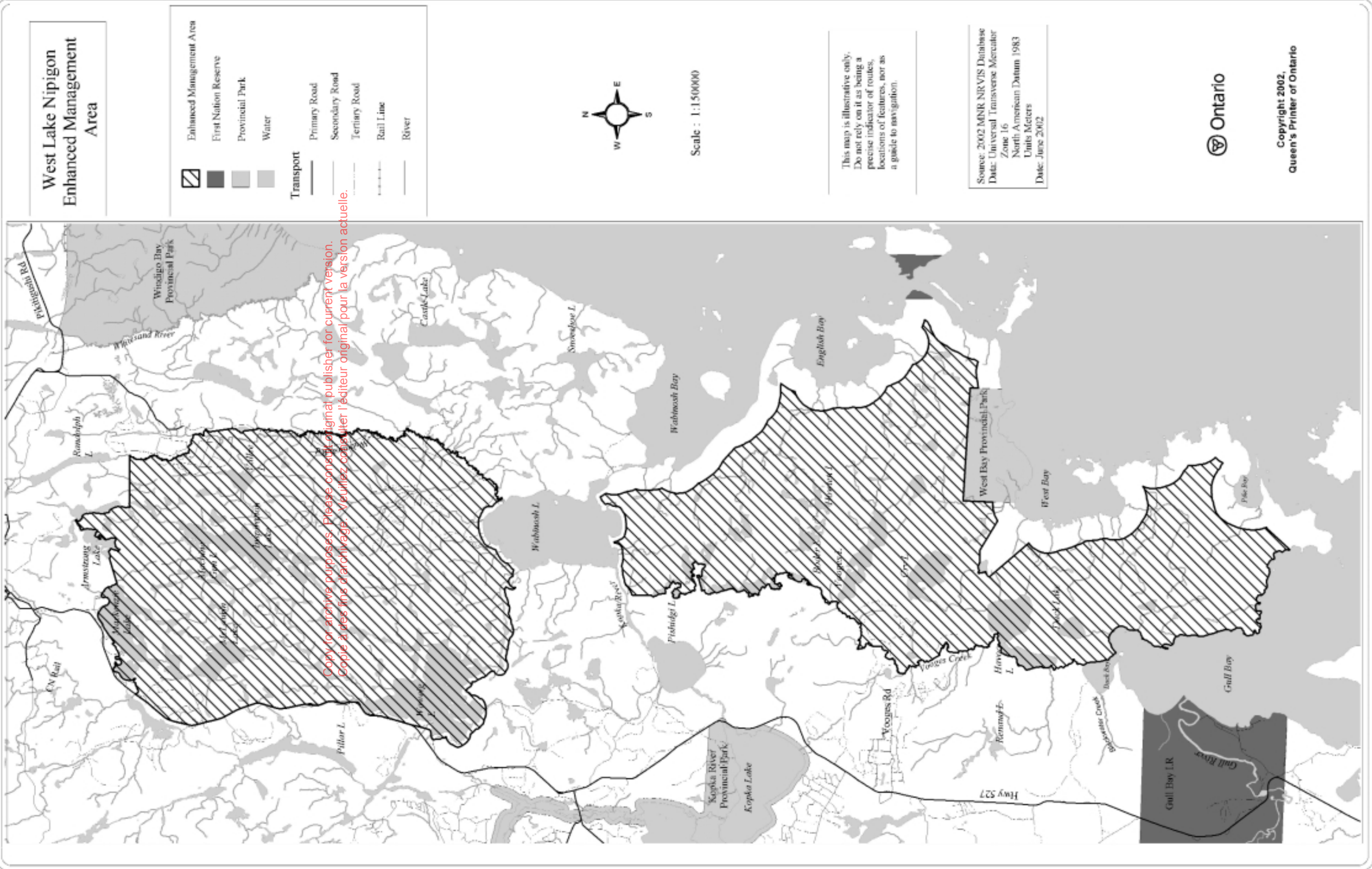
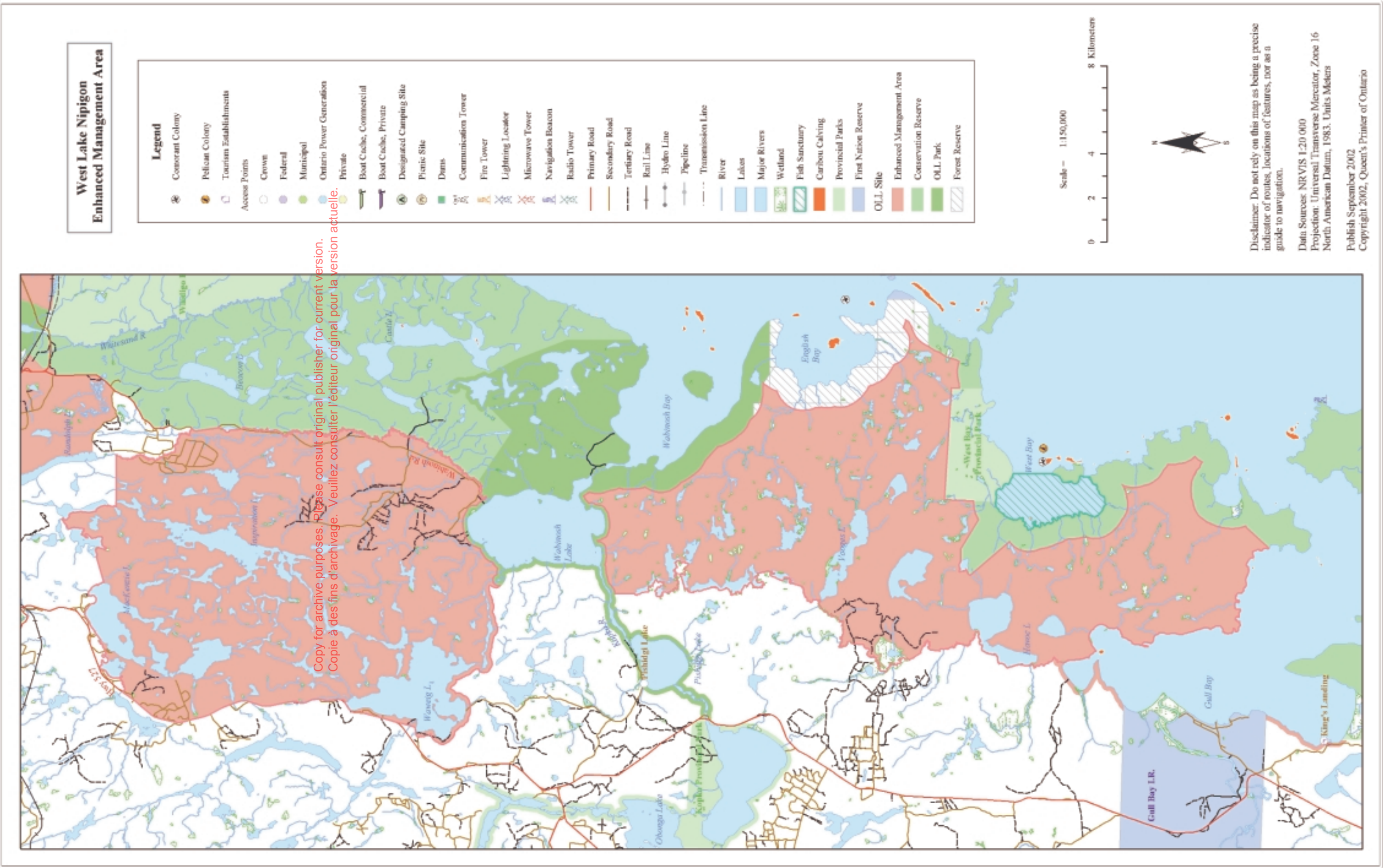


FIGURE 48: RESOURCE MANAGEMENT MAP FOR WEST LAKE NIPIGON ENHANCED MANAGEMENT AREA



PIKITIGUSHI ENHANCED MANAGEMENT AREA RESOURCE MANAGEMENT GUIDELINE

CHAPTER 12

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1 INTRODUCTION

The Pikitigushi Enhanced Management was established as a result of the *Lands for Life* and *Ontario's Living Legacy* land use planning processes. It is recognized in the *Ontario's Living Legacy Land Use Strategy* (1999) as part of the Lake Nipigon Basin Featured Area (also known as Signature Site), one of nine identified featured areas.

This enhanced management area (EMA) is one of seventeen Land Use Designations that form the Lake Nipigon Basin Signature Site. *Ontario's Living Legacy Land Use Strategy* recognizes this area as providing significant woodland caribou habitat as well as ensuring a landscape linkage between Wabakimi Park and Lake Nipigon.

The designation of enhanced management area allows for more detailed land use direction in areas with special features or values. The same activities that occur in general use areas can also occur in EMAs (i.e. forestry, mining, trapping, hunting, aggregate extraction), however these activities may be subject to special conditions that are designed to support the special values of the area.

The planning process and public consultation required for the development of this resource management guideline was an integral part of the overall development of the *Ecological Land Use and Resource Management Strategy for the Lake Nipigon Basin*. Detailed information relating to the process followed and the public input obtained can be found in Appendix A of the Strategy document.

2 DESCRIPTION

The Pikitigushi Enhanced Management Area is a fish and wildlife category EMA. It is located north and northwest of Lake Nipigon and is 36,062.5 hectares in size (Figure 49 and 50). The EMA includes several areas of critical winter habitat for forest-dwelling woodland caribou, and along with the recommended Whitesand River Park, contributes to an important travel route for caribou between Lake Nipigon and Wabakimi Provincial Park.

Forest-dwelling Woodland caribou are a threatened species in Ontario. The Lake Nipigon caribou are one of the most southerly herds in Ontario, and are considered to be a vital link between the populations along the shore of Lake Superior and the current zone of continuous occupied caribou range.

The animals travel from the islands on Lake Nipigon after summer calving, and move north to their wintering habitat. The Pikitigushi EMA, in conjunction with the provincial parks and conservation reserves along the north portion of Lake Nipigon provide both winter habitat as well as cover habitat to facilitate movement to more distant winter habitat blocks. If the winter habitat on the mainland disappears or if that connectivity function is severed, the entire Lake Nipigon population will be placed in jeopardy. In addition, this strategically valuable population needs to be connected to other animals in the areas to the north, east, west and south of the basin, to ensure reproductive linkages with the remainder of the caribou metapopulation are maintained.

While the general location of the Pikitigushi EMA as displayed in the OLL Land Use Strategy is correct, it does not adequately encompass the most critical elements of the caribou's winter habitat or travel routes. As a result, the boundary has been modified significantly to capture the essential portions of winter habitat that is needed to meet the intent of the EMA. Specifically, the modified boundary of the EMA now better represents the:

- known winter habitat tracts
- known travel corridors; and through silviculture and roads management will become available in the future

3 LAND USE DIRECTION

Land uses in the Pikitigushi Enhanced Management Area will be governed on the basis of their compatibility with the intent to conserve and manage for the sustainability of the caribou winter habitat within the EMA.

Given that this is a fish and wildlife category EMA, the primary objective of retaining and enhancing the woodland caribou winter habitat must not be compromised. For example, critical habitat tracts that exist on sand flats, sand dune complexes and other landforms that are naturally conducive to retaining the appropriate vegetation composition and structure for caribou must be managed with extreme care (Figure 51).

Forestry operations will be guided by the *Forest Management Guidelines for the Conservation of Woodland Caribou: A Landscape Approach*. In order to reduce impacts through predation and human-made disturbances, new permanent road access within the EMA should be avoided. Secondary and tertiary roads must be made impassable and be rehabilitated when no longer required.

This area may also be subject to future research and recovery strategies for caribou as warranted.

4 CROWN LAND DISPOSITION AND DEVELOPMENT

Alienated lands within the Pikitigushi Enhanced Management Area are limited to the Armstrong airport area and some lands near the community of Armstrong. No further development, sale or lease of Crown lands will be permitted in the EMA, except under the *Mining Act* or where required to address health and safety requirements associated with existing development.

4.1 MANAGEMENT DIRECTION:

4.1.1 TOURISM

Tourism development (e.g., sale, lease) will not be permitted and tourism activities will not be promoted in the area, especially during the winter season.

4.1.2 COTTAGING

No cottage development will be permitted on Crown land in the EMA.

4.1.3 COMMUNITY DEVELOPMENT

Necessary infrastructure development, (e.g. for communities of Armstrong and Whitesand or the CNR) may be permitted in the EMA, where no other alternatives exist.

5.0 COMMERCIAL ACTIVITIES

A number of commercial activities are permitted within the Pikitigushi Enhanced Management Area, including mineral exploration, forestry, fur harvesting, bait fishing and aggregate extraction. There is no potential for hydroelectric power generation development. These uses are permitted to continue while ensuring that the significant caribou habitat in this area is protected.

5.1 MANAGEMENT DIRECTION

5.1.1 FOREST OPERATIONS

Domtar Inc. is the current Sustainable Forest Licence holder for the Armstrong Forest in which the Pikitigushi Enhanced Management Area is located. Forest management practices in this EMA will be modified in a manner that will ensure the maintenance of important woodland caribou wintering habitat in the EMA. These modifications will be implemented with no impact on wood supply and only in exceptional cases will wood cost be affected.

Forestry activities will be planned to protect caribou habitat and enhance travel routes from the Lake Nipigon calving grounds to critical winter habitat within the EMA. This will generally be accomplished through adherence to the *Forest Management Guidelines for the Conservation of Woodland Caribou: A Landscape Approach*, as forest management plans are prepared for the area.

With regard to access for forest management operations, the overall intent is to limit, within operational constraints, the number, duration and standard of roads built in the EMA, and to limit the number of accessible roadbeds remaining after operations are complete in order to minimize impacts on

woodland caribou. Roads will be planned and constructed to the lowest standard possible (including but not necessarily winter roads only), taking into account economic and operational requirements. New permanent roads will only be permitted where no other reasonable alternative exists. Secondary and tertiary roads will be made impassable when no longer required for forestry activities, in accordance with the use management strategy for each road. Road abandonment will normally include removing all culverts and bridges from crossings and in most cases will require making the road impassable by ditching, scarifying or creating a berm. In areas of the most critical caribou habitat within the EMA, rehabilitation of roadbeds may be required. New roads for second chance harvest should be directed to existing roadbeds where possible, with road location and construction facilitating access controls and abandonment.

Forest management practices will be implemented to ensure the protection of important fish habitat in Lake Nipigon tributaries. Normally, temporary bridges will be used at stream crossings unless site conditions do not allow this. A close liaison between the Ministry of Natural Resources biologist and Sustainable Forest Licence holder will be maintained when carrying out road planning and planning for construction and abandonment of water crossings. A joint site inspection will be required for any crossings requiring in-stream work or culvert installation unless it is mutually agreed that this is not required.

It will be critical to ensure that the planning and management of existing and future forest access in the EMA takes into account potential long-term impacts on caribou populations. To this end, forest management planning teams should ensure that road management strategies consider the following as forest management plans are developed:

- The location and management of permanent access required for forestry and transportation, and its potential effects on caribou populations;

- Areas of special caribou habitat (i.e. critical winter habitat) where access should be limited; and
- The identification of existing and future roads that will be physically removed, rehabilitated or allowed to naturally deteriorate in relation to caribou habitat concerns.

Forest management activities and prescriptions will consider landscape and ecological linkages, habitat requirements for caribou and in particular the need to maintain a linked network, spatially and temporally, of mature forest tracts between Lake Nipigon and Wabakimi Park.

Aggregate supplies may be extracted from pits within the road right-of-way or within areas approved for allocations, where required for the construction and maintenance of forest access roads within the EMA. In the cases where sufficient aggregate supplies are not available, aggregate may be extracted outside of the road right-of-way or approved allocations through the standard permitting process currently in place. All pits will be rehabilitated at the end of the period of use.

5.1.2 MINERAL EXPLORATION

Mineral exploration and extraction is permitted in this EMA. The Ministry of Northern Development and Mines (MNDM) in conjunction with MNR has developed *Guidelines for Exploration Practices in Enhanced Management Areas in Ontario* (2002). These Guidelines set out a code of “best practices” which prospectors will be encouraged to follow to ensure minimal impact on the environment, addressing road/trail building, working around water, camp operation and abandonment procedures. When work permits or other forms of approval are required for exploration activities, the best practice guidelines will be incorporated into the permit or approval document. An appropriate protocol will be developed to make certain that up-to-date values information is provided to MNDM by MNR and subsequently, to the prospectors working in the EMA so that they can conduct

their activities without negatively impacting on known values. A copy of this Guideline is appended to the *Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy*.

5.1.3 AGGREGATE EXTRACTION

Aggregate extraction in this enhanced management area will be restricted to the construction of forest access roads and for mining exploration and development.

Commercial aggregate operations are not permitted.

5.1.4 BAIT FISHING

There are two bait fish blocks that fall entirely or partly within the EMA. Bait fishing will continue to be a permitted use.

5.1.5 FUR HARVESTING

A portion of trapline NG-21 falls within the enhanced management area. Trapping is a permitted use in enhanced management areas. Through education and communication, efforts will be made to ensure that trapping activities and current and future recreation activities do not conflict. Trapping cabins are a permitted use associated with fur harvesting; trappers will be encouraged to locate their cabins outside of the EMA.

5.1.6 OTHER COMMERCIAL ACTIVITIES

Other commercial activities having the potential to affect the habitat values of the EMA will not be permitted (e.g., peat extraction, new Hydroelectric Development, etc). Commercial fishing does not occur within the EMA. Commercial activities that do not impact on the values within the EMA may be permitted (e.g., wild rice harvesting).

6.0 CROWN LAND RECREATION

Angling, hunting and camping are the primary recreational activities that take place in the Pikitigushi Enhanced Management Area and form an integral part of the social and economic aspect of the surrounding communities.

6.1 MANAGEMENT DIRECTION

6.1.1 CROWN LAND RECREATION

Crown land recreation activities such as angling, camping, hunting and berry picking all occur in the enhanced management area and will continue to be permitted.

6.1.2 HUNTING

Hunting will continue to be a permitted use in the enhanced management area. The EMA falls within Wildlife Management Units 15B and 16C. Moose are the principal big game animal in the area. Subsistence hunting also occurs in this area.

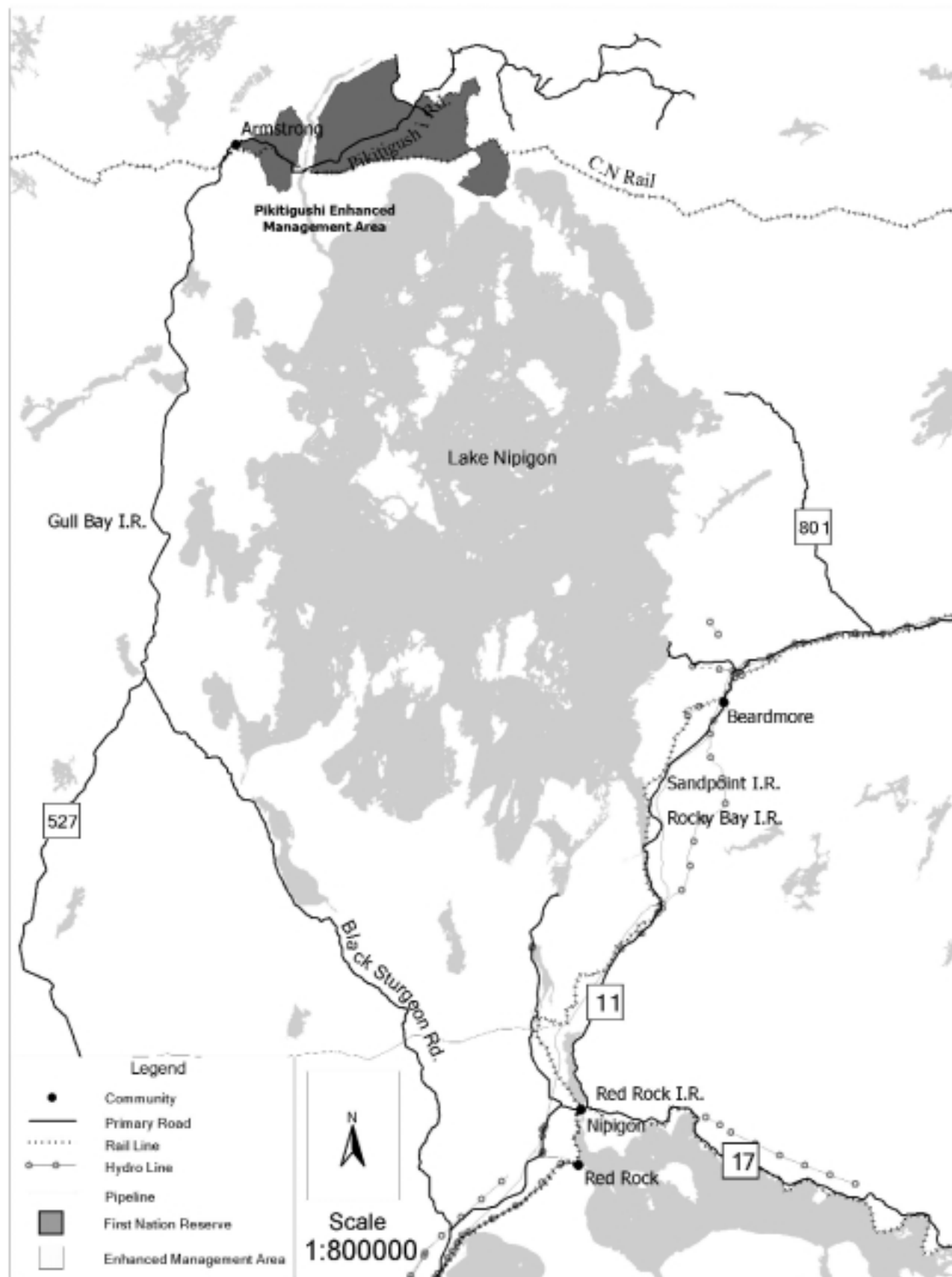
6.1.3 ANGLING

Angling is a permitted use within the Pikitigushi EMA. The entire EMA is in Fishing Division 33 however, some Division 34 regulations apply in the tributaries up to the first barrier to migration (i.e. northern pike season opens the third Saturday in May and walleye and sauger open June 10).

6.1.4 TRAILS

Organized snowmachine and/or ATV trails will be discouraged in the EMA, due to their undesirable impact on caribou wintering in the area. Trails that facilitate travel through the area where no reasonable alternatives exist may be permitted.

FIGURE 49: REGIONAL SETTING MAP FOR PIKITIGUSHI ENHANCED MANAGEMENT AREA



Data Source: MNR NRVIS Database
 Projection: Universal Transverse Mercator, Zone 16
 North American Datum, 1983
 Date: 08/03/02

INSERT FIGURE 50
BOUNDARY MAP FOR PIKITIGUSHI ENHANCED MANAGEMENT AREA

INSERT FIGURE 51
RESOURCE MANAGEMENT MAP FOR PIKITIGUSHI ENHANCED MANAGEMENT AREA

FIGURE 50: BOUNDARY MAP FOR PIKITIGUSHI ENHANCED MANAGEMENT AREA

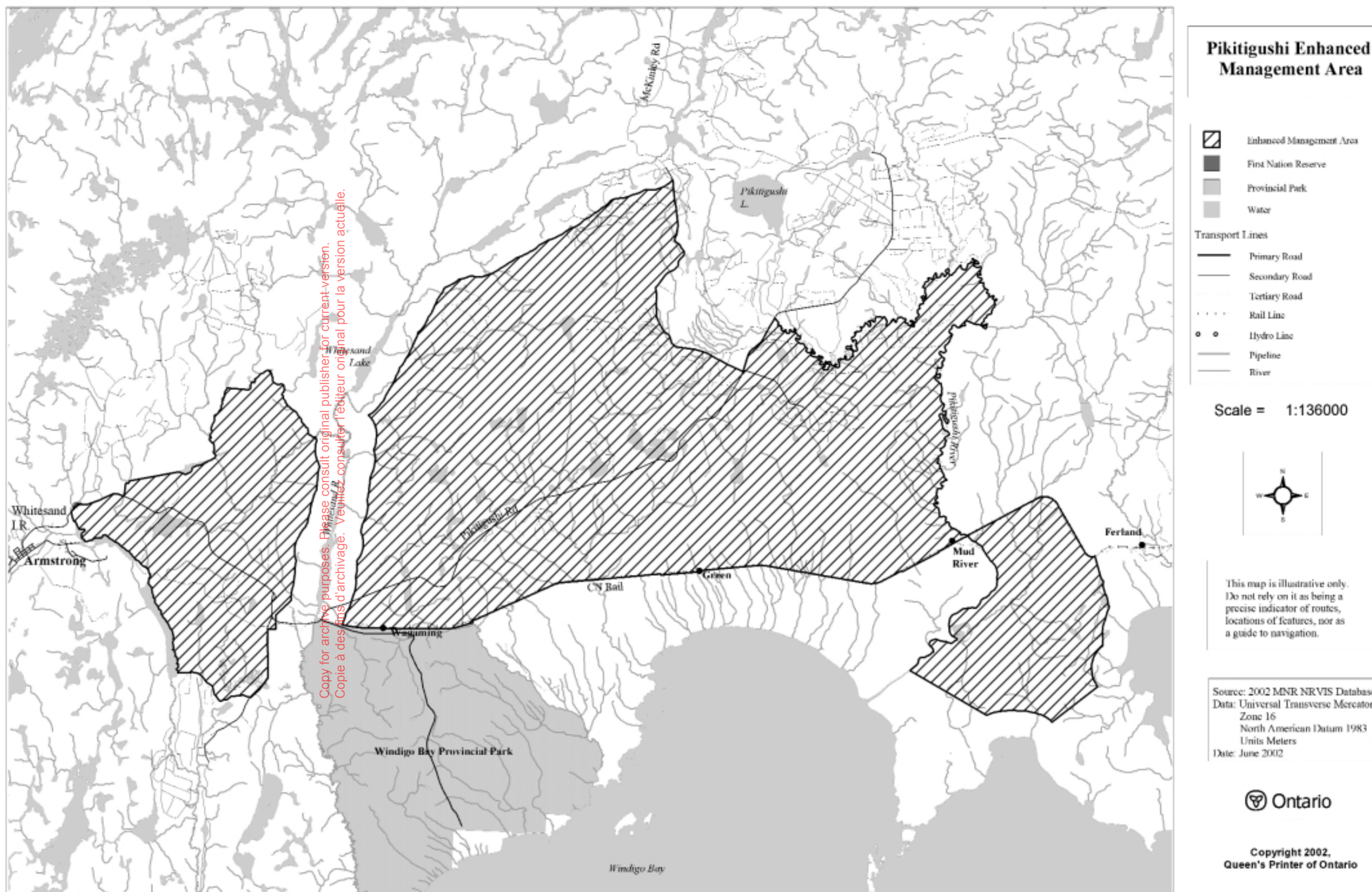
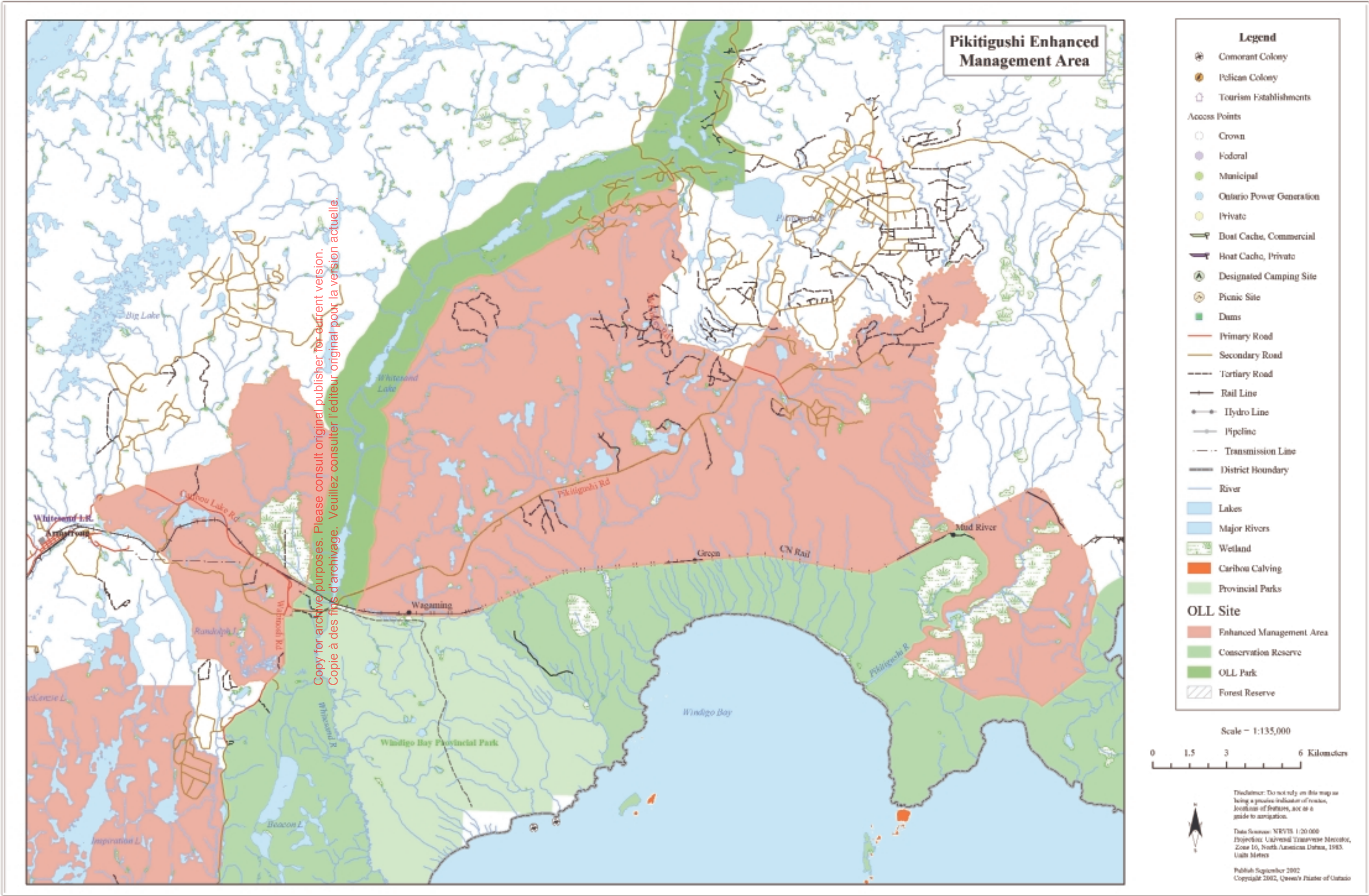


FIGURE 51: RESOURCE MANAGEMENT MAP FOR PIKITIGUSHI ENHANCED MANAGEMENT AREA



APPENDIX A TO E

APPENDIX A: PLANNING PROCESS OVERVIEW

PROJECT TEAM AND COMMITTEES

Initiation of the process to develop an *Ecological Land Use and Resource Management Strategy* for the Lake Nipigon Basin Signature Site resulted in the formation of a number of planning committees/teams. The role of these groups included such things as providing input and advice, researching and writing planning documents, meeting with interest groups, industry and local communities, and review and approval functions.

PROJECT TEAM

The Project Team consisted of government staff (MNR, MNDR) and representatives from the environmental sector, Advisory Committee and local First Nations. (Table 38) The Project Team provided a planning and support role, which involved a wide array of responsibilities. Some of these duties included gathering and analyzing background

information; managing the planning process; supporting the Lake Nipigon Watershed Advisory Committee; meeting and consulting with the public and stakeholders; overseeing contractors and consultants; developing planning options for review and consultation; and preparing the Ecological Land Use and Resource Management Strategy.

STEERING COMMITTEE

A steering committee was required to ensure linkages between planning and implementation activities and to ensure that recommendations generated within the project were consistent with OLL and the government vision for the Lake Nipigon Basin. The steering committee provided direction to the Project Team when required and reviewed all final documents/recommendations prior to approval. (Table 39)

LAKE NIPIGON BASIN ABORIGINAL ADVISORY COMMITTEE

The eight Aboriginal communities within the Basin have strong ties with Lake Nipigon in terms of cultural heritage, economic

TABLE 38: LAKE NIPIGON BASIN SIGNATURE SITE PROJECT TEAM

POSITION / REPRESENTATION	NAME / AFFILIATION
Project Leader	Bob Pinder, MNR, Nipigon
Communications	Dave Barker, MNR, Nipigon
Planner	Peggy Bluth, MNR, Nipigon
Biologist	Rob Swainson, MNR, Nipigon
Clerk	Tracy Laird, MNR, Nipigon
Ontario Living Legacy Intern	Elizabeth Francis, MNR, Nipigon
Resource Technician	Lisa Ruotsalainen, MNR, Nipigon
Park Planner	Steve Kuntz, MNR, Nipigon
Ontario Parks NW Zone, MNR	Michele Proulx, MNR, Thunder Bay
Thunder Bay District, MNR	Jim Cameron, MNR, Thunder Bay
Tourism	Paul Pepe, Ministry of Northern Development and Mines
Mining	Peter Hinz, Ministry of Northern Development and Mines
Nipigon Watershed Advisory Committee	Dan Taisey, Nipigon Watershed Advisory Committee
Environment	Julian Holenstein, Partnership for Public Lands
First Nation	Tom Borg, Red Rock First Nation

TABLE 39: LAKE NIPIGON BASIN SIGNATURE SITE STEERING COMMITTEE

NAME	POSITION
Charlie Lauer	Regional Director, Northwest Region
Ian Hagman	District Manager, Nipigon District
Bill Baker	District Manager, Thunder Bay District
Ron Waito	A/Manager, Northwest Region Planning Unit
Tim Sullivan	Northwest Zone Manager, Ontario Parks
Sergio Buonocorre	Ministry of Tourism
Colin Kelly	Ministry of Northern Development and Mines
John Mason	Ministry of Northern Development and Mines

investment and benefits, traditional activities, spiritual values and resource/tourism development opportunities. In recognition of these ties and the importance of protecting the Aboriginal culture and providing potential economic opportunities to the local native communities, the Project Team identified the need to develop an Aboriginal Advisory Committee to facilitate native input. The hope was to achieve agreement amongst the eight communities with regard to the Basin and the management direction that should be taken.

In the fall of 2000, two meetings were organized by the Project Team that were attended by some of the First Nations and Aboriginal groups. While these initial meetings were generally positive in nature, a Terms of Reference could not be agreed upon among the First Nations. As a result, the Aboriginal Advisory Committee was never created.

In the absence of a committee, the Project Team has provided a number of opportunities for First Nations and their members to participate in the development of the Strategy. In addition to the normal public information centers held across the area, Project Team staff have met individually with various Chiefs and individuals, provided materials and presentations to Band Council meetings and held information centres in and close to First Nations communities. This effort has helped to build awareness of the Lake Nipigon

project, and has resulted in sharing of information and views about the Basin.

NIPIGON WATERSHED ADVISORY COMMITTEE

The Nipigon Watershed Advisory Committee is involved in keeping the *Lake Nipigon Integrated Resource Management Plan* up to date and providing the Nipigon District Manager with advice regarding the management of Lake Nipigon and its watershed. The committee is active and meets monthly at the Nipigon District MNR office. (Table 40)

The existing committee membership was determined to be sufficient to meet the consultation and advisory needs of the Nipigon Signature Site initiative (Table 40). Responsibilities included consulting with the public and Lake Nipigon stakeholders, reviewing background information, evaluating various planning proposals and making recommendations back to the Lake Nipigon Basin Project Team. The committee provided a representative to sit as a member on the Planning Team, attend team meetings and open houses, and act as a link between the Basin initiative and the Advisory Committee.

PLANNING METHOD AND SCHEDULE

The *Lake Nipigon Basin Ecological Land Use and Resource Management Strategy* was developed over a two-year period starting in August of 2000.

TABLE 40: NIPIGON WATERSHED ADVISORY COMMITTEE MEMBERSHIP

MEMBERS / INVITED MEMBERS	REPRESENTATIVE
Chairman	Dave Nuttal
East Lake Nipigon Cottager's Association	Eric Rutherford
Lake Nipigon Tourist Outfitters	Art Jalkanen
Lake Nipigon Cruiser Operators	Tim Carroll
Ontario Power Generation	Brian Parceis
Red Rock Fish and Game Club	Pat McGuire
Forest Industry - Domtar	Rob Booth
Environmental Resource Group	Betty Brill
Lake Nipigon Metis Nation Commercial Fisherman's Association	Gerald Adams
South Bay Angler's Association	Henry Hogarrd / John Furtado
Lakes of Legends Tourism Association	Gord Brinkman
Lake Nipigon Charter Boat Association	Dan Taisey
Township of Nipigon	Ed Belanger
Township of Red Rock	Monty Kerr
Polly Lake Local Roads Board	John Chase
Gull Bay First Nation	Tony King
Biinjitwaabik Zaaging Anishinaabek	Harold Michon
Red Rock First Nation	Tom Borg
Sand Point	Paul Gladu
Whitesand First Nation	
Lake Nipigon Ojibway First Nation	Theresa Fowler
Poplar Point	Wilfred King
Local MPP Representative	Roy Taisey
Land of the Nipigon Waterways Development Association	
Bowater Forest Products Division	Ted Nyman / Jim Cassan

PLANNING APPROACH

With the establishment of the Project Team in August 2000, the first step in the planning process was to develop the Terms of Reference for the project. This was followed by a four-month period of data collection and literature research. Consultants were hired to conduct life science studies of the Basin. In order to meet future consultation requirements, efforts were also directed at establishing a comprehensive mailing list of all known stakeholders and interested members of the public. During a fall 2000 meeting, the Nipigon Watershed Advisory Committee was called upon to review the

existing mapped values information for the Basin and provide any corrections or new information that they were aware of.

In January 2001, an Invitation to Participate was sent out to all individuals/organizations on the mailing list advising of the start up of the project and the opportunity to get involved. From January through May 2001, a series of background information documents were written addressing various aspects of the Basin such as fisheries, wildlife, tourism, mining, history, water resources, etc. In addition, a comprehensive background document highlighting all the background information collected over the previous fall

and winter entitled Lake Nipigon Basin Background Document was written and published.

In June 2001 a series of open houses were held allowing the public to view the background information and provide any comments or information to the Project Team.

During the summer of 2001, consultants were hired to provide life science information for the Lake Nipigon Waters Conservation Reserve, and an earth science reconnaissance survey was conducted around the lake.

In addition, Project Team staff conducted fieldwork to obtain more information on caribou distribution, small mammal occurrences, bird species present and access point use and condition.

In September a facilitated Stakeholders Workshop was held to further define issues and objectives and brainstorm management ideas. Through the fall of 2001 preliminary management options were developed.

The Lake Nipigon Basin Signature Site Management Options Document was released to the public for comment via a series of open houses in December 2001.

Public input from the December open houses was analyzed and considered in conjunction with background information, Ontario's Living Legacy direction, government policy and provincial legislation, to select and refine the preferred management alternatives that appear in this Strategy. Once public input has been received on this draft document, a final Ecological Land Use and Resource Management Strategy will be written, approved and made available for public inspection in the fall of 2002.

SCHEDULE

The production of the *Ecological Land Use and Resource Management Strategy for the Lake Nipigon Basin* followed a two-year planning process as outlined in Table 41.

The Project Team managed to meet all of the planning milestones on schedule.

PUBLIC CONSULTATION

Public consultation for the Strategy followed a fairly standard process based on Provincial Park planning policy requirements. An invitation to participate issued in January 2001 was followed by the publication of a Background Information report in June 2001. Information packages were distributed and open houses were held providing the public with the opportunity to comment.

A stakeholder meeting was held in September 2001 to generate ideas and input for the development of management options.

In December, the Management Options document was published and released to the public through another series of open houses. Numerous meetings were held throughout the planning period with groups like the Local Citizen Committees, the Watershed Advisory Committee, Aboriginal communities/groups, tourism groups. During the course of this process, all newsletters, the Background Information document, Management Options document and this Strategy have been made available to the public on *Ontario's Living Legacy* web page at <http://ontarioslivinglegacy.com/nipigon.html>. Public notices were also placed on the *Environmental Bill of Rights Electronic Registry*.

Public input was collected throughout the planning process via a variety of means and by a diversity of organizations, stakeholders and individuals (Table 39, 40 & 43). All input was documented, analyzed and summarized in a number of unpublished reports on file at the Ministry of Natural Resources, Nipigon District Office.

INVITATION TO PARTICIPATE

An "Invitation to Participate" was provided to a mail list of about 1800 names, including First Nations, interest groups and members of the public in January 2001. Each invitation package included a letter encouraging people to get involved and provide any related background information, issues, ideas, or concerns, and a newsletter that provided

TABLE 41: PROJECT SCHEDULE

MILESTONE	DATE
Project Start-up, Staffing, Terms of Reference	Aug. to Dec. 2000
Collection of Background Information	Aug. 2000 to Jan. 2001
Invitation to Participate	Jan. 2001
Analysis and Documentation of Background Information	Jan to May 2001
Public Review of Background Information and Objectives	June 2001
Facilitated Stakeholders Workshop	Sept. 2001
Preparation of Management Options	Sept. to Dec. 2001
Public Review of Strategy Options	Dec. 2001 to Mar. 2002
Preparation of Preliminary Strategy	Jan. to June 2002
Public Review of Preliminary Strategy	Sept. to Nov 2002
Preparation of Final Strategy	Nov. to Dec. 2002
Public Inspection of Final Approved Strategy	Winter 2003

additional information about the Signature Site and upcoming events. Advertisements were placed in the Geraldton, Nipigon, Terrace Bay-Schreiber and two Thunder Bay newspapers. An announcement by MNR's Minister, John Snobelen and media conference was held in Thunder Bay on January 22, 2001. A notice was also placed on the *Environmental Bill of Rights Environmental Registry*.

NEWSLETTERS

At each stage of public consultation, a full colour newsletter was released to the public entitled Nipigon Signature. The newsletters provided the public and interested stakeholders with some additional, interesting information about the Lake Nipigon Basin Signature Site. The first newsletter detailed the project goals and the special features of the Basin; the June 2001 newsletter highlighted species at risk in the Basin; the November 2001 newsletter provided a look at the prehistory and history of the study area.

OPEN HOUSES

Public open houses were held between June 25th and June 29th 2001 and December 10th and December 13th 2001 in Nipigon, Beardmore, Armstrong, and Thunder Bay.

An additional Management Options open house was held January 8, 2002 in Biinjitiwaabik, Zaaging Anishinaabek (Rocky Bay). Advertisements appeared in several local newspapers (Geraldton, Nipigon, Thunder Bay and Terrace Bay-Schreiber). Posters advertising the event were placed in strategic locations in the four towns and in Thunder Bay. Postcards with open house information were mailed out and placed in all post office boxes in Nipigon, Red Rock, Beardmore, and Armstrong approximately ten days before the event. At each open house, attendees were provided with an information folder, comment sheet and a copy of the published planning document (Background Document in June, Management Options Document in December). Displays, presenting a summary of the information in the documents were available for viewing. Project Team staff were at hand to answer any questions.

FACILITATED STAKEHOLDER WORKSHOP

Seventy-one interest groups were invited to send one representative to a facilitated stakeholder workshop, held on September 18th, 2001 in Nipigon. A total of 24 individuals attended representing the forestry and mining sectors, Ontario Power Generation, Aboriginal communities,

TABLE 42: QUANTITATIVE ANALYSIS OF PUBLIC CONSULTATION EFFORTS UP TO DRAFT STRATEGY STAGE

DISTRIBUTION OF DOCUMENTS		NUMBER DISTRIBUTED			
<i>A. Newsletters and Postcards Distribution</i>	<i>Newsletter 1</i>	<i>Newsletter 2</i>	<i>Newsletter 3</i>	<i>Newsletter 4</i>	
Distributed by Mail	1,789	3,203	3,787	2,053	
Distributed at Office/Other Location	2,671	2,671	2,333	1,838	
Distributed at Open House	689	689	452	207	
Total	5,184	6,598	6,572	4,098	
<i>B. Open House Attendance</i>	<i>June 2001</i>	<i>December 2001</i>	<i>September 2002</i>		
Nipigon	104	73	49		
Beardmore	39	43	28		
Armstrong	20	9	11		
Thunder Bay	88	122	119		
Biinjitiwaabik Zaaging Anishinaabek	N/A	35	N/A		
Total	251	282	207		
<i>C. Comment Sheet Distribution</i>	<i>June 2001</i>	<i>December 2001</i>	<i>September 2002</i>		
Distributed at Open House	237	400	207		
Distributed at Office/Other Location	20	178	15		
Distributed by Mail	0	0	0		
Total	257	578	222		
<i>D. Document Distribution</i>	<i>Background Document</i>	<i>Management Options Document</i>	<i>Preliminary Strategy Document</i>		
Distributed at Open House	300	445	200		
Sent by Mail	150	234	30		
Distributed at Office / Other Location	78	168	10		
Total	522	847	240		

recreational, tourism, conservation and cottaging, organizations, commercial fishing and trapping groups, angling and hunting organizations, and local municipalities and townships.

Group discussions focused on protection, development and access as they pertained to the various geographical components of the Basin. Comments made during the workshop were incorporated into a summary report. The summary report and a detailed list of participants can be viewed at the MNR's

Nipigon District Office.

MEDIA COVERAGE

Throughout the two year planning period there has been a fair amount of interest in the Nipigon Basin project by local media and in one instance, Toronto media (Table 44). Local newspaper, television and radio reporters have interviewed project staff about the initiative. This media attention has served to lift the profile of the project and allow more people to be aware of what is going on and to participate.

TABLE 43: TYPE OF INPUT BY REPRESENTATION CATEGORY UP TO STRATEGY STAGE

REPRESENTATION CATEGORY	TYPE OF INPUT								
	Letter	Email	Comment Form	Meeting	Visit to Office	Fax	Phone Call	Other Submission	Total
First Nation/Aboriginal	8	2	18	5	1	1	3	0	43
Environmental Groups	10	1	6	1	0	0	4	0	22
Members of Parliament	0	0	0	0	0	0	0	0	0
Mining Industry	3	0	1	0	0	2	1	0	7
Forest Industry	7	1	0	0	0	0	1	0	9
Anglers and Hunters	9	0	13	0	0	1	3	0	26
Government Agencies	0	2	3	0	0	0	0	0	5
Commercial Fish Industry	2	0	1	0	0	0	0	0	3
General Public	21	7	192	0	1	0	19	2	242
Tourist Industry Recreational Interest	10	7	4	2	0	0	3	0	26
Trapping Industry	0	0	3	0	0	0	0	0	3
Special Needs Interest Groups	3	0	2	0	0	0	0	1	6
Academia	1	0	2	0	0	0	0	0	3
Local Citizens Committee	4	0	8	0	0	1	0	0	12
Hydro-Electric Power Generation	2	0	0	0	0	0	0	0	2
Land Owners (Cottagers)	5	1	8	0	1	0	0	0	15
TOTAL	75	21	261	8	3	5	39	3	425

TABLE 44: MEDIA COVERAGE OF THE LAKE NIPIGON BASIN SIGNATURE SITE PLANNING INITIATIVE

MEDIA ORGANIZATION	DATE	SUBJECT OF RADIO / TELEVISION PROGRAM
Thunder Bay Chronicle Journal	Jan. 23/01 Jan. 27/01 Jun. 16/01 Sept. 24/01 Feb. 24/02 Mar. 15/02 Aug. 25/02 Sept. 5/02 Sept. 5/02	Lake Nipigon Living Legacy Nipigon's Magic Protected Nipigon at the Crossroads Public Chips in Ideas for Basin Project Nipigon Basin Plan Causes Concern Among Anglers Ice Climbing Needs A Place to Watch \$7M Project Has New Director Survey Yields Good News to Prospectors Basin Plan Goes Public-Lake Nipigon Basin Protection Plan Open House Set
Thunder Bay Post	Jan. 26/01 July 6/01 Sept. 6/02	Lake Nipigon Part of Ontario's Living Legacy Review of Open Houses Draft on Lake Nipigon Basin Land Use Strategy
Nipigon-Red Rock Gazette	Jan. 23/01 Sept. 25/01 Dec. 18/01 Oct. 22/02	Lake Nipigon Basin Chosen as a Signature Site Facilitated Workshop Highlights Highlights of the Options Open Houses Petition voices concern for Nipigon Basin Project
Toronto Star	Sept. 29/01	Lake Nipigon Days - Are They Numbered?
CJLB-FM Radio Thunder Bay	Jan. 22/01	News Item
CBQ-FM Radio Thunder Bay	Jan. 22/01 Jan. 22/01 Jan. 22/01 Jan. 23/01 Jan. 23/01 Jun. 20/01	News Item Voyage North - First Nation Perspective on Lake Nipigon Basin Voyage North - Lake Nipigon Basin Concerns Over Signature Site Great Northwest - Lake Nipigon Basin Great Northwest - Ontario's Living Legacy
CBC Radio	Feb. 17/01	Fresh Air Program - Orient Bay Ice Climbs
CKPR - AM Radio Thunder Bay	Jan. 22/01 Jan. 22/01	News Item Late Edition - Lake Nipigon Signature Site
CKPR-TV Thunder Bay	Jan. 22/01 Jun. 28/01 Dec. 13/01 Dec. 14/01 Oct. 6/02 Oct. 13/02	Late Edition - Lake Nipigon Signature Site Evening News - Lake Nipigon Basin Evening News - Lake Nipigon Basin Open House News - Lake Nipigon Basin Options Presented to Public Northwest Newsworld - Living Legacy Strategy and Nipigon Northwest Newsworld - Campers concerned with government plan
Thunder Bay Source News	Feb. 26/01	Hunters, Anglers Worry about Lake Nipigon Plan
EBR Posting	Dec. 12/01 Mar. 18/01	Ecological Land Use and Resource Management Strategy for the Lake Nipigon Basin Signature Site Ecological Land Use and Resource Management Strategy for the Lake Nipigon Basin Signature Site An Invitation to Participate
Various Publications (Article) printed in more than one publication	May 29/01 Nov. 14/01 Feb. 22/02	First Information Centre Second Information Centre: LNBSS ELURMS Public Access at Risk: Land Usage May be Limited to Specific Groups
News Release	Jan. 19/01 Jan. 22/01 Jan. 22/01 Mar. 29/01 Feb. 21/02	Media Advisory: Ontario Moves Ahead on Implementation of Ontario's Living Legacy Ontario Moves Ahead on Third Signature Site Under Ontario's Living Legacy Northwestern Ontario Associated Chamber of Commerce President Welcomes Planning Initiative for the Lake Nipigon Basin Second Anniversary News Conference OLL Northwestern Ontario's Sportsman's Alliance

APPENDIX B: DESCRIPTION OF THE STUDY AREA

PREHISTORY

Since the last ice age, Aboriginal people have inhabited the Lake Nipigon Basin. About 9,000 years ago, during the Paleo-Indian Period (9,000 – 7,000 BP), people of the Plano culture migrated to the area from the south and west. Paleo-Indians lived as hunters and gatherers and used sophisticated chipped stone tools. From 7000 BP to the time of European contact the Lake Nipigon Basin was home to peoples from the Archaic Traditional, Laural Culture (Initial Woodland Period), Blackduck and Selkirk cultures (Terminal Woodland Period).

Although some archaeological research has been done in the Nipigon Basin, it is far from comprehensive or complete. Present archaeological site data for the Basin reveals that there are approximately 1 Paleo-Indian, 3 Archaic, 17 Initial Woodland and 20 Terminal Woodland sites as well as 42 sites where the cultural affiliation has not yet been determined (MNR, 2000). In some cases, evidence of two or three cultural affiliations as well as historical artifacts can be found at one location.

EUROPEAN CONTACT AND THE FUR TRADE

Europeans first recorded Lake Nipigon in 1656, when the governor of New France made a trading concession to Sieu Zachaire Dupuy, a colonial officer, for lands from the Gulf of St. Lawrence to Lake Nipigon. Some of the first Europeans to travel to the Nipigon Basin were Radisson and Groseilliers, two French fur traders whose travels led to the creation of the Hudson Bay Company in 1670.

Native traders traveled with their furs from Lake Nipigon up the Wabinoosh, Pikitigushi, Jackfish, Ombabika, Onaman and Namewaminikan River systems to the Albany River and finally to Hudson Bay where they traded with the Hudson Bay Company traders. The French fur traders began building trading posts in the interior of Northern Ontario

which shortened the distance Natives had to travel to trade their furs. The French traders eventually banded together and became known as the North West Company. Fierce competition ensued between the two fur trading companies. The Lake Nipigon Basin was very much at the centre of this conflict and was the site of many fur trading posts. The competition between the English and the French eventually led to the merging of the two companies under the name “*Hudson Bay Company*” in 1821.

EARLY SETTLEMENT HISTORY

In 1865, the first gentlemen anglers came to the Nipigon River to fish. Red Rock House, at the mouth of the Nipigon River, was an important outfitting station between 1870 and 1880. In 1916 Dr. J.W. Cook of Fort William caught the world record brook trout (14.5 lbs.) at Rabbit Rapids on the Nipigon River. The legendary appeal of the area also led to visits by Royalty. However, by the early 1900's fish sizes and numbers had begun to decline.

The Canadian Pacific Railway was constructed in 1883-85 along the shore of Lake Superior through the Nipigon region. In 1903, construction of a second transcontinental railway (C.N.R.) was started through the area north of Lake Nipigon. The 18 kilometer-long Nipigon Tramway was built along the Nipigon River to assist in transportation of equipment and supplies for the railway. Yet another railway (C.N.R.) was put in along the east shore of Pijitawabik Bay heading northeast toward Longlac. This railway was built by William Mackenzie and Donald Mann, owners of the Canadian Northern Railway, and was completed in 1914.

Commercial fishing on Lake Nipigon began in 1917 as a result of food shortages brought on by World War I. Icehouses were established at Macdiarmid, near the C.N.R. rail line and the newly built railway transported the fish to markets.

Hydro development and forestry began in the Nipigon Basin in the early 1900's.

Three successive dams were built along the Nipigon River from 1918-1930 (Cameron Falls Dam, Virgin Falls Dam, Alexander Dam). By 1940, the Ogoki diversion began. The normally north-flowing Ogoki River was channeled southward into Lake Nipigon and down through the Great Lakes to increase the power output at Niagara Falls. In 1950, Pine Portage Dam was built, raising the water level of Lake Nipigon by 12 cm, flooding over the Virgin Falls Dam. The community of Cameron Falls, developed as a result of dam construction, is now a ghost town.

Early logging was done to obtain materials for building the railways, however pulpwood logging increased after 1915 to meet the needs of paper mills in Port Arthur,

SAULT STE. MARIE, NIPIGON AND RED ROCK.

In 1900 the first attempts were made to send logs down the Nipigon River, resulting in logjams, however log drives continued in this area until 1973. Remnants of old logging camps can still be found within the Lake Nipigon Basin.

Mining within the basin began in 1929 with the discovery of gold in the Beardmore area. The Beardmore (Northern Empire) Gold Mine produced gold and silver until 1941. The Leitch and Sand River mines were also located near Beardmore, and these mines became among the richest gold mines in the province. The mines closed in 1968 with total production of 847,690 ounces.

NATURAL ENVIRONMENT AND RESOURCES

CLIMATE

The Lake Nipigon Basin is characterized by a modified continental climate which is typified by long cold relatively dry winters and warm to hot and relatively humid summers. These temperatures are moderated by the effect of Lake Nipigon. The mean annual temperature for the area ranges from -2 degrees Celsius to + 2 degrees Celsius. Mean annual total precipitation ranges from 71 to 76 cm. The average length of the growing season in the basin is 140 - 155 days.

EARTH SCIENCES

The entire basin of Lake Nipigon lies within the Canadian Shield, which consists predominantly of Precambrian igneous, metamorphic and sedimentary rocks. The Southern Province bedrock is dominated by late Precambrian Logan and Nipigon diabase sills, which make up the famous "*Nipigon Plate*", a sub-province of the Southern Province of the Canadian Shield. The Nipigon Plate rocks form one of the more interesting observable features of the Lake Nipigon Basin. Over time, softer sedimentary strata have been eroded away, leaving spectacular displays of cliffs and outcrops, especially in Pijitawabik Bay and on the northwest shore of Lake Nipigon.

East-west trending belts of metavolcanic and metasedimentary rocks represent the oldest Precambrian rocks. These formations are commonly referred to as Greenstone Belts and were where early 1900s gold mining occurred near Beardmore.

The topography of the area varies from gently rolling to hilly and rugged terrain. Shoreline areas are composed of exposed bedrock and eroded cliffs, talus slopes and beaches. The north end of the Basin is composed of gently rolling to moderately hilly plains. By contrast, the west shore of Lake Nipigon, Black Sturgeon Bay, Pijitawabik Bay and Livingstone Point exhibit strongly broken plains with steep to precipitous cliffs. Islands are for the most part gently rolling, with the exception of Inner Barn and Outer Barn Islands, Locomotive Island, Undercliff Island and Hat Island. The highest elevation on the lake is Inner Barn Island at 170 metres above the level of Lake Nipigon.

VEGETATION

The majority of the Lake Nipigon Basin is located within the boreal forest. Tree species such as trembling aspen, white birch, black spruce and balsam fir predominate with some admixtures of red and white pine. White spruce, balsam fir and jack pine are also common species here. The Nipigon River and the Black Sturgeon waterway lie within the

transition zone between the boreal and the Great Lakes St. Lawrence Forest. In this area admixtures of white and red pine and white elm occur along with the boreal tree species. Lake Nipigon is dominated by a large number of islands, which are primarily forested by black and white spruce, white birch and balsam with trembling aspen and jack pine occurring less frequently.

Fire plays an important role in the local forest ecology, acting as the primary means of rejuvenating the boreal forest ecosystem. Fire swept through the area over 150 years ago leading to the evolution of the current forest types. Several more recent fires occurred during the 1940's and 1950's. The largest recent fires took place in the spring of 1999 near Beardmore and Black Sturgeon Lake. Current fire management strategies ensure that fire suppression will occur along the shorelines of Lake Nipigon to protect forest resources and ensure human safety. Fire suppression activities on the islands will only occur if fires are threatening human safety or structures.

The most common wetland types in the Nipigon Basin are marshes and swamps. The few bogs within the area are species poor due to a lack of nutrient-rich water and contain black spruce and tamarack.

One of the highlights within the Basin are narrow sand beaches located sporadically along the shoreline and islands of Lake Nipigon and on some inland lakes. Rock barrens and talus slopes dominate many shorelines. These sites have a high concentration of arctic/alpine plant species due to their exposure to extreme temperature and humidity fluctuations. Cliffs have vegetation composed of mosses, lichens and ferns as well as scattered stands of black spruce, birch and cedar.

The dune community is most apparent within the Windigo Bay Nature Reserve, where a sand plain exists adjacent to dunes treed by jack pine.

There are 18 provincially significant plant species and 57 regionally significant vascular

plants within the Lake Nipigon Basin (North-South Environmental, 2001).

BIRDS

The total number of breeding bird species within the study area ranges from 60 to 150 depending on the information source. More work is required to better establish the actual occurrence of breeding bird species in the Lake Nipigon Basin. Three significant bird species have been confirmed breeding within the study area: the American white pelican, the bald eagle and the great grey owl. These birds are also considered species at risk.

The American White Pelican, classified as endangered, was first observed nesting on Pretty Island in McIntyre Bay, Lake Nipigon in the 1970's. Numbers have since grown to 1000 birds (Swainson and McNaughton, 2001). West Bay, Wabinoosh Bay, Windigo Bay, Ombabika Bay and the mouth of most tributaries are currently key feeding habitat for pelicans on Lake Nipigon.

The peregrine falcon, currently classified as endangered, was successfully reintroduced into the Nipigon River area in 1991 through Project Peregrine. One pair of falcons has been breeding annually near the Nipigon River mouth since 1991. An abundance of suitable nest sites within the Basin have been mapped. It is likely that as peregrine numbers increase, utilization of these sites will occur.

Bald eagles are another endangered species recovering from the ravages of DDT and PCB poisoning. They are commonly sighted within the Basin. There are currently over 140 bald eagle nesting sites on Lake Nipigon and 7 nests along the Black Sturgeon River. Eagles congregate in the fall along the Nipigon River to feed on spawning Chinook salmon. During the fall of 2000, 60 eagles were seen at one time, in this area.

Black terns are another species at risk within the Basin and are designated as "vulnerable." Habitat loss and fragmentation are contributing to the bird's decline because they require wetlands over 5 ha in size.

In June of 1991, the Thunder Bay Field Naturalists observed a flock of 19 terns on Lake Nipigon. Some suitable wetland, nesting habitat for these birds can be found on Lake Nipigon.

The great grey owl, golden eagle, red-necked grebe and osprey are some other important wildlife species that have been observed within the basin. The golden eagle is classified as endangered and some have been observed near Armstrong with a potential nest site in the Basin. The red necked grebe has been sighted along the Nipigon River and Lake Nipigon during migration, however no nesting sites have been observed. The great grey owl has been observed during nesting season near Jessie Lake along the Nipigon River and near Wabinoosh Bay on Lake Nipigon although no confirmed nest sites have been found. There are a total of 17 osprey nests on Lake Nipigon and one nest on the Black Sturgeon River.

Since the banning of DDT, double-crested cormorants have made a strong comeback. During Thunder Bay Field Naturalist surveys in 1991 and 1992, over 2,500 nest sites were counted on Lake Nipigon and over 5,000 individuals were seen. Herring gulls and great blue herons are also seen within the basin. A total of six heronries have been observed on Lake Nipigon.

MAMMALS

The total number of mammal species occurring in the Lake Nipigon Basin ranges from 30 to 52 species depending on the information source consulted. More work is required to better establish the number of mammal species that occur. Three species at risk occur or have been observed in the Basin: the woodland caribou, eastern cougar and wolverine. Other mammals within the Basin and the boreal forest in general include the moose, white tailed deer, timber wolf, marten, lynx, otter, red fox, fisher, weasels, beaver, porcupine, snowshoe hare, woodchucks, two squirrel species, two chipmunk species, four vole species, five mouse species, six shrew species and six species of bats.

Woodland caribou are a threatened species. Since the 1850's caribou have retreated from their widespread range in the boreal forest and tundra areas to the northern half of the Lake Nipigon Basin. Caribou summer on small to mid-sized islands (ideally those 25-75 ha in size) of Lake Nipigon to minimize wolf predation during calving. They spend the winter on the mainland and utilize areas near Armstrong, Wabakimi, the Ogoki reservoir and Onaman Lake.

The eastern cougar is classified as endangered and has almost disappeared in eastern Canada, being intolerant of human disturbance. However, the Lake Nipigon Basin is considered an important area for sightings. A total of 150 sightings have been reported within and in close proximity to the Basin.

The wolverine is another animal that requires large tracts of undisturbed land and is intolerant of human disturbance. Its current range is thought to have receded to the Red Lake area and it is currently classified as "*vulnerable*". Some unconfirmed sightings have occurred within the Lake Nipigon Basin.

REPTILES AND AMPHIBIANS

Many of the reptiles and amphibians within the Basin are at the northern limits of their range. It is thought that 18 species of reptiles and amphibians occur within the Basin, although only 15 of these have actually been observed. These include the garter snake, American toad, spring peeper, wood frog, boreal chorus frog, mink frog, northern leopard frog, green frog, western painted turtle, eastern newt, and salamanders. Salamanders include the yellow spotted, blue-spotted and Jefferson complex types.

A mudpuppy was also recorded within the Basin.

FISH

The fish community of the Lake Nipigon Basin is dominated by trout and whitefish, which is typical of post-glacial landscapes dominated by deep, cold, nutrient poor, oligotrophic (cold water) lakes.

Approximately 50 fish species comprising 13 families occur within the planning area. Only nine non-native species inhabit the area, of these, six are primarily confined to the lower reaches of Nipigon and Black Sturgeon Rivers.

Lake Nipigon's fish community has remained relatively unchanged since the early 1900's with the exception of the introduction of smelt in 1976. The deep, cold, unpolluted water of Lake Nipigon supports trout, whitefish, cisco and sculpins and allows species at risk such as shortjaw cisco and deepwater sculpin to persist. Although additional studies are needed, recent research indicates that five species of deepwater cisco, considered to be a devastated group of North American fishes (Turgeon & Bernatchez, 2000), still exist within Lake Nipigon. Two of these species have never been found elsewhere. Lake Nipigon also provides habitat for warm water species such as walleye, northern pike, sauger, sturgeon, yellow perch, common white and longnose sucker.

The Black Sturgeon River provides habitat for a variety of cold water and warm water fish species and species composition has remained much the same for the past 76 years. Thirty species of fish have been found within the system (9 non-native) and one species at risk, the northern brook lamprey, a species ranked as "*vulnerable*" to extinction in Ontario.

The Nipigon River, famous for the quantity and size of its brook trout, is home to many fish species as well. Upstream from Alexander Dam, the river provides habitat for brook trout, lake trout, walleye, lake whitefish, northern pike and most recently, smelt. Alexander Dam blocks fish migration from Lake Superior. The lower section of Nipigon River is home to most of the species in Lake Superior including coaster brook trout, lake trout, walleye, northern pike, smelt, lake whitefish, sea lamprey, brown trout, rainbow trout and Pacific salmon species.

River tributaries flowing into Lake Nipigon provide important spawning habitat for brook trout, walleye, smelt, suckers and to a lesser extent, lake whitefish and sturgeon. Northern pike use the wetlands along the mouths of

many tributaries for spawning. Most of the inland lakes in the Basin are located primarily in the area south of Armstrong and are deep, cold-water lakes, surrounded by rugged terrain and high cliffs. Some shallow warm water lakes can be found in the area north of Lake Nipigon. Few of these lakes have been formally surveyed.

SOCIAL AND ECONOMIC ASPECT

COMMERCIAL FISHING

Large-scale, mechanized commercial fishing did not occur in the Lake Nipigon Basin until the early 1900's. Mechanization led quickly to over-fishing, with a harvest of 2.3 million pounds in 1919. Since that time, stock harvests have fluctuated depending on factors such as market price, weather, fishing effort and stock abundance. Lake whitefish are the mainstay of the fishery. Other fish species sought have included walleye, lake trout, sauger, cisco and northern pike species. Since the smelt arrival in Lake Nipigon in 1976, smelt fishing has skyrocketed to over half a million pounds reported harvest in 2000. Reported commercial harvests of whitefish and lake trout have remained relatively unchanged. Walleye and sauger reported harvest levels have remained low since a 1996, harvest decline and the subsequent closure of Ombabika Bay to commercial fishing.

SPORT FISHING

Sport fishing on Lake Nipigon began in the 1920's. Fish species targeted during the mid to late 1900's were mainly brook trout, walleye and northern pike. Lake trout represented approximately 4% of the angling harvest at that time. This changed in the 1990s when enhanced technology enabled the discovery and targeting of large lake trout. Increased fishing pressure on the lake trout led to a reduction in fishing quality. The stocks of walleye and northern pike had also begun a decline, so in 1997 a set of special fishing regulations were implemented for Lake Nipigon.

On the Nipigon River, over-fishing in the 1800s and the creation of dams from the 1920s to the 1950s, lead to habitat destruction and fluctuating water levels. A brook trout rehabilitation plan was developed in 1989, and various fisheries management programs have taken place since then in an effort to protect brook trout populations and improve water levels. Brook trout, northern pike, lake trout, Chinook salmon, whitefish and smelts are still commonly sought fish today.

Sport fishing also occurs on the Black Sturgeon River but fishing pressure is light, focused primarily on highly accessible locations.

Fishing charters are an important part of the local economy. A total of 10 tourist outfitters (charter boat operators and lodges, resorts and cabins) are located on Lake Nipigon. Areas accessible by road include Pijitawabik Bay, Poplar Point, High Hill Harbour, South Bay, Gull Bay, Chief Bay, Ombabika Bay, Humboldt Bay, Onaman River and the Poshkokagan River.

FORESTRY

Forestry has played a large role in the economy of the Lake Nipigon watershed since the early 1920s. The proximity to Thunder Bay and extensive river systems made sections of the forest accessible to early horse logging operations and river drives. Currently there are four Sustainable Forest Licenses (SFL's) that overlap with the signature site. Bowater Pulp and Paper Canada Inc. holds the license for the Black Sturgeon Forest Management Unit. Domtar Inc. holds the SFL for the Lake Nipigon Forest Management Unit as well as the Armstrong Forest Management Unit. Abitibi Consolidated holds the license for the Spruce River Forest management unit, located on the west side of the Basin.

According to the current 5-year forest management plans, harvest and salvage operations have been allocated in four of the five enhanced management areas. Forestry activities are an important source of employment for local people.

MINING

In the Beardmore area, the Beardmore-Geraldton Greenstone Belt transects the lower half of the Nipigon Basin running in a northeast to southwest direction. These older Precambrian rocks have high mineral potential for gold and base metal exploration.

A significant portion of the local economy in the Beardmore area is dependent on exploration activities. More than 40 active prospectors, along with junior and senior mining companies conduct exploration work in the area, with total expenditures of over \$400,000 per year.

In the southwest and western portions of the Lake Nipigon Basin, the Black Sturgeon Fault structure contains a variety of minerals. These include uranium, hematite, molybdenum and titanium, and are often associated with copper-gold deposits. The fault structures in the region also localize intrusions with PGE associations (Platinum Group Elements) which are also being explored by mining companies.

Lac des Iles Mine, an open pit palladium mine currently valued at 6 billion dollars, is located to the southwest of the Basin. This mine is currently undergoing expansion and demonstrates the potential of the Lake Nipigon Basin as a source for Palladium Group Element (PGE) metals.

HUNTING AND TRAPPING

Hunting has been and will continue to be an important social and economic activity in the study area. Moose are the principal big game animal in the district. The islands of Lake Nipigon are closed to hunting. During hunting season, moose in the rest of the basin are heavily targeted. There are seven wildlife management units and moose tags are allocated on a per unit basis. Aboriginal and treaty rights allow First Nation people to hunt for subsistence purposes. The extent to which subsistence hunting occurs within the Basin is unknown. Seven charter boat operators cater to moose and bear hunting. Black bear hunting is continually increasing in

popularity, with non-residents using local outfitter services. Other animals hunted in the area include upland game birds, white-tailed deer and waterfowl.

Trapping continues to provide some economic benefit to local people. There are 41 traplines partially or wholly within recommended protected areas within the Basin. Traplines held by non-natives within existing nature reserve class provincial parks will be phased out by January 1, 2010.

POWER DEVELOPMENT

Power development began in the Nipigon Signature Site in 1918 with the building of the Cameron Falls Dam on the Nipigon River. In 1925 and 1930 two more dams, the Virgin Falls and the Alexander Dams were built "to enable the total flow of the Nipigon River to be utilized for power development" (HEPC, 1972). The Ogoki River Diversion was initiated in 1940. The Waboose Dam, built on the Ogoki River in 1942, diverted water flowing north to the Albany River and directed it south through the Nipigon Basin to increase the power output at Niagara Falls. The existing power plants on the Nipigon River could not effectively harness this increased output, so the Pine Portage Dam was built in the 1950's. Ontario Power Generation (formerly Ontario Hydro) operates all of the dams.

In 1990 an interim flow agreement was reached to minimize damage to brook trout spawning beds. A Nipigon River Water Management Strategy was developed in 1994. A new water management plan for Lake Nipigon, its tributaries and the Ogoki Diversion is currently being prepared with a target implementation date of April 1, 2004.

A hydroelectric power dam was built at High Falls on the Namewaminikan (Sturgeon) River in 1992, creating a 7 kilometre long reservoir. It has never operated due to financial and technical difficulties.

TOURISM ACTIVITIES

Non-consumptive recreational resource use is increasing within the Lake Nipigon Basin.

Camping, swimming, canoeing and kayaking, wildlife viewing and ice/rock climbing are some of the most popular activities within the region. Organized camping occurs at Poplar Point campground and there are over 40 remote campsites being regularly used within the Basin. A number of excellent canoe routes occur on rivers flowing into Lake Nipigon. Commercial outfitters supplying guides and/or gear provide stimulus to the local economy. Cottage developments occur at Poplar Point, Orient Bay, McIntyre Bay and South Bay on Lake Nipigon and on two lakes south of Armstrong. Winter activities such as snowmobiling, ice climbing, dogsledding and winter camping add tourist dollars to the area. The Basin is traversed by the Trans-Ontario Provincial "A" and "AD" snowmobile trails. Tourists travel from as far away as Germany and Japan to ice climb in the Orient Bay area.

Market trends indicate that overseas visitors to Canada are growing, as is interest in remote adventure travel and outdoor recreation and conservation. Most tourists to the North of Superior region travel here by automobile for recreation and are from within the province. Research conducted by the Ministry of Tourism indicates that in the year 2000, the level of tourism in the Lake Nipigon Area was 73,000 person nights and 30,000 person day trips, producing \$4.3 million of direct tourism expenditures and 140 person years of employment.

APPENDIX C: ISSUES

ABORIGINAL COMMUNITIES

- Aboriginal communities have concerns with regard to Ontario's jurisdiction over resources and the allocation of those resources
- Some Aboriginal Communities want to have land claim issues resolved before any planning occurs in the Basin
- The need for more resources, time and support funding make it difficult for First Nations to participate in the process to the degree they desire
- A wide range of views exist among Aboriginal communities with regard to how the Basin should be managed
- There is a need to have all Aboriginal communities associated with the Basin come to consensus on management decisions

ACCESS TO LAKE NIPIGON

- Although a small number of access points exist on the lake, few have facilities such as parking, docking, boat ramps, garbage collection or washrooms. Some people want improved facilities and access while others are concerned of the resulting impact on the Lake ecosystem
- Need to address access point use and management for the following access points: Poshkokagan River, Chief Bay, South Bay (2 sites), Humboldt Bay (2 sites), Ombabika Bay, Gull Bay, Pine Portage and Pishidgi
- There is some concern about the creation of new or upgrading of old access points to Lake Nipigon through logging or mining activities
- Armstrong residents have a desire for new access to the north end of Lake Nipigon

- The remote and inaccessible character of the north half of Lake Nipigon is valued. There are different perspectives on what "*remote and inaccessible*" means. Access via Ferland, Mud River, Ombabika and the use of trails, waterways and boat caches needs to be addressed. The possibility of a connecting link (Pikitigushi Road and Auden Road) that would provide a circular access route around the north end of Lake Nipigon may increase recreational activity use and access to this "*remote*" area

FOREST MANAGEMENT

- Wood supply is limited in the Northwest Region of Ontario
- Forest management activities are ongoing in the enhanced management areas and may limit the management options for these areas
- Conflict may arise between the public and forest industry with regard to modifying operations for the achievement of protection (e.g. views, buffers)

WILDLIFE

- The need for detailed inventory work and monitoring for insects, birds, amphibians, reptiles or small mammals makes their management difficult
- Increasing human use of the Lake Nipigon Basin could result in declining nesting success of white pelican and bald eagle (both endangered), two species which require isolation
- White pelican, and cormorant populations are increasing in the Lake Nipigon Basin. Fishermen are concerned that these fish-eating birds are negatively impacting fish populations
- Some feel that island summer caribou habitat should be actively managed through use of prescribed burning whereas others want it to be left to nature

- Caribou are particularly subject to human disturbance and habitat destruction, and rely on the islands of Lake Nipigon for critical calving habitat. Increased use of the Lake Nipigon Basin for tourism and recreation may have a negative impact on the threatened caribou
- The interaction of caribou, moose and deer within the Basin is not clearly understood
- Orient Bay/Pijitawabik Palisades is a particularly significant area for bats. A hibernaculum is suspected in the area but has not been confirmed. Recreational use of the area could inadvertently lead to disturbance of the hibernating bats if the hibernaculum is not found
- The OLL Strategy references the option of introducing a primitive weapon hunting season for big game on the islands. The moose populations are low and may not be able to sustain additional hunting beyond the current level of subsistence hunting by Aborigines
- on the aquatic ecosystem of Lake Nipigon is unknown
- Incidental catches of lake trout and non-marketable fish (ling, suckers) by commercial fishermen is unavoidable with current fishing techniques. Impact of incidental catches of brook trout by commercial fishermen is unknown
- Conflict exists between sport fishermen and commercial fishermen over the allocation of lake trout
- Commercial fishermen have requested to “trade” their northern pike quotas for additional commercial quotas of another species
- No rehabilitation efforts, studies or recovery plans have been initiated/completed for sturgeon (species of special concern), shortjaw cisco (threatened) or sculpin (threatened)
- There is currently no direct method to regulate the amount of fish killed by sport fishermen on Lake Nipigon

FISH AND FISHERIES

- Some sport fishermen would like to see the commercial fishing licences bought out. Commercial fishermen want to continue to commercial fish
- Commercial fishermen want to use gill nets while anglers are requesting that they use trap nets or pound nets
- Disposal of non-marketable fish on the ice may be keeping the wolf population artificially high. The impact this could be having on caribou, moose and deer populations is not clearly understood
- The existence of lake wide quotas as opposed to zone quotas limits management options
- Lack of detailed information on fish stock status, movement patterns and genetics hampers effective management. For example, the impact of smelt introductions
- Lack of angler education results in improper fish handling techniques and emphasis on traditional game species only
- Sport fishing quality on Lake Nipigon has deteriorated. The walleye and brook trout fishery is still degraded and requires further management
- There is a need to accurately estimate the level of subsistence harvest
- Black Sturgeon Lake is providing very few angling opportunities relative to its size
- The impact of the Black Sturgeon Dam on fish migration is unknown
- There is a need for more information about the tributaries and surrounding lakes in the Signature Site study area which hampers effective management, e.g. accurate location of barriers to fish migration

- Very little is known about the level of baitfish harvest within the Lake Nipigon Basin
- Introduction of Spiny waterflea has occurred; impact to aquatic ecosystem is unknown

TOURISM

- Conflict between development versus protection
- There is currently no control mechanism for the number of house boats/cruiser boats that use Lake Nipigon, however their impact may be significant
- There is a need for more information regarding the type and level of tourist activity in the Nipigon Basin

CROWN LAND USE

- Actual number of Crown land campsites within the Lake Nipigon Basin and their level of use are not known
- Impacts of current Crown land uses have not been fully inventoried (e.g. garbage, erosion, soil compaction, destruction of vegetation, wildlife habitat degradation, etc.) and types of use (hiking, camping, snowmobiling, etc.) have not been well assessed
- Requests for Land Use Permits for Crown land recreation may conflict with the need to protect the ecosystems of the Lake Nipigon Basin
- Boats from outside the Basin are being launched in Lake Nipigon, which increases the risk of the introduction of exotic species into the lake
- Creel surveys indicate that a large number of Crown land users in the Basin are non-residents. Some people feel that a fair return for the use of the resource is not currently being recognized

- Crown land use activities may be negatively impacting sensitive species (impact on colonial, shore bird nesting sites, spawning sites, caribou habitat)
- The Nipigon Palisades are accessed for ice/rock climbing activities. Currently, there is no safe parking facility to accommodate this use. As such, safety issues arise when recreationalists park on the side of Highway 11 to access the cliffs

COTTAGING

- Sale of Crown land for new cottage development may be considered in the Lake Nipigon–Beardmore and Gull Bay EMA's, on environmentally suitable sites. Conflict may arise between those who would like to see this development and those who don't want it. There may be pressures to develop elsewhere in the Lake Nipigon Basin aside from the EMA's
- Private land development could impact the sustainability of the basin's resources

WATER RESOURCES AND USE

- There is continued habitat degradation occurring in the Little Jackfish River and Ombabika Bay due to erosion from increased water flows
- Drawdown continues to impact the productivity of the Nipigon River by stranding fish and exposing aquatic invertebrates to desiccation
- There is no recent water quality, zooplankton or benthos information for Lake Nipigon tributaries, Black Sturgeon Lake, Black Sturgeon River and Nipigon River. Nor is there standardized sampling protocols or long term monitoring stations for these waters
- There are no formal water quality objectives linking Lake Nipigon with the Lake Superior Management Plan

- There is a need to improve interagency transfer of limnological and contaminant monitoring data
- The contaminant levels are elevated in at least some species of fish in all water systems in the study area. The public is not well aware of the consumption restrictions
- Proposals for hydroelectric development on tributaries to the Lake Nipigon Basin could have negative impacts on fish or fish habitat

APPENDIX D

Guidelines for Exploration Best Practices In Enhanced Management Areas in The Lake Nipigon Basin

INTRODUCTION

These guidelines affirm the mineral exploration industry's commitment to sustainable development, a concept that requires balancing the need for economic growth with good stewardship in the protection of human health and the natural environment. The guidelines offer practical methods and best practices which, when applied, will ensure that an exploration project is carried out with the lowest levels of disturbance possible to its natural surroundings within Enhanced Management Areas (EMA's). The suggested guidelines do not take precedence over Ontario statutes and regulations but rather comply with them by providing standard procedures for maintaining good environmental practice at the various stages in the exploration process.

Seven categories of EMA have been defined in Ontario Living Legacy Land Use Strategy. These are defined with the use of subscripts to the acronym EMA, as follows:

n – natural heritage
 g – Great Lakes coastal areas
 r – recreation
 t – resource based tourism
 a – remote access
 i – intensive forestry
 w – fish and wildlife

The following prescriptions are extracted from the OLL Land Use Strategy document released in July 1999:

LAND USE DESIGNATION ENHANCED MANAGEMENT AREA

“Enhanced Management Areas is a new land use category that has been established in order to provide more detailed land use direction in areas of special feature or values.....”

“Enhanced Management Areas may lead to modifications (e.g. timing, location, method, and access) in resource-management practices in order to recognize other land use values. These adjustments will be implemented with no impact on wood supply, and only in exceptional cases will wood costs be affected. EMAs will provide a specific focus for the application of guidelines and other planning and management strategies. More detailed implementation strategies will be developed with the participation of stakeholders.”

Explorationists should ensure that they have an up to date EMA Values Maps for the EMA within which they are conducting exploration activities. EMA Values Maps will be provided to the explorationist by the Ministry of Northern Development and Mines (MNDM) in cooperation with the Ministry of Natural Resources (MNR). The exploration community should ensure that they identify any natural heritage, recreational, fish and wildlife, tourism or forestry (e.g. plantation) values within their exploration area of interest. By following the suggested guidelines contained herein, members of the Ontario exploration industry may carry out their work in the search for new wealth in enhanced management areas with confidence that they are doing so in an environmentally sensitive manner.

PROTECTING VALUES IN ENHANCED MANAGEMENT AREAS

Careful regard and avoidance of impact is strongly recommended to protect all values in Enhanced Management Areas (EMA). This document includes Area of Concern (A.O.C.) prescriptions for protecting fish and wildlife values (Appendix 1). The A.O.C. prescriptions are found within forest management plans written for all forest management units in Ontario under the terms of the Crown Forest Sustainability Act. All EMA's are found within forest management units. The A.O.C. prescriptions are legally binding on forest companies as they conduct timber harvest, silviculture and forest regeneration activities. The A.O.C. prescriptions have been adopted for fish and wildlife values which may be

encountered by the exploration community in EMA's. To protect other values (e.g. cultural and heritage) encountered during exploration activities it is strongly recommended that site specific measures be developed on a case by case basis in consultation with the MNR.

Observe the following points in the management of your exploration program:

1. Be aware of the three R's of exploration and practice them at every stage of your exploration program **RESPECT** the environment in which you work. **REFRAIN** from unnecessarily disturbing the natural environment. **RESTORE** the natural setting of areas where you have worked.
2. Ensure that workers are familiar with environmental protection measures and industrial hygiene requirements. Make sure that they are aware of regulatory requirements and environmental codes and are also properly trained to carry out any procedures pertaining to environmentally related situations.
3. In the event of a proposed program of advanced exploration under Part 7 of the *Mining Act*, conduct environmental baseline studies, consisting of water, soil and, if necessary, lake bottom sampling, prior to any major disturbance of the natural surroundings. These baseline data are essential for the monitoring of the property during its later development.
4. Ensure that your exploration program is designed and budgeted to take into account all potential sensitivities associated with fish and fish habitat, wildlife, downstream water users, marshes and wetlands, native lands, archaeological sites and all other Crown land values and user groups. Be aware that exploration activities undertaken in or close to marshes, bogs, lakes, streams and rivers require special care and planning. Communication with the District Biologist at the local MNR office is strongly recommended.

Observe the following procedures and practices during each stage of your exploration program.

Field Reconnaissance

1. Be familiar with all statutes, regulations, amendments, and guidelines governing all aspects of mineral exploration in the area in which you are working (Appendix 2). In the event of proposed activities that exceed allowable disturbances under Part 7 of the Mining Act, consult with the Mineral Development Coordinator, MNDM. Before the start of an advanced exploration program, ensure that all necessary permits have been acquired and are in place. Be aware of the location of all natural heritage, recreational, fish and wildlife, tourism or forestry (e.g. plantation) values in the area of your proposed work operations. These are found on the EMA Values Maps as supplied through the Resident Geologist Office and the office of the Regional Land Use Geologist, MNDM, in cooperation with the MNR. Ensure that you have a copy of the EMA Values Map for your area even if you have not been contacted.
2. Ensure that all employees, including contractors, stakers etc. hired for an exploration project, are trained in and knowledgeable about identification of sensitive natural values, environmental protection measures and industrial hygiene requirements. Make sure that they are familiar with regulatory requirements and environmental codes (Appendix 1,2) and are properly trained to carry out procedures pertaining to environmental protection and remediation.
3. Ensure that contractors and subcontractors know their responsibilities and liabilities and that they discharge their duties correctly.
4. Minimize disturbance to forestry plantation areas by respecting fences and gates. Observe all signs posted by landowners, forestry licence holders and respect the rights of others.
5. Avoid unnecessary disturbance of vegetation and wildlife. Keep vehicles on established roads whenever possible. Obtain permission and guidance from landowners or forest licence holders when travel to off-road sites is necessary.
6. In principle, carry out what you carry in. Use proper receptacles for refuse and try to leave an area cleaner than it was upon your arrival. With proper approvals, reusable items such as lumber, frames, floors, etc., may be neatly piled and stored at the site.
7. Check for local MNR regulations governing the lighting of fires. The lighting of fires may be prohibited at certain times of the year. Ensure that appropriate fire fighting equipment in quantities appropriate to the number of personnel and type of activity is available on site.
8. Ensure that temporary work camps are located, constructed and operated in such a way that they will have the minimum impact on the environment. Always keep camps neat, orderly, safe and clean and in accordance with local regulations.
9. Avoid any disturbance to community watersheds, fisheries habitat, upwellings and spawning beds by familiarizing yourself with their location (Appendix 1). Do not operate vehicles or heavy equipment in streams or on stream or pond banks. Keep to a minimum any clearing, grubbing, excavating or other surface disturbances near streams and ponds. If such activity is proposed, preserve a natural buffer zone of undisturbed natural vegetation at least 10 metres wide or wider at the water's edge to prevent siltation. If in doubt, contact your local MNR Biologist.

10. Handle all fuel and hazardous materials with care and avoid spills by ensuring that they are stored properly. Control any spills and/or leaks by establishing berms around storage containment areas and by placing water pumps and portable operating equipment in metal drip trays. In the event of a spill, notify the Ministry of the Environment and MNR as soon as possible.

11. Use on-site field vehicles and equipment for exploration activities only. Avoid unnecessary disturbance to nearby residents and wildlife.

Property Acquisition

1. Investigate and understand the current status of surface and mineral rights before you take action to acquire a property. Be familiar with those regulations and mining laws governing the acquisition of property as outlined in the *Ontario Mining Act*. Be familiar with the *Ontario Living Legacy Land Use Strategy* provisions for withdrawal from staking of lands intended for new parks and conservation reserves.
2. Be aware of all regulations and laws relating to environmental liabilities before you acquire a property that has been previously mined, explored and/or developed. Consider documenting the environmental condition of the property at the time of acquisition with field notes and photographs.
3. Avoid any misunderstanding with surface rights owners by discussing your presence and plans in the area with them once you have acquired mineral rights. Ascribe to the notification and compensation requirements of Sections 78 and 79 of the *Mining Act*. Maintain a cordial relationship with local residents and keep them informed during the course of your program.

Campsites

1. Be familiar with and comply with all statutes, regulations, amendments and permit requirements governing the

operation of campsites. A temporary encampment may be erected on a mining claim for the purpose of conducting mineral exploration activities. If the campsite is not located on a mining claim, the maximum allowable time for resident camping on crown land is 21 days.

2. Locate your campsite away from watercourses and maintain it in a neat and orderly fashion.
3. Provide sewage treatment facilities capable of servicing the resident and visiting camp population. Ensure that pit privies, conventional septic tank/tile bed systems, and packaged sewage treatment plants are designed, installed, and, where necessary, disposed of in accordance with local regulations. Consult with the local health unit for details.
4. Select and use products that pose the least threat to the environment. Re-use containers as much as possible and whenever appropriate. Ensure that all products, which are recyclable, are taken to a recycling facility.
5. Compost organic kitchen waste. Remove inorganic domestic waste to approved municipal sites, to an approved landfill for the camp, or to a recycling facility. In regions populated by bears, establish a special containment system for kitchen wastes.
6. Confine fuels, lube oils and greases during storage and transportation. Ensure that used oil facilities are established at all permanent sites and are regularly monitored. Collect and remove hazardous substances used in machinery (such as batteries) to designated disposal facilities.
7. Provide proper first aid and fire protection equipment at the camp and make sure that the equipment complies with current regulations.
8. Make every effort to avoid attracting wildlife to the camp.

9. At the end of operations, dismantle campsites that are to be abandoned. Leave campsites that are to be used for future operations in a clean and tidy condition. Bury organic waste and remove all other refuse from the site, taking advantage of recycling facilities as much as possible. Backfill all pits in accordance with local regulations. Where possible, rip up a site that is to be abandoned to break surface compaction and allow natural revegetation to take place.
10. Avoid impacting on natural heritage, recreational, fish and wildlife, tourism or forestry (e.g. plantation) values as defined by the Ontario MNR on EMA Values Maps, as supplied by the Resident Geologist Office, MNDRM.

Road Building and Access

1. Consult with your local MNR office and initiate Work Permit process for new road construction (requiring roadbed improvement). Be sensitive to the needs of other land users; for example, tourist lodges and resort operators. Trail construction for access to mineral exploration workings (no road bed improvement and under 3 metres in width) does not require a Work Permit.
2. Plan and locate roads and trails to maximum advantage for your operations but with minimum levels of construction and disturbance. Take advantage of landform and vegetation to screen road locations whenever possible. Avoid impacting on all values defined on EMA Values Maps supplied by the Ontario MNR (Appendix 1).
3. Clear right-of-way timber and debris in an orderly manner. Dispose of debris by a) burning, if permitted; b) burying in off-road push piles, if practicable or c) in a manner prescribed by local regulations. Whenever possible, stack commercial timber so that it can be harvested by pulp or timber companies. Consult with the

licensed forest operator in the area prior to constructing your road or trail.

4. Provide for erosion and surface water control by installing culverts, bridges, waterbars, and ditches, whenever necessary. Keep insloping to a minimum, and provide for frequent water diversions off the road when necessary. Remove all unnecessary berms from road edges.
5. Develop a reclamation plan following the detailed road construction guidelines and Work Permit requirements.
6. Avoid impacting on natural heritage, recreational, fish and wildlife, tourism or forestry (e.g. plantation) values as defined by the Ontario MNR on EMA Values Maps, as supplied by the Resident Geologist Office, MNDRM.

Geological, Geochemical and Geophysical Surveys

1. Avoid unnecessary brush cutting and blazing of trees while laying out grid lines. Cut grid lines at the minimum width possible.
2. Upon completion of a survey, remove any wire and other extraneous material that may endanger the lives of birds and other wildlife.
3. Avoid contaminating soil and water during the course of your work.
4. Avoid impacting on natural heritage, recreational, fish and wildlife, tourism or forestry (e.g. plantation) values as defined by the Ontario MNR on EMA Values Maps, as supplied by the Resident Geologist Office, MNDRM.

Trenching and Stripping

1. Avoid any disturbance to community watersheds, fisheries habitat, upwellings and spawning beds by familiarizing yourself with their location (Appendix 1). Do not operate vehicles or heavy equipment in streams or on stream or pond banks. Keep to a minimum any

clearing, grubbing, excavating or other surface disturbances near streams and ponds. If such activity is proposed, preserve a natural buffer zone of undisturbed natural vegetation at least 10 metres wide or wider at the water's edge to prevent siltation. If in doubt, contact your local MNR Biologist.

2. Clear timber and debris in an orderly manner. Dispose of debris by a) burning, if permitted; b) by burying it in off-road push piles, if practicable or c) in a manner prescribed by local regulation. Whenever possible, stack commercial timber so that it can be harvested by pulp or timber companies. Consult with the licensed forest operator in the area prior to constructing your road or trail.
3. Backfill, cover and revegetate all excavations and other surface disturbances that have not exposed reusable geological information such as outcrop. Avoid excessive stripping by using backhoes or excavators rather than bulldozers whenever possible.
4. If your proposed area of stripping exceeds an area 10,000m² or is within 100 metres of a waterbody and exceeds an area of 2,500m², you must file a closure plan under Part 7 of the Mining Act. Contact the Mineral Development Coordinator at the MNM.
5. Avoid impacting on natural heritage, recreational, fish and wildlife, tourism or forestry (e.g. plantation) values as defined by the Ontario MNR on EMA Values Maps, as supplied by the Resident Geologist Office, MNM.

Drilling

1. Ensure that drilling company workers under contract are aware of current environmental regulations and will comply with them in the course of their work. Clearly define all environmental and industrial hygiene responsibilities, duties and liabilities of the contractor in contractors' agreements.

2. Keep to a minimum any noise pollution produced by equipment.
3. Ensure that contractors avoid impacting on natural heritage, recreational, fish and wildlife, tourism or forestry (e.g. plantation) values as defined by the Ontario MNR on EMA Values Maps, as supplied by the Resident Geologist Office, MNM.
4. Locate drill sites and water lines in areas where access to them and their operation will create the least amount of disturbance. Take advantage of local landform and vegetation to screen drilling activities whenever possible.
5. Eliminate the need for elaborate access roads by using the smallest size of drilling equipment and drill holes that will ensure an adequate sampling of the target that you are seeking.
6. Ensure that proper receptacles for debris are provided and used at drill sites and that sites are cleaned up as soon as equipment has been removed.
7. Do not allow drilling wastes to run uncontrolled over land or ice surfaces or into watercourses. Recycle as much drilling mud and water as possible by using tanks or sumps.
8. Avoid wasting water by installing and using shut-off valves when water lines are not in use.
9. Use biodegradable materials whenever possible.
10. Keep on site oil-absorbent material and/or oil booms (depending on the amounts of fuel stored) for use in the event of a spill.
11. Upon completion of drilling, remove the drill casing and cap or plug the drill hole.

Abandonment of Exploration Activity

1. Outslope and remove all berms from roads no longer needed, and install appropriate water barriers and other erosion control structures. Remove

- culverts, low bridges and other structures that may cause blockage or unwanted diversion of watercourses.
2. Backfill and grade all open excavations such as exploration trenches, adits and shaft waste dumps as close to the original contour as possible. Grade to contour or smooth out drill sites, building sites, roads, or other major disturbances resulting from construction during the exploration program.
 3. Cap or plug drill holes and close or otherwise make safe from unauthorized entry, all tunnels, shafts and other openings. Make sure that procedures on site abandonment contained in Part 7 of the Mining Act have been correctly followed.
 6. Remove all trash and other foreign material from the exploration area and dispose of in an approved waste disposal site.
 7. Where possible and at the proper time of the year, revegetate all disturbed surface areas by planting trees which are suitable for the area. In addition or as an alternative, prepare the disturbed surfaces in a way that will encourage maximum natural revegetation.
 6. Inspect gates and fences used for access to ensure that they have not been damaged.
 7. When abandoning exploration sites in claim-staked areas close to settled areas, remove any physical evidence of work such as ribbons and pickets. Be aware that most jurisdictions do not allow staking posts or survey monuments to be removed.
 8. Advise local residents, landowners, native groups and government officials that you are abandoning the site.
 9. Avoid impacting on natural heritage, recreational, fish and wildlife, tourism or forestry (e.g. plantation) values as defined by the Ontario MNR on EMA Values Maps, as supplied by the Resident Geologist Office, MNM.
- (Modified after the Prospectors and Developers Association of Canada Guidelines for Exploration Practice, 1998)

APPENDIX 1

Area Of Concern (A.O.C) Guidelines For Fishery And Wildlife Values In Enhanced Management Areas (EMA)

A. AREA OF CONCERN DESCRIPTION – Lakes, Ponds, Rivers and Streams

DESCRIPTION

Description of value(s):

- Cold water, cool water and unknown fish habitat
- Water quality

For Fisheries/Water Quality Values:

Fish Species Present

- Coldwater species (e.g. lake trout, brook trout, rainbow trout, lake whitefish, lake herring, pacific salmon)
- Coolwater species (e.g. walleye, perch, northern pike, bass, sucker species, minnow species)

Critical Fish Habitat

Locations of critical habitat may be known or unknown.

Slope Of Shoreline Areas

Slopes may vary throughout individual A.O.C.s.

The width of the reserve will be slope dependent and will be applied as per the following criteria:

30 metre reserve - 0-15% Slope

50 metre reserve - 16-30% Slope
 70 metre reserve - 31-45% Slope
 90 metre reserve - >45% Slope
 90 metre reserve - Unknown Slope

Dimensions Of A.O.C

30-90 metre reserve as measured from the normal high water mark.

Locations(s):

Refer to NRVIS Values Map for relevant EMA.

PRESCRIPTION:

No mechanized mineral exploration is allowed within 30-90 metres of the water body depending on slope. Reserve width is measured from the high water mark.

Implementation Manual(s):

Timber Management Guidelines for the Protection of Fish Habitat. 1988. pp 1-3

Code of Practice for Timber Management Operations in Riparian Areas. 1991. pp 1-5

Environmental Guidelines for Access Roads and Water Crossings. 1988. pp 10-55

Monitoring Program:

Inspection of mineral exploration programs may occur.

B. AREA OF CONCERN DESCRIPTION – Stream Crossings

DESCRIPTION

Description of value(s):

- Cool water, cold water and unknown permanent and intermittent stream fish habitat
- Water quality

For Fisheries/Water Quality Values:

Fish Species Present

- Cool water species (e.g. walleye, perch, northern pike, bass, sucker species, minnow species)
- Cold water species (e.g. lake trout, brook trout, rainbow trout, lake whitefish, lake herring, pacific salmon)
- Unknown or unsurveyed waters will be assumed to have cold water species present

Critical Fish Habitat

Locations of critical habitat may be known or unknown.

Slope Of Shoreline Areas

Slopes may vary throughout individual A.O.C.s.

The width of the reserve will be slope dependent and will be applied as per the following criteria:

30 metre reserve - 0-15% Slope
 50 metre reserve - 16-30% Slope
 70 metre reserve - 31-45% Slope
 90 metre reserve - >45% Slope
 90 metre reserve - Unknown Slope

Dimensions Of A.O.C

Permanent streams will have 30-90 metre reserves depending on slope as measured from the normal high water mark.

Intermittent streams will have a 3 metre reserve.

In the field, a permanent stream is identified as having a natural defined channel without terrestrial vegetation in the streambed. Generally water flows throughout the year, although in dry, low water periods, flows may not be easily visible.

If the stream does not have a defined channel, or terrestrial vegetation is present in the streambed, the stream is intermittent.

Locations(s):

Stream crossings will require a site inspection by the MNR. Trails and roads will

be permitted to cross the streams at agreed to and mapped locations following consultation with the MNR. Refer to NRVIS Values Map for relevant EMA.

PRESCRIPTION

Permanent streams: No mechanical exploration activity is allowed within 30-90 metres depending on slope except for the purpose of crossing. Crossing location must be approved by the MNR.

Intermittent streams: No mechanical exploration activity is allowed within 3 metres of stream banks except for the purpose of crossing. Crossing location must be approved by the MNR.

All water crossings will be constructed in accordance with the MNR publication *“Environmental Guidelines for Access Roads and Water Crossings, 1988.”*

All crossing structures will have water openings equal to or greater than the size proposed in watershed calculations.

Use materials construction practices, mitigation techniques and monitoring at every water crossing in order to prevent harmful alteration, disruption or destruction of fish habitat or the impairment of water quality. The following conditions will be adhered to:

- No instream activities will occur between Sept 1 and June 15 in coldwater and unknown or unsurveyed streams
- No instream activities will occur between April 1 and June 15 in coolwater streams
- Fording (crossing through or driving through) of any stream will only occur for watercrossing construction purposes and only after joint site inspection by the Company and MNR
- All temporary winter crossings will be removed by April 1
- The right-of-way will be cleared to the minimum width needed for construction to a maximum width of 20 metres within 100 metres of the stream
- Grubbing and clearing of low vegetative cover within 100 metres of a water crossing will not occur unless absolutely necessary for construction and will only occur if effective erosion and sediment controls are in place
- Natural vegetation near water crossings will be retained as long as possible during construction
- Exposed mineral soil within 100 metres of the crossing must be graded to a stable repose (2:1 or flatter) and vegetated or otherwise protected from erosion so sediment will not enter the water after construction
- Materials removed or stockpiled during construction (e.g. grubbing, earth fills, earth cut materials) must be deposited in a manner so as to ensure that material does not enter any water body
- Drainage ditches will not normally discharge directly into waterways but will be diverted into the bush so the water filters through natural vegetation before entering the waterway
- Deleterious substances as defined in the *Canada Fisheries Act* must not be deposited in or allowed to enter any water body or water course
- All fill, in and around waterbodies will be earth free rock or clean, well-graded granular material. Where possible, in consultation with the local MNR biologist, appropriate sized materials will be chosen for use instream to improve fish habitat
- All culverts will be of sufficient length to support the road fill with stable side slopes
- If a washout occurs, the sediment is to be removed and the channel restored to its natural shape as soon as is practically possible. Requirements to remove downstream sediment not in the vicinity

of the crossing will be determined on a case by case basis

Every attempt will be made to mitigate the impacts of the crossing on fish habitat whenever possible:

- Avoiding removal, alteration or covering of substrates used for fish spawning, feeding, overwintering or nursery areas by:
 - selecting crossing locations in which sand, silt or clay substrates and aquatic vegetation is scarce or absent and by;
 - selecting structures that clearspan such as bridges or arched culverts, when crossing locations are in areas of riffles, cobbles or gravel substrate or aquatic vegetation is present. Maintaining fish passage by ensuring culverts are not perched when a culvert is chosen for a crossing
- Culverts will be installed a minimum of 10% below grade with a slope less than 0.5% and at least 20 cm of water in pipe during migration periods
- Maintaining water velocities through the pipe less than those outlined in the Roads Guidelines for various fish species and sizes
- Installing water crossings with proper erosion control techniques so the fill and ditch slopes are stable and the geomorphology of the watercourse is not altered through the chronic erosion of fill or through a washout

If any of the above four conditions are not satisfied, the crossing will be referred to the Federal Department of Fisheries and Oceans (DFO) for authorization.

To protect fish spawning areas, egg incubation and fry emergence periods in northwestern Ontario, no instream work is allowed between the dates indicated in the Table A.

(Source: OMNR, 1992. The problem of sediment in water for fish. Technical Note 21)

Implementation Manual(s):

Timber Management Guidelines for the Protection of Fish Habitat. 1988. pp 1-3

Code of Practice for Timber Management Operations in Riparian Areas. 1991. pp 1-5

Environmental Guidelines for Access Roads and Water Crossings. 1988. pp 10-55

Monitoring Program:

Inspection of mineral exploration operations may occur.

C. AREA OF CONCERN DESCRIPTION - Brook Trout Lakes, Streams and Adjacent Groundwater Recharge Zones

DESCRIPTION

Description of value(s):

- Brook trout lakes, streams and adjacent groundwater recharge zones

For Fisheries/Water Quality Values:

Fish Species Present

- Brook trout

Critical Fish Habitat

- Spawning area, groundwater recharge zones

Dimensions Of A.O.C

Variable depending on local conditions (soils, topography, location of groundwater discharge, slope). Special planning consideration outside the slope-based reserve.

Locations(s):

Refer to NRVIS Values Map for relevant EMA.

TABLE A: INSTREAM WORK TIMING RESTRICTIONS TO PROTECT NORTHWESTERN ONTARIO FISH SPECIES

SPRING SPAWNERS		FALL SPAWNERS	
SPECIES PRESENT	TIMING RESTRICTION	SPECIES PRESENT	TIMING RESTRICTION
Walleye	Apr.1 - June 15 Apr. 1 - June 20 (late spring)	Lake Trout	Sept. 1 - May 30 (north) Sept. 15 - May 15 (south)
Northern Pike	Apr.1 - June 15	Brook Trout	Sept. 1 - June 15
Sturgeon	May 1 - June 30	Pacific Salmon	Sept. 1 - June 15
Large/Smallmouth Bass	May 15 - July 15	Lake Whitefish	Sept 15 - May 30 (north) Oct. 1 - May 15 (south)
Rainbow Trout	Apr.1 - June 15	Lake Herring	Oct. 1 - May 30 (north) Oct. 15 - May 15 (south)
Unknown species (warmwater or coolwater** stream)	Apr.1 - June 15*	Unknown species (coolwater stream)	Sept. 1 - June 15

* Can be later than June 15 if stream is within sturgeon, muskellunge or bass range, or if a late spring occurs.

** Coolwater term as used in plan text. If it is unknown whether a stream is coolwater or coldwater or what species are present in it, then it should be assumed to be coldwater (Sept. 1 - June 15)

(Source: OMNR, 1992. The problem of sediment in water for fish. Technical Note 21)

PRESCRIPTION

Brook trout spawn over very localized groundwater discharge areas in lakes and streams. Road construction and soil compaction may disrupt the flow of groundwater in these cold water recharge zones. Any change of groundwater flows could cause a harmful alteration, disruption or destruction of brook trout spawning areas.

It is believed that impacts can be mitigated through timing and access planning considerations. This prescription will allow mineral exploration while ensuring the protection of these recharge areas. In an attempt to avoid any alteration in areas adjacent to brook trout lakes and streams, mineral exploration activities will be carefully planned to protect these groundwater recharge and discharge zones. Whenever possible the local biologist will use the best

information available to predict the location of these areas. (i.e. topographical maps and Northern Ontario Geological Engineering Terrain Study Maps or thermography).

All roads and permanent trails in this A.O.C will be carefully located so as to not intercept shallow groundwater flow to the brook trout waters. A site inspection by MNR local biologist will be required prior to approval. Special attention will be given to ensuring that adequate cross drainage is installed. Intermittent streams in these A.O.C.s flowing into permanent waterbodies with no settling basin between the area of mechanized activity (drilling, stripping, trenching) and the permanent waterbody shall receive 30 metre reserves.

All crossings of brook trout streams will require a site inspection by MNR prior to approval. Where culverts are approved for

use they will normally be required to be installed 20% below grade.

Monitoring Program:

Inspection of mineral exploration programs may occur.

D. AREA OF CONCERN DESCRIPTION - Heronries

DESCRIPTION

Description of value(s):

- Heronries

Dimensions Of A.O.C

- 1000 metre radius from most peripheral nests in colony

Locations(s):

Refer to NRVIS Values Map for relevant EMA.

PRESCRIPTION

0 to 300 metres from most peripheral nests in colony

- No mineral exploration activities will be allowed at any time

300 to 1000 metres [Heavy Development Zone (HDZ)]

- No mechanized mineral exploration or development will be permitted from April 1 to August 15

If the colony is not used for three years then it will be considered abandoned and the zoning restrictions will be removed.

Implementation Manual(s):

Management Guidelines for the Protection of Heronries in Ontario. 1984. pp 12-17

Monitoring Program:

Inspection of mineral exploration programs may occur.

E. AREA OF CONCERN DESCRIPTION - Moose Aquatic Feeding Area, Mineral Lick, Moose Calving Area

DESCRIPTION

Description of value(s):

- Moose aquatic feeding area
- Mineral lick
- Moose calving area

Dimensions Of A.O.C

- 120 metre reserve around calving areas, mineral licks and aquatic feeding areas
- Mineral licks and moose aquatic feeding area reserves will normally be measured from treed edge. "Treed edge" is considered to be any continuous stand of woody vegetation greater than 2 metres high. In locations where the feeding area is located greater than 120 metres from the treed edge (e.g. 120 metres of grassy vegetation exists between the waters edge and the treed edge) the reserve will be established on a case by case basis in consultation with the local MNR biologist

Locations(s):

Refer to NRVIS Values Map for relevant EMA.

PRESCRIPTION

No mechanized mineral exploration activity is allowed within 120 metres of aquatic feeding areas, mineral licks and calving sites.

Implementation Manual(s):

Timber Management Guidelines for the Protection of Moose Habitat. 1988. pp 8

Selected Wildlife and Habitat Features Inventory Manual. 1993

Environmental Guidelines for Access Roads and Water Crossings. 1988. pp 10-55

Monitoring Program:

Inspections of mineral exploration activities may occur.

F. AREA OF CONCERN DESCRIPTION - Moose Late Winter Habitat
DESCRIPTION**Description of value(s):**

- Moose late winter habitat

PRESCRIPTION

Variable with timing restrictions.

Locations(s):

Refer to NRVIS Values Map for relevant EMA.

Prescription:

Because of the lack of moose winter habitat in the Lake Nipigon Basin, normally mechanized mineral exploration activities will not occur during the winter season. Some mechanized mineral exploration activities may occur on a case by case basis.

Implementation Manual(s):

Timber Management Guidelines for the Protection of Moose Habitat. 1988. pp 8

Selected Wildlife and Habitat Features Inventory Manual. 1993.

Monitoring Program:

Inspection of mineral exploration activities may occur.

G. AREA OF CONCERN DESCRIPTION - Eagle Nests
DESCRIPTION**Description of value(s):**

- Eagle nests

Dimensions Of A.O.C

800 metre radius around nest.

Locations(s):

Refer to NRVIS Values Map for relevant EMA.

PRESCRIPTION

0 to 100 metre (Primary Zone)

- No mineral exploration activities will be permitted at any time

100 to 200 metre (Secondary Zone)

- No mineral exploration activities of any kind will be permitted between February 15 – June 30

- No mineral exploration activities that result in significant changes to landscape will be permitted at any time, (e.g. mechanized stripping as defined in Part VII of the *Mining Act*, road construction)

200 to 400 metre (Tertiary Zone)

- No mechanized mineral exploration activities will be permitted between March 15 – May 31
- No mineral exploration activities that result in significant changes to landscape will be permitted at any time, (e.g. mechanized stripping as defined in Part VII of the *Mining Act*, road construction)

400 to 800 metre (Tertiary Zone)

- Normally no mechanized mineral exploration will be allowed within 800 metres of the nest. However, where there is no direct line of site between the nest and proposed exploration, exploration may be conducted as close as 400 metres. The tertiary zone boundary in this case must be jointly established through a site inspection involving the company and MNR

If after five (5) years the nest has not been used by eagles and is not being maintained or used in any way by eagles, only retain the 0-100 metre primary zone.

Eagles generally nest in the supercanopy trees. If the tree supporting the nest is

burned, leave reserves in place at least through next breeding season and monitor for use. If the area is not used then retain the 0-100 metre primary zone.

If the tree supporting the nest blows down all boundaries can be removed.

If the nest structure disappears but the tree remains the buffer zones should remain in effect through at least the following three (3) breeding seasons.

Implementation Manual(s):

Bald Eagle Management Guidelines. 1987. pp 4-14

Monitoring Program:

Inspection of mineral exploration activities may occur.

H. AREA OF CONCERN DESCRIPTION - Osprey Nests

DESCRIPTION

Description of value(s):

- Osprey nests

Dimensions Of A.O.C

- 800 metre radius around nest

Locations(s):

Refer to NRVIS Values Map for relevant EMA.

PRESCRIPTION

0 to 200 metre [Absolute Buffer Zone (ABZ)]

- No mechanized mineral exploration activities will be permitted at any time

200 to 800 m [Heavy Development Buffer Zone (HDZ)]

- No stripping as defined in Part VII of the *Mining Act* or road construction will be permitted at any time

- No mechanized mineral exploration activity is permitted between April 15-September 1

If after three (3) years the nest has not been used then retain only ABZ (200 metre reserve).

If the nest blows down but the tree remains retain ABZ (200 metre reserve) for three (3) years.

If fire burns the tree or nest but the tree remains standing, retain HDZ for three (3) years.

Implementation Manual(s):

Management Guidelines and Recommendations for Osprey in Ontario. 1983. pp 9-12

Monitoring Program:

Inspection of mineral exploration activities may occur.

TABLE B: LICENSING, WOOD ALLOCATION AND MEASUREMENT

05 LICENSING, WOOD ALLOCATION AND MEASUREMENT			
FOREST RESOURCE LICENSING AND MINERAL EXPLORATION (INTERIM)		PROCEDURE	FOR 05 03 18
Division (s):	Forests	Status:	Draft
Branch (es):	Industry Relations	Date Approved:	Changes to April 11, 2001 version
Approved by:	Director, Industry Relations Branch	Last Modified:	
Contact:	Manager, Wood Allocation and Measurement Section	Sunset Date:	October 2001

APPENDIX 2

VARIOUS LEGISLATION AND REGULATIONS GOVERNING MINERAL EXPLORATION AND DEVELOPMENT ACTIVITIES AROUND SHORELINES, WATERS AND SURFACE RIGHTS IN ONTARIO

CROWN FOREST SUSTAINABILITY ACT, 1994 S.O. 1994, c. 25

BACKGROUND:

The purpose of this procedure is to provide guidance to Ministry staff responsible for:

- processing the issuance of forest resource licenses; and/or
- levying Crown charges for mineral exploration activities affecting Crown forests

The Crown Forest Sustainability Act (CFSA) is the provincial authority for determining forest management and forest resource licensing requirements on Ontario Crown lands.

The *Mining Act* determines requirements relative to the conditions under which an exploration company may cut Crown trees before conducting mineral exploration activities.

The CFSA provides authority for the Minister of Natural Resources to set prices to be charged for harvesting forest resources on Crown land. The Mining Act also has provisions for determining the prices to be charged, if any, for the trees cut on Crown land for mineral exploration purposes.

Given an environment where two pieces of legislation refer to opportunities to cut and pay Crown charges for trees, it is critical that forest resource licenses (FRL) are granted and that Crown charges are levied in a fair and consistent manner across the province. This procedure identifies how pricing of harvested trees is to be done.

OIC 993/95 provides for the Minister of Natural Resources to grant a forest resource licence for work on mining claims without a competitive process under s. 24 of the CFSA.

Although the mineral exploration industry does not usually contribute significantly to the harvest of Ontario's forests, occasionally exploration activities will result in the cutting of trees which are defined as being merchantable under the CFSA. While it is important for the Crown to receive a fair return for this timber, it is equally important for MNR staff to consider a pragmatic approach during the delivery of the Ministry's licensing and Crown charge collection procedures so as not to undermine other activities of the forest, such as mineral exploration.

DIRECTION:

FRLs should be granted to the mineral exploration industry and Crown charges collected for the forest resources (trees) that they harvest (cut) only when:

- Trees are harvested during construction of roads requiring work permits; or
- “*Advanced exploration*” is being performed

The *Mining Act* in subsection 139 (1) defines “*Advanced exploration*” as

“the excavation of an exploratory shaft, adit or decline, the extraction of prescribed material in excess of the prescribed quantity, whether the extraction involves the disturbance or movement of prescribed material located above or below the surface of the ground, the installation of a mill for test purposes or any other prescribed work.”

Ontario Regulation 240/00 gives further interpretation of what “*advanced exploration*” includes as follows:

3. (1) For the purposes of Part VII of the [Mining] Act and this Regulation, “*advanced exploration*” includes the following types of work:

1. Exploration carried out underground involving the construction of new mine workings or expanding the dimensions of existing mine workings.
2. Exploration involving the reopening of

underground mine workings by the removal of fixed or permanently fastened caps or bulkheads, or involving the excavation of backfilled shafts, raises, adits or portals.

3. Exploration that may alter, destroy, remove or impair any rehabilitation work done in accordance with Part VII of the Act or a filed closure plan.
4. Excavation of material in excess of 1,000 tonnes;
5. Surface stripping on any mining lands of an area in excess of 10,000 square metres or volume in excess of 10,000 cubic metres.
6. Surface stripping carried out on mining lands whose area is greater than 2,500 square metres or that produces a volume of material greater than 2,500 cubic metres, if any surface stripping is carried out within 100 metres of a body of water. O. Reg. 240/00, s. 3 (1).

(2) In the definition of “*advanced exploration*” in subsection (1),

“*material*” means rock, ore or any other substance excavated during the process of developing, mining, evaluating or testing any mineral or mineral deposit, but does not include excavated overburden;

“*surface stripping*” means the removal of overburden to expose bedrock or other material.

For FRL licensing purposes, “*advanced exploration*” is only where trees are to be cleared for stripping as follows:

- An area in excess of 10,000 square metres (one hectare), or
- An area greater than 2,500 square metres (0.25 hectares) if the clearing is to be carried out within 100 metres of a body of water

Further, in the event that either of the above situations applies, a FRL must be granted to authorize the harvest of Crown forest

resources and to collect Crown charges when:

- the timber removed is merchantable, as defined by the Scaling Manual under the CFSA

Disputes that might arise between the mineral exploration company and the MNR concerning the value or quantity of trees cut or used may be resolved by the Minister of Northern Development and Mines in accordance with Section 92(5) or 92(7) of the *Mining Act*,

and/or;

- the forest company holding a current licence (FRL or sustainable forest licence) for the area in which trees are proposed to be harvested does not want to carry out the harvesting themselves

Note: Despite the direction given above, the Minister of Natural Resources reserves the right to require a FRL to be in place and Crown charges to be paid in other cases where material to be harvested can be utilized by the forest industry. [This allows for licensing in such situations as when a grid of wide trails is to be cleared for machine access to do exploration and the wood being harvested can be marketed to the forest industry.]

Activities that are exempt from forest resource licensing requirements and Crown charges include those where incidental trees are cut or blazed for purposes such as: establishing survey lines or corner posts for mining claims, building trails to permit access of equipment or establishing soil pits. It is up to the District Manager to determine based on local circumstances, if the work is exempt from licensing requirements and Crown charges (e.g. when does a trail become a road). However it is the mineral exploration company's prerogative to use s. 92(5) or 92(7) of the *Mining Act* to resolve the dispute if the company believes the District Manager's decision is unfair (i.e. the dispute will be resolved by the Minister of Northern Development and Mines).

The mineral exploration company will be required to compensate the Crown for damages the mineral exploration company causes to trees or seedlings that have been

regenerated as a result of a silviculture prescription implemented in accordance with an approved FMP. Such compensation will be assessed by the District Manager who will take into consideration all costs associated with naturally or artificially re-establishing the regeneration to the standards to which it was growing when the damage took place. All compensation obtained by the Ministry in these situations (damage to regeneration) will be collected by the district and directed to the Ontario government Consolidated Revenue Fund. Note that there is no connection made to TREES or the Forest Renewal Trust in these situations.

Advanced exploration may include activities such as bulk sampling, stripping, trenching and establishing exploratory shafts. A closure (rehabilitation) plan is required under the *Mining Act* when advanced exploration work is carried out. The closure plan is filed with the Ministry of Northern Development and Mines and the MNR District may request a copy from the Exploration Company. Depending on the planned exploration activity and closure plan, the District may choose to include special conditions on the FRL to protect values in the area. In addition, District staff should review the closure plan before issuing a FRL and provide any comments to the Ministry of Northern Development and Mines.

PROCEDURE TO ENABLE A MINERAL EXPLORATION COMPANY TO HARVEST CROWN TREES:

Where the area proposed for a FRL for clearing is already licensed under a FRL or Sustainable Forest Licence (SFL) in accordance with an approved forest management plan (FMP):

- The FRL or SFL holder should be offered the opportunity to harvest the forest resources
- If the FRL or SFL holder agrees to harvest the forest resources, then that licensee will be assessed Crown charges for those forest resources that are harvested in accordance with the Ontario Stumpage Matrix

Where the FRL or SFL holder has harvested the forest resources and has been assessed the Crown charges for them, that licensee shall be compensated for the portion of the trees used for mining purposes by the mineral exploration company, in accordance with s. 92(6) of the *Mining Act*. Disputes that might arise between the mineral exploration company and the FRL or SFL holder concerning the value of trees harvested will be resolved by the Minister of Northern Development and Mines in accordance with s. 92(7) of the *Mining Act*. Section 92(7) of the *Mining Act* states: “Where a dispute arises between the recorded holder, owner or lessee and the timber licensee or permittee as to the value or quantity of the trees cut or used under subsection (6), the Minister shall determine the dispute and his or her decision is final.”,

- Where the FRL or SFL holder declines the opportunity to harvest the timber, an overlapping agreement is required and the FRL is to be issued to the mineral exploration company (or its contractor) in accordance with the procedures FOR 05 03 05 entitled “*Issuance of a Forest Resource Licence for Commercial Purposes under CFSA s. 27(1)*” and FOR 05 03 03 entitled “*Forest Resource Licenses on the Same Land*”
- The company or individual holding an SFL on the area where harvesting takes place must be offered the forest resources for use in facilities identified in section 3.1 or Appendix E of the SFL document. This may be addressed through a special condition on the licence

Where the area proposed for a FRL for clearing is NOT currently licensed under a FRL or SFL:

- Where an approved FMP has identified that the area may be harvested (i.e. it is allocated), a FRL may be issued to the exploration company in accordance with the procedure FOR 05 03 05 entitled “*Issuance of a Forest Resource Licence for Commercial Purposes under CFSA s. 27(1)*” or;

- Where the exploration activity is located within an area covered by a FMP but located outside of the areas allocated for harvesting in the approved FMP, a FRL may be issued to the exploration company subject to an exemption under s. 29(2) and 47 of the CFSA. Refer to the procedure FOR 05 03 14 entitled “*Exemptions from Requirements: Using CFSA section 29(2), 42(2) or 47*”, or;
- Where the exploration activity lies within an area on which there is no FMP, a FRL may be issued to the exploration company subject to an exemption under s. 47 of the CFSA. Refer to the procedure FOR 05 03 14 entitled “*Exemptions from Requirements: Using CFSA section 29(2), 42(2) or 47*”
- Where the proposed licence for clearing (harvesting) is proposed for an area where forest resources are committed to a forest resource processing facility, a condition must be included on the FRL directing the licensee to dispose of the wood in accordance with the terms of the commitment document

When a mineral exploration company is granted an FRL to harvest forest resources, that company will be responsible for paying all Crown charges that are levied on the forest resources on the area of that FRL in accordance with the Ontario Stumpage Matrix.

It is incumbent upon the Mineral Exploration Company to either utilize the commercially marketable Crown forest resources they harvest under a FRL or to sell the forest resources to a processing facility in Ontario. Where no condition or agreement is in place to the contrary, commercially marketable trees that are not utilized will be subject to compliance remedies in accordance with the CFSA.

Payment of Crown charges by the mineral exploration company in advance of the harvest should not be requested unless documentation on the client shows previous delinquency in payment of Crown charges anywhere in Ontario. The district should, however, inform the client of the estimated

amount of stumpage that would be anticipated using current rates and information that is available, such as: Forest Resources Inventory data, cruise information, etc. If the forest resources will not be scaled and the mineral exploration company intends to make one payment based on the estimated value of the forest resources, payment may be collected when the FRL is issued.

See procedure FOR 05 03 22 entitled “*Arrangements to Secure Payment of Crown Charges*” for other approaches to ensure payment of Crown charges.

Note: The internet Mining Claims Information website is managed by the Ministry of Northern Development and Mines and provides access to a database containing maps and information on all mining claims on nonpatented lands. The information is updated daily and would therefore be useful to update FMP mailing lists and to deliver on the Ministry’s responsibilities under para. 23.2 of the SFL which states: “*the Minister will advise all recorded and patented claim holders located within the proposed operating area...*”. See Procedure FOR 05 03 17 entitled “*Mining Claims*” for detailed notification requirements.

ENVIRONMENTAL PROTECTION ACT

R.S.O. 1990, c. E-19

1. (1) In this Act,

“*adverse effect*” means one or more of,

- (a) impairment of the quality of the natural environment for any use that can be made of it
- (b) injury or damage to property or to plant or animal life,
- (c) harm or material discomfort to any person
- (d) an adverse effect on the health of any person
- (e) impairment of the safety of any person
- (f) rendering any property or plant or animal life unfit for human use
- (g) loss of enjoyment of normal use of property, and
- (h) interference with the normal conduct of business

“*contaminant*” means any solid, liquid, gas, odor, heat, sound, vibration, radiation or combination of any of them resulting directly or indirectly from human activities that may cause an adverse effect;

“*spill*”, when used with reference to a pollutant, means a discharge,

- (a) into the natural environment
- (b) from or out of a structure, vehicle or other container, and
- (c) that is abnormal in quality or quantity in light of all the circumstances of the discharge

6. (1) No person shall discharge into the natural environment any contaminant, and no person responsible for a source of contaminant shall permit the discharge into the natural environment of any contaminant from the source of contaminant, in an amount, concentration or level in excess of

that prescribed by the regulations.

13. (1) Every person,

- (a) who discharges into the natural environment; or
- (b) who is the person responsible for a source of contaminant that discharges into the natural environment, any contaminant in an amount, concentration or level in excess of that prescribed by the regulations shall forthwith notify the Ministry of the discharge.

Exception

(2) Subsection (1) does not apply to animal wastes disposed of in accordance with normal farming practices. R.S.O. 1990, c. E.19, s. 13.

Prohibition

14. (1) Despite any other provision of this Act or the regulations, no person shall discharge a contaminant or cause or permit the discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect.

Extent of liability

99 (8) Where two or more persons are liable to pay compensation under this section, they are jointly and severally liable to the person suffering the loss, damage, cost or expense but as between themselves, in the absence of an express or implied contract, each is liable to make contribution to and indemnify the other in accordance with the following principles:

- 1 Where two or more persons are liable to pay compensation under this section and one or more of them caused or contributed to the loss, damage, cost or expense by fault or negligence, such one or more of them shall make contribution to and indemnify,
 - i. where one person is found at fault or negligent, any other person liable to pay compensation under this section, and
 - ii. where two or more persons are found at fault or negligent, each other and any

other person liable to pay compensation under this section in the degree in which each of such two or more persons caused or contributed to the loss, damage, cost or expense by fault or negligence.

- 2 For the purpose of subparagraph ii of paragraph 1, if it is not practicable to determine the respective degrees in which the fault or negligence of two or more persons liable to pay compensation under this section caused or contributed to the loss, damage, cost or expense, such two or more persons shall be deemed to be equally at fault or negligent.
- 3 Where no person liable to pay compensation under this section caused or contributed to the loss, damage, cost or expense by fault or negligence, each of the persons liable to pay compensation is liable to make contribution to and indemnify each other in such degree as is determined to be just and equitable in the circumstances.

FISHERIES ACT (FEDERAL)

FISH HABITAT MANAGEMENT BRANCH (FISHERIES ACT)

Exploration activities resulting in sediment deposition on or near a shoreline or construction of mine plant infrastructure could result in a harmful alteration of fish habitat, as defined in the *Fisheries Act*. In the event of shoreline modification resulting in fish habitat loss, a Fish Habitat Compensation Agreement would have to be negotiated with DFO (“no net loss” principle). The Fish Habitat Compensation Agreement constitutes an authorization from a federal agency and represents a trigger for a possible review under the *Canadian Environmental Assessment Act*.

LAKES AND RIVERS IMPROVEMENT ACT

R.S.O. 1990, c. L-3

Purposes of Act

2. The purposes of this Act are to provide for,

- (a) the management, protection, preservation and use of the waters of the lakes and rivers of Ontario and the land under them;
- (b) the protection and equitable exercise of public rights in or over the waters of the lakes and rivers of Ontario;
- (c) the protection of the interests of riparian owners;
- (d) the management, perpetuation and use of the fish, wildlife and other natural resources dependent on the lakes and rivers;
- (e) the protection of the natural amenities of the lakes and rivers and their shores and banks; and
- (f) the protection of persons and of property by ensuring that dams are suitably located, constructed, operated

and maintained and are of an appropriate nature with regard to the purposes of clauses (a) to (e). 1998, c.18, Sched. I, s. 23.

MINING ACT

R.S.O. 1990, c. M-14

30. (1) No mining claim shall be staked out or recorded on any land,

- (a) that, without reservation of the minerals, has been sold, located, leased or included in a licence of occupation; or
- (b) for which an application brought in good faith is pending in the Ministry of Natural Resources under the *Public Lands Act* or any other Act, and in which the applicant may acquire the minerals that are included in the application; or

39. (1) Where the Minister certifies that land is suitable for disposition for agricultural purposes, a mining claim staked thereon does not give the staker any right, title or interest in or to the surface rights. R.S.O. 1990, c. M.14, s. 39 (1).

Where surface rights necessary for mining operations

(2) Where surface rights on any such land are necessary to the carrying on of mining operations, the Minister may determine the part of the surface rights so required and, if not previously disposed of, may sell or award the surface rights or such part thereof to the claim holder as the Minister considers essential to the efficient carrying on of mining operations, and he or she may require the claim holder to have such surveys made at the expense of the claim holder as he or she considers proper. R.S.O. 1990, c. M.14, s. 39 (2).

Crown reservation

40. (1) Where a mining claim includes land covered with water or bordering on water, the surface rights over a width of no more than 120 metres from the high water mark may be

reserved for the Crown. 1999, c. 12, Sched. O, s. 15.

(2) Where a highway or road constructed or maintained by the Ministry of Transportation crosses a mining claim, the surface rights over a width of no more than 90 metres, measured from the outside limits of the right of way of the highway or road along both sides of the highway or road, may be reserved for the Crown. 1999, c. 12, Sched. O, s. 15.

Application of Crown reservation to unpatented mining claims

(3) The reservations of surface rights authorized by subsections (1) and (2) shall be deemed to apply to and to have been made on all unpatented mining claims unless such reservation or reservations are waived by the Minister. R.S.O. 1990, c. M.14, s. 40 (3).

- (c) where the surface rights have been subdivided, surveyed, sold or otherwise disposed of by the Ministry of Natural Resources for summer resort purposes, except where the Minister certifies in writing that in his or her opinion discovery of valuable mineral in place has been made; or
- (d) where the Minister or the Minister of Transportation certifies that land is required for the development of water power or for a highway or for some other purpose in the public interest and the Minister is satisfied that a discovery of mineral in place has not been made thereon; or
- (e) in an Indian reserve, except as provided by *The Indian Lands Act*, 1924; or
- (f) while proceedings in respect thereto are pending before the Commissioner or a recorder or until those proceedings are finally determined; or
- (g) until the proceeding has been finally determined, in the case of a proceeding that the Commissioner certifies is pending in a court in respect of the land. R.S.O. 1990, c. M.14, s. 30; 1994, c. 27, s.

134 (1); 2000, c. 26, Sched. M, s. 3 (1, 2).

Rights in claim

50. (1) The staking out or the filing of an application for or the recording of a mining claim, or the acquisition of any right or interest in a mining claim by any person or all or any of such acts, does not confer upon that person,

- (a) any right, title, interest or claim in or to the mining claim other than the right to proceed as is in this Act provided to perform the prescribed assessment work or to obtain a lease from the Crown and, prior to the performance, filing and approval of the first prescribed unit of assessment work, the person is merely a licensee of the Crown and after that period and until he or she obtains a lease the person is a tenant at will of the Crown in respect of the mining claim; or
- (b) any right to take, remove or otherwise dispose of any minerals found in, upon or under the mining claim. R.S.O. 1990, c. M.14, s. 50 (1).

Surface rights

(2) The holder of a mining claim does not have any right, title or claim to the surface rights of the claim other than the right to enter upon, use and occupy such part or parts thereof as are necessary for the purpose of prospecting and the efficient exploration, development and operation of the mines, minerals and mining rights therein. R.S.O. 1990, c. M.14, s. 50 (2).

Taxation

(3) The holder of an unpatented mining claim is not liable to assessment or taxation for municipal or school purposes in respect of such unpatented mining claim. R.S.O. 1990, c. M.14, s. 50 (3).

Same

(4) The holder of a licence of occupation issued under this Act or any predecessor Act is

not liable to assessment or taxation for municipal or school purposes in respect to the licence except with respect to improvements for which the holder would be liable to assessment or taxation if the lands were held under a patent. 1999, c. 12, Sched. O, s. 22.

Surface rights on unpatented mining claim

51. (1) Except as in this Act is otherwise provided, the holder of an unpatented mining claim has the right prior to any subsequent right to the user of the surface rights for prospecting and the efficient exploration, development and operation of the mines, minerals and mining rights. R.S.O. 1990, c. M.14, s. 51 (1).

Disposition of surface rights

(2) Where the holder of an unpatented mining claim consents to the disposition of surface rights under the Public Lands Act, the recorder shall make an entry on the record of the claim respecting the consent, and thereupon the surface rights may be dealt with as provided in the Public Lands Act. R.S.O. 1990, c. M.14, s. 51 (2).

Survey of surface rights

(3) Where the holder of an unpatented mining claim consents to the disposition of surface rights under subsection (2), the Minister may require a survey of such surface rights, and the survey shall be provided at the expense of the person who has acquired the surface rights. R.S.O. 1990, c. M.14, s. 51 (3).

Where holder does not consent to disposition of surface rights

(4) Where an application is made for disposition under the *Public Lands Act* of surface rights on an unpatented mining claim and the holder of the unpatented mining claim does not consent to the disposition and provision for the reservation or exclusion of the surface rights is not otherwise provided for in this Act or any other Act, the Minister may refer the application to the Commissioner. R.S.O. 1990, c. M.14, s. 51 (4).

Where application referred to Commissioner

(5) Where an application under subsection (4) is referred to the Commissioner, he or she shall, upon giving all interested persons at least ninety days' notice and after hearing such interested persons as appear, make an order based on the merits of the application. R.S.O. 1990, c. M.14, s. 51 (5).

Where surface rights required for public use

(6) Where surface rights on an unpatented mining claim are required for the use of the Crown or other public use, this section applies with necessary modifications. R.S.O. 1990, c. M.14, s. 51 (6).

SURFACE RIGHTS COMPENSATION

Notice of intention to perform assessment work

78. (1) A holder of a mining claim who first proposes to do ground assessment work on all or part of the land comprising a mining claim shall give notice of that intention in the prescribed form to the owner, if any, of the surface rights of the part of the land to be affected by the work. 1996, c. 1, Sched. O, s. 21.

Entry on land to perform work

(2) A person who has given notice under this section may enter on the land and perform the work at any time immediately following the day the notice is given. R.S.O. 1990, c. M.14, s. 78 (2).

Where work not to be recorded

(3) A recorder shall not record ground assessment work referred to in subsection (1) unless,

- (a) the holder files with the recorder the following evidence establishing that the holder gave the required notice: a certificate in the prescribed form and all further evidence that the recorder may require;

- (b) the recorder determines that it is not feasible in the circumstances to give notice to the owner of the surface rights; or
- (c) the owner of the surface rights gives written consent to the performance of the work after it has been performed. 1996, c. 1, Sched. O, s. 21; 1999, c. 12, Sched. O, s. 34; 2000, c. 26, Sched. M, s. 11.

Definition

79. (1) In this section and in section 78,

“owner of the surface rights” means a person to whom the surface rights of land have been granted, sold, leased or located. R.S.O. 1990, c. M.14, s. 79 (1).

Right of owner of surface rights to compensation

(2) Where there is an owner of surface rights of land or where land is occupied by a person who has made improvements thereon that, in the opinion of the Minister, entitles that person to compensation, a person who,

- (a) prospects, stakes out or causes to be staked out a mining claim or an area of land for a boring permit;
- (b) formerly held a mining claim or an area of land for a boring permit that has been cancelled, abandoned or forfeited;
- (c) is the holder of a mining claim or an area of land for a boring permit and who performs assessment work; or
- (d) is the lessee or owner of mining lands and who carries on mining operations, on such land, shall compensate the owner of the surface rights or the occupant of the lands, as the case may be, for damages sustained to the surface rights by such prospecting, staking out, assessment work or operations. R.S.O. 1990, c. M.14, s. 79 (2).

Right of holder of mining claim, etc., to compensation

(3) Every person who damages mineral exploration workings or claim posts, line posts, tags or surveyed boundary markers delineating mining lands shall compensate the holder of the mining claim or the owner or lessee of the mining lands, as the case may be, for damages sustained. R.S.O. 1990, c. M.14, s. 79 (3).

Determination of compensation by Commissioner

(4) In default of agreement and upon application made in the prescribed form by either party, the amount and the time and manner of payment of compensation under subsection (2) or (3) shall be determined by the Commissioner after a hearing and, subject to appeal to the Divisional Court where the amount claimed exceeds \$1,000, the Commissioner's order is final. R.S.O. 1990, c. M.14, s. 79 (4).

Prohibiting work pending settlement

(5) The Commissioner may order the giving of security for payment of the compensation and may prohibit, pending the determination of the proceeding or until the compensation is paid or secured, further prospecting, staking out or working by any person. R.S.O. 1990, c. M.14, s. 79 (5).

Lien for compensation

(6) The compensation is a special lien upon any mining claim or mining lands, as the case may be, and no further prospecting, staking out or performing of work, except by leave of the Commissioner, shall be done by any person after the time fixed for the payment or securing of the compensation, unless the compensation has been paid or secured as directed. R.S.O. 1990, c. M.14, s. 79 (6).

Power of Commissioner to vary, etc., order

(7) The Commissioner, on notice to all interested parties and for good cause shown, on such terms as seem just, may by subsequent order or award at any time

change, supplement, alter, vary or rescind any order made under this section. R.S.O. 1990, c. M.14, s. 79 (7).

Priorities

(8) In a hearing under subsection (4), the Commissioner shall take into account which of the rights was applied for first and, except where injustice would result, shall give the holder of those rights due priority in the consideration of the dispute between the parties. R.S.O. 1990, c. M.14, s. 79 (8).

Filing of agreement or order in office of recorder

(9) Where unpatented mining claims are affected by an agreement entered into in respect of the compensation referred to in subsection (2), or by an order made under subsection (4), the agreement or a certified copy of the order, as the case may be, may be filed by the person to whom the compensation is payable in the office of the recorder upon payment of the required fee. R.S.O. 1990, c. M.14, s. 79 (9); 1997, c. 40, s. 7.

Registration of order or agreement

(10) Where an unpatented mining claim is subsequently leased, the Minister shall cause any agreement or order filed in the recorder's office under subsection (9) that affects the leased lands to be registered against the lands in the proper land registry office and the person to whom the compensation is payable is entitled to enforce the terms of the agreement or order against the lessee and, subject to the Registry Act and the Land Titles Act, against any subsequent lessee of the land. R.S.O. 1990, c. M.14, s. 79 (10).

86. (1) Every lease issued under this Act shall contain the following reservations or provisions:

Reservation for roads

1 Provided that nothing whatsoever herein contained shall prevent or interfere with the free user of any public or traveled road or highway crossing the hereinbefore-described

premises.

Reservation for power, petroleum, etc.

2 Reserving unto Us, Our Heirs and Successors such use of the land hereby demised for all such works as may be necessary for the development of water power and the development, transmission and distribution of electrical power, natural gas, petroleum and petroleum products, including the construction, maintenance and operation of roads, railroads, transmission lines and stations, flumes, pipelines, dams, power houses and other works and structures without any liability by Us to the Lessee.

Reservation for railways

3 Reserving the right to grant without compensation to any person or corporation the right-of-way necessary for the construction and operation of one or more railways over or across the lands herein leased without let or hindrance from the Lessee where such railway or railways shall not manifestly or materially interfere with the mining operations carried on upon the said premises.

Reservation for navigable waters

4 Saving, Excepting and Reserving unto Us, Our Heirs and Successors the free use, passage and enjoyment of, in, over and upon all navigable waters which shall or may hereafter be found on or under or to be flowing through or upon any part of the said parcel or tract of land hereby demised as aforesaid and reserving also right of access to the shores of all rivers, streams and lakes for all vessels, boats and persons, together with the right to use so much of the banks thereof not exceeding one chain in depth from the high-water mark as may be necessary for fishery or public purposes.

Provided that, should the premises herein described or any part thereof be covered by navigable waters, this lease shall be subject to the provisions of the *Navigable Waters Protection Act* (Canada), the *Beds of*

Navigable Waters Act and the Lakes and Rivers Improvement Act.

Reservation for fishing

5 Provided that nothing herein contained shall in any manner restrict fishing or fishing rights in any navigable waters covering the premises hereby demised and that the Lessee shall not do any act resulting in damage to fishing or the fishing industry in the waters or to nets or other appliances used in fishing in the waters.

Reservation for land under navigable waters

6 Provided that these presents shall not vest in the Lessee any right, claim or title to the land under navigable waters which may be included within the limits of the herein described premises, but the Lessee shall have the exclusive right to extract the minerals therefrom during the term of these presents. R.S.O. 1990, c. M.14, s. 86 (1).

Holder, etc., of mining rights not to cut trees

92 (8) This section does not confer upon the recorded holder, owner or lessee of the mining rights any right to cut trees upon the lands on which the holder, owner or lessee has staked or acquired only the mining rights. R.S.O. 1990, c. M.14, s. 92 (8).

Rehabilitation Of Mining Lands (Part VII)

Definitions

139. (1) In this Part,

“advanced exploration” means the excavation of an exploratory shaft, adit or decline, the extraction of prescribed material in excess of the prescribed quantity, whether the extraction involves the disturbance or movement of prescribed material located above or below the surface of the ground, the installation of a mill for test purposes or any other prescribed work;

“adverse effect” means,

- (a) injury or damage to property,
- (b) harm or material discomfort to any person,
- (c) a detrimental effect on any person's health,
- (d) impairment of any person's safety,
- (e) a severe detrimental effect on the environment;

“closed out” means that the final stage of closure has been reached and that all the requirements of a closure plan have been complied with;

“closure” means the temporary suspension, inactivity or close out of advanced exploration, mining or mine production;

“closure plan” means a plan to rehabilitate a site or mine hazard that has been prepared in the prescribed manner and filed in accordance with this Act and that includes provision in the prescribed manner of financial assurance to the Crown for the performance of the closure plan requirements;

“protective measures” means steps taken in accordance with the prescribed standards to protect public health and safety, property and the environment;

“rehabilitate” means measures, including protective measures, taken in accordance with the prescribed standards to treat a site or mine hazard so that the use or condition of the site,

- (a) is restored to its former use or condition, or
- (b) is made suitable for a use that the Director sees fit

APPENDIX E: CLIMBERS' CODE OF CONDUCT

Each cliff is composed of three distinct cliff communities, including the base, the face and the edge. Each of these communities is sensitive to disturbance. Both rock and ice climbing activities may impact and degrade the cliff habitat of the flora and fauna of the area. Detrimental effects include the removal of lichens, mosses and other hydrophilic plants, and the possible disturbance of wildlife populations and habitats (i.e. nesting sites) around climbing sites. Other practices that threaten these communities include trampling and/or removal of vegetation, pruning trees, disturbance of boulders, and excessive trail development.

The following is a suggested list of recommendations for rock (and where applicable ice) climbers to follow to reduce their impact on the sensitive cliff communities within the Lake Nipigon Basin. Adherence to these guidelines will ensure that climbing activities have a minimal impact on the Lake Nipigon Basin cliff ecosystems. Management action, in consultation with the climbing community, will be undertaken should it be determined that climbing activity in the Pijitiwabik Palisades is negatively impacting the earth and life sciences for which this area was set aside.

1. Obey any climbing site closures or seasonal restrictions of climbing sites as determined by the OMNR.
2. Do not litter. Pack out your garbage, as well as garbage left behind by others.
3. Be courteous to the residents and user groups (hikers, tourists, mountain bikers, dog walkers, birders, etc.) in the area.
4. Avoid unnecessary/excessive noise.
5. Minimize disturbance of plants both at the cliff base and cliff edge as well as on the rock face. Avoid standing, sitting, placing packs or flaking your rope on the sensitive vegetation.
6. Avoid excess pruning of trees.
7. Avoid walking on exposed tree roots.
8. When using trees as anchors, padding is encouraged (i.e. canvas, carpet, towels, etc.).
9. Minimize disturbance of rocks in the talus slope.
10. Anything left on the cliff face should be as discrete as possible. Climbers are encouraged to paint bolt hangers to match the color of the rocks

LAKE NIPIGON BASIN SIGNATURE SITE