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Cover photo by Janice Barry

April, 2003

Dear Sir/ Madam:

Ontario Parks is preparing a management plan for Sleeping Giant Provincial Park. As part of the planning process, I am pleased to present the **Sleeping Giant Background Information**.

This document contains information about the park's natural features. Preliminary identification of issues is also summarized.

I invite you to review and comment on this document. All comments will become part of the public record for the duration of the planning process. Comments will be made available for public review upon request, unless privacy is requested, pursuant to the *Freedom of Information and Protection of Privacy Act*. If you require that your name not be made public, please indicate this in your response. Remarks or requests for additional information should be submitted to the attention of:

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Your comments will be carefully considered during the preparation of the Preliminary Park Management Plan.

Yours truly,

Tim P. Sullivan
Manager
Ontario Parks
Northwest Zone

Sleeping Giant Background Information

Table of Contents

| | | |
|-------|---|-----------|
| 1.0 | Introduction | 3 |
| 2.0 | Background Information | 4 |
| | <i>Overview</i> | |
| | <i>Population Centres</i> | |
| | <i>Access/Transportation Routes</i> | |
| | <i>Tenure, Land Use and Existing Park Development</i> | |
| 3.0 | Inventory and Evaluation of Natural Resources | 11 |
| 3.1 | Climate | 11 |
| 3.2 | Earth Science Features | 11 |
| | <i>Topography</i> | |
| | <i>Geology</i> | |
| | <i>Bedrock Morphology</i> | |
| | <i>Geomorphology</i> | |
| | <i>Economic Geology</i> | |
| 3.2.1 | Planning Considerations | |
| 17 | | |
| | <i>Soils and Moisture Regimes</i> | |
| | <i>Hydrology</i> | |
| 3.3 | Life Science Features | 18 |
| | <i>Vegetation Overview</i> | |
| | <i>Vegetation History</i> | |
| | <i>Vegetation Communities</i> | |
| 3.3.1 | Planning Considerations | 23 |
| | <i>Wildlife</i> | |
| 3.3.2 | Planning Considerations | 26 |
| 4.0 | Inventory and Evaluation of Cultural Resources | 26 |
| | <i>Interpretive Assessment and Themes</i> | |
| 4.1 | Planning Considerations | 27 |
| 5.0 | Recreation Inventory and Assessment | 28 |
| | <i>Camping</i> | |
| | <i>Hiking</i> | |
| | <i>Mountain Biking</i> | |
| | <i>Winter Activities</i> | |
| | <i>Water Sports</i> | |
| | <i>Nature Activities</i> | |
| | <i>Viewing</i> | |
| | <i>Fishing</i> | |
| | <i>Rock Climbing</i> | |
| 5.1 | Planning Considerations | 30 |
| 6.0 | Market Analysis | 31 |
| | <i>Park Use</i> | |
| | <i>Day Use</i> | |
| | <i>Car Camping</i> | |
| | <i>Great Lakes Heritage Coast Signature Site</i> | |
| | <i>Proposed National Marine Conservation Area</i> | |
| 6.1 | Planning Considerations | 32 |
| 7.0 | Classification and Zoning | 32 |
| | Wilderness | |
| | Nature Reserve | |
| | Historical | |
| | Natural Environment | |
| | Development | |
| | Access | |
| 7.1 | Planning Considerations | 35 |
| 8.0 | Planning Issues Identified to Date | 35 |
| 9.0 | References | 39 |

Sleeping Giant Background Information

Tables and Figures

| | | |
|------------|--|-----------|
| Table 1 | Profiles of Select Communities 1996 Canada Census | 5 |
| Table 2 | Services offered within the vicinity of Sleeping Giant Provincial Park | 5 |
| Table 3 | Orchid Species | 22 |
| Table 4 | Disjunct Species | 23 |
| Table 5 | Park User Data | 31 |
| Table 6 | Review of 1988 Park Management Plan Implementation Priorities | |
| 37 | | |
| Table 7 | Park Management Overview – Park Improvements | 38 |
| Figure 1 | Regional Setting | 4 |
| Figure 2 | Adjacent Land Use | 6 |
| Figure 3A | Existing Development | 8 |
| Figure 3B | Existing Development – Marie Louise Lake | 9 |
| Figure 4 | Physiography | 12 |
| Figure 5 | Bedrock Geology | 14 |
| Figure 6 | Geomorphology | 16 |
| Figure 7A | Vegetation History | 18 |
| Figure 7 | Vegetation | 20 |
| Figure 8 A | Existing Park Zoning | 34 |

Sleeping Giant Background Information

1.0 INTRODUCTION

What is a Park Management Plan?

The park management plan is the document that identifies the contributions that an individual park makes to the achievement of the four park system objectives (protection, heritage appreciation, recreation and tourism). No plan is undertaken with a “blank slate”. There are a variety of givens – management policies that apply to the entire park system, dealing with topics like park classification, zoning or permitted uses. Conversely, the plan will also contain policies that reflect specific resources and management needs of the park.

A management plan for Sleeping Giant was completed in 1988. It describes Sleeping Giant’s contributions to the provincial park system, and identifies a series of policies intended to maintain or improve these contributions. Current policy directs that plans will be written for twenty years, with scheduled reviews at least once every ten years. The scheduled review of Sleeping Giant is overdue. Over the next several months, Ontario Parks will be leading the review of the park management plan with the purpose of developing a new plan, which will continue to ensure the sustainable management of the park’s resources in the years to come.

The Plan Review Process

Plan reviews are undertaken to ensure the continued relevance of the content of the original plan. Reviews entail the re-assessment of all aspects of the original plan including objectives, zoning, resource stewardship, development and operations. Topics to be addressed include:

- Confirmation of the role, significance and classification of Sleeping Giant Provincial Park within the provincial parks system and as part of Ontario’s Living Legacy Great Lakes Heritage Coast and the proposed National Marine Conservation Area.
- Confirmation of existing zones and the delineation of zones to ensure the protection, planning, development and management of the park’s natural, cultural and recreational resources.
- Planning, management and development policies that protect the environment and are responsive to public interests.
- Guidance for the preparation of subsequent plans required to implement park policies and to achieve program objectives.
- A rationale and priorities for the funding of capital development and park operations.

- A record of public consultation and input into the planning process.
- A basis for the ongoing monitoring of the development and management of Sleeping Giant Provincial Park.

In 1994, the Ministry of Natural Resources (MNR) finalized its Statement of Environmental Values (SEV) under the Environmental Bill of Rights (EBR). The SEV is a document that describes how the purposes of the EBR are to be considered whenever decisions that might significantly affect the environment are made in the Ministry. During the management planning process for Sleeping Giant Provincial Park, the MNR considers its Statement of Environmental Values. This plan is intended to reflect the direction set out in the SEV and to further the objectives of managing our resources on a sustainable basis.

In conjunction with opportunities for public involvement in the planning process, notices will be posted on the EBR Electronic Registry for 45 days for each phase of planning. Significant milestones in the schedule for the review process are:

| | |
|---|-------------|
| Opportunity to Review the Background Information | Spring 2003 |
| Opportunity to Review Issues and Options | Spring 2003 |
| Opportunity to Review the Preliminary Management Plan | Autumn 2003 |
| Opportunity to Inspect the Approved Management Plan | Winter 2004 |

We invite everyone with an interest in the future of Sleeping Giant Provincial Park to get involved in the planning process.

Public notices will be provided through local media for each stage of the planning process. For additional information contact:

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Sleeping Giant Provincial Park
RR # 1
Pass Lake, Ontario
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Phone (807) 977-2526

Sleeping Giant Background Information

2.0 BACKGROUND INFORMATION

Overview

Sleeping Giant Provincial Park is classified as a Natural Environment Park and is 24,391 hectares in size. It was established as Sibley Provincial Park in 1944, regulated in 1950 (O. Reg. 4/50) and renamed Sleeping Giant Provincial Park in 1988. The park includes 2400 hectares of the bed of Lake Superior, since its boundaries extend out 400 metres from the shoreline, except:

- in the vicinity of Thunder Cape,
- the section of shoreline from Tee Harbour to the mid-point of Middlebrun Bay, and
- the area around Middlebrun Island.

Legends abound since part of this rugged peninsula near Thunder Bay resembles a sleeping giant. For 9,000 years First Nations' peoples fished and hunted this rolling, forested terrain dotted with lakes.

The discovery of silver in the mid-1800s led to the development of the Silver Islet Mine, at that time the world's richest silver mine. The community of Silver Islet still exists as a seasonal community.

Sleeping Giant Provincial Park occupies most of the Sibley Peninsula. The park's eastern lowlands rise gently from Lake Superior, while the western shore is dominated by rugged topography that includes sheer cliffs, deep valleys, and the distinctive mesa-cuestas that form the Sleeping Giant. This varied terrain and the effect of Lake Superior on the park's microclimates provide a variety of habitats for a great diversity of plants including rare orchids and alpine arctic disjuncts. The park is home to wolf, lynx, and bear, as well as moose and white-tailed deer. More than 190 species of birds have been recorded at Sleeping Giant.

Sleeping Giant Provincial Park is considered a destination park because it attracts visitors seeking outstanding hiking, viewing and nature interpretation opportunities. The park also offers visitors opportunities for cross-country skiing, as well as car and interior camping, picnicking, sea kayaking, boating and swimming. The park boundary extends 400 meters into Lake Superior to control access to the park, provide harbours of refuge for boaters and to protect shoreline features.

Sleeping Giant is part of Ontario's Living Legacy's (OLL) Great Lakes Heritage Coast Signature site. The park is also located adjacent to Parks Canada's proposed National Marine Conservation Area.

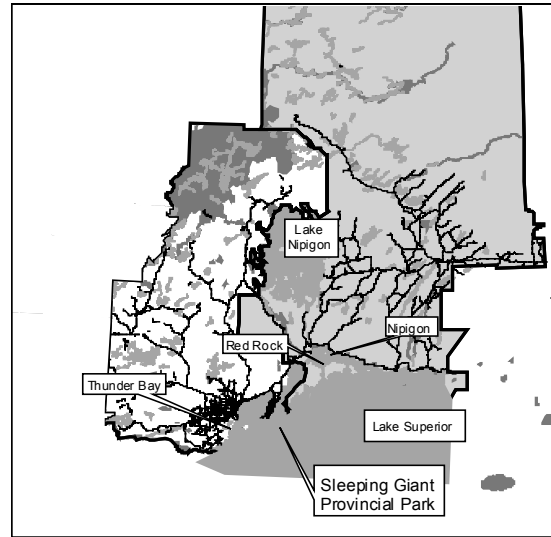


Figure 1: Regional Setting

Population Centers

Sleeping Giant is located approximately 40 kilometers east of the city of Thunder Bay (population 109,016 in 2001). The Fort William First Nation borders the city of Thunder Bay to the south. The community of Pass Lake abuts the northern park boundary. Silver Islet, a predominately seasonal community on Lake Superior, is a park neighbour to the southwest. Nearby communities to the east on the Trans-Canada Highway (11/17), include Dorion, Red Rock and Nipigon.

Thunder Bay is the largest urban centre in Northwestern Ontario. The city lies at the Canadian Lakehead on Lake Superior and is strategically situated at the geographical centre (east-west) of Canada. As a regional centre for industry, shopping, services, recreation and educational opportunities, the city has transportation services by both major Canadian railway systems as well as highway connections west to Winnipeg, east to Sault Ste. Marie and Toronto, and south to Minneapolis and Chicago.

Sleeping Giant Background Information

**Table 1: Profiles of Select Communities 1996
Canada Census**

| | Thunder Bay (city) | Shuniah Twp. (Pass Lake) | Fort William First Nation | ONT. |
|-----------------------------|--------------------|--------------------------|---------------------------|--------|
| Pop'l. 1991 | 113,946 | 2,182 | 638 | |
| 1996 | 113,662 | 2,346 | 661 | |
| 91-96 % change | -0.2 | 7.5 | 3.6 | |
| Unem. Rate % | 10.6 | 13.1 | 15.8 | 9.1% |
| % Labour Force Partic. Rate | 64.2 | 64.1 | 62.2 | 66.3% |
| \$ Indiv. | 26,243 | 31,329 | 18,944 | 27,309 |
| \$ family | 63,770 | 67,436 | 45,383 | 64,434 |
| \$ lone parent | 31,248 | 57,332 | 21,859 | 32,417 |

Access/ Transportation Routes

The park is linked, via Thunder Bay, to transportation corridors including highways, an international airport, railroads and water.

The primary access to Sleeping Giant Provincial Park is gained from Highway 587, which runs south from the Trans-Canada Highway (11/17), to Silver Islet, bisecting the park. The Marie Louise Lake Campground and many of the park's hiking trails are accessed from Highway 587. The park boundary is 14 kilometers south of Highway 11/17, with Marie Louise Lake Campground 18 kilometers south of the park boundary on Highway 587.

Secondary road access is available from Pearl, a small hamlet located 50 km east of Thunder Bay. This gravel road links Highway 11/17 with Squaw Bay at the park's northeastern corner, and ultimately with Highway 587.

Access is possible via a gravel road (North Scenic Drive), which links the community of Pass Lake to Rita Lake, also on Highway 587. However, the Thunder Bay Lookout to Pass Lake section of this road has been designated one-way to serve as a park emergency exit, and is therefore not available to motorized vehicles except in emergencies. Marie Louise Lake Drive provides access to the area around Marie Louise Lake. Several walking trails lead into the park from Silver Islet.

Access to the park may also be gained from Lake Superior. Silver Islet has a Government of Canada wharf that is available to mariners. The park's sheltered bays and inlets provide important harbours of refuge and mooring opportunities.

**Table 2: Services offered within the vicinity of
Sleeping Giant Provincial Park**

| Community Name | Approximate Road Distance | Facilities Offered |
|----------------|---------------------------|---|
| Thunder Bay | 40 km (west) | It is the closest urban centre and offers a full range of goods and services. There are a number of tourist attractions located right in the City of Thunder Bay. |
| Pass Lake | Adjacent | The community includes a small motel, fuel, a convenience store, a campground and restaurants. |
| Silver Islet | Adjacent | The general store operates a small tearoom, a mountain bike rental service and sells basic supplies and gift items. There is a federal dock, launching and berthing fees apply. |
| Dorion | 35 km (east) | A motel and a gas bar with a convenience store and a garage are located on Highway 11/17. |
| Red Rock | 60 km (east) | Services include groceries, banking, restaurants, a hotel and conference centre, and a full-service, 50-slip marina. |
| Nipigon | 65 km (east) | The town offers a wide range of facilities, including banking, fuel, a marina, groceries, shopping, and a number of motels and restaurants. |

Land Tenure and Land Use (Figure 2)

Sleeping Giant Provincial Park is within the boundaries of lands covered under the Robinson-Superior 1850 Treaty. The Fort William First Nation (Reserve #52) is located adjacent to the City of Thunder Bay. Sleeping Giant Provincial Park is part of the traditional use area of this First Nation. There are no land claims regarding Sleeping Giant Provincial Park at this time.

The community of Pass Lake abuts Sleeping Giant Provincial Park at the park's north boundary. Pass Lake dates back to 1924, when 27 square kilometres were set aside for the establishment of the Danish community. Ten Danish settlers arrived in 1924, 20 in 1927, and a considerable number in 1928. Until the mid-1930s, the main economic activity was logging, but market gardening and dairy farming continue to be important to this community.

Commercial fishing began on Lake Superior during the first half of the nineteenth century, but it was not until 1934 that the first recorded fishing community was established on the Sibley Peninsula. The

Figure 2 - Adjacent Land Use

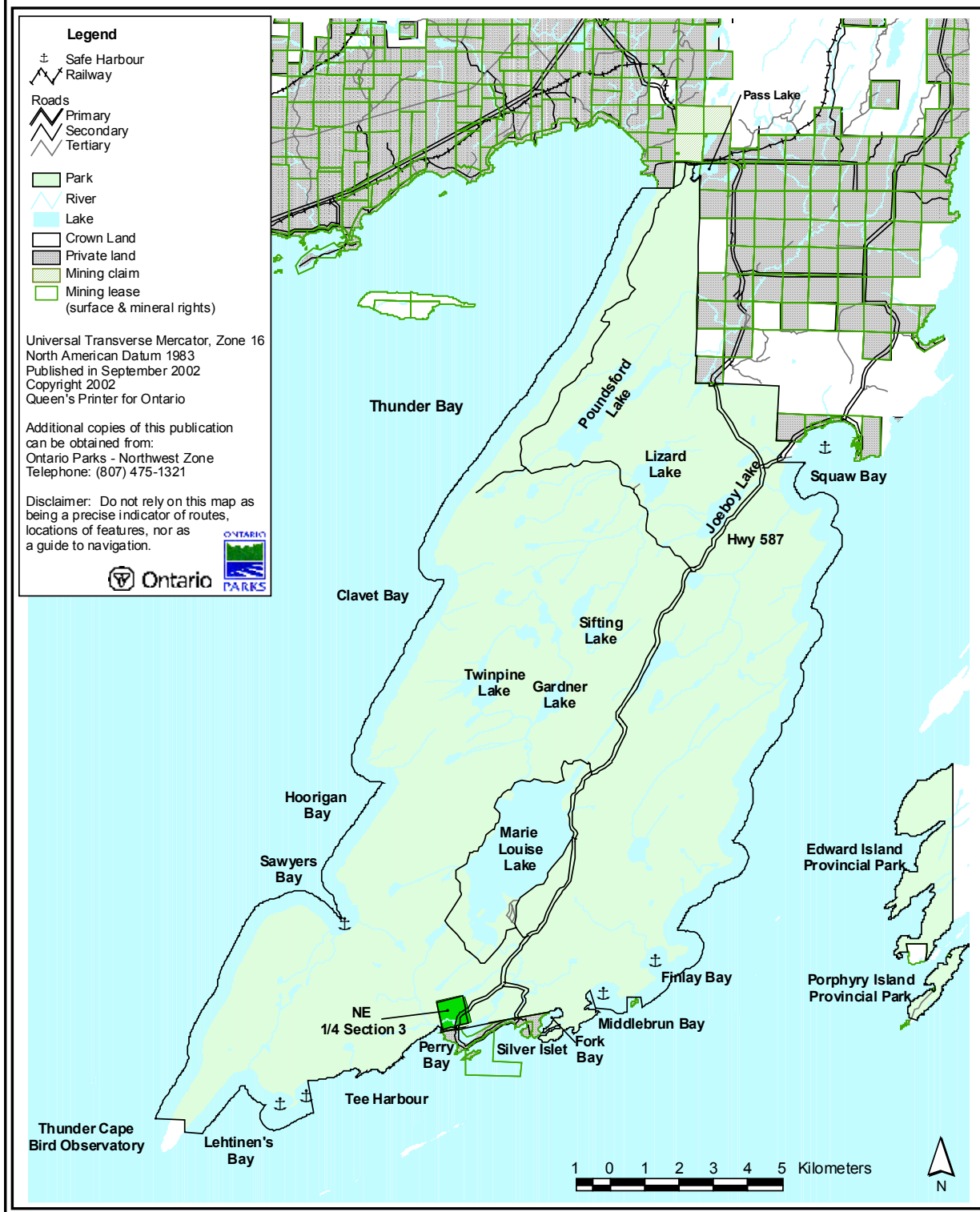


Figure 2: Adjacent Landuse

Sleeping Giant Background Information

settlement at Tee Harbour was forced to move to Camp Bay at Silver Islet in 1943 because of rising lake levels. Commercial fishing of lake trout and whitefish continues in the waters adjacent to the park.

With the discovery of silver ore in 1868, mining development began in the Silver Islet area. Families arrived and by 1872, the community was well established. The mine closed in 1885 after a total production of \$3,250,000.00. The miners and their families dispersed. Residents of Port Arthur and Fort William (now Thunder Bay) began to purchase the homes of the former miners at Silver Islet to use as summer camps as early as 1896. Silver Islet is now a thriving seasonal community. A federal dock with tenure under a Licence of Occupation is located adjacent to the Silver Islet store.

There are many unpatented mining claims / leases located north of the park on crown and private land as well as at the south end of the peninsula in association with the patent lands of Silver Islet. An area referenced as northeastern quarter of section 3 is located adjacent to this area (Figure 2). This parcel reverted to the crown when it was acquired by the Government in 1964. All rights with the exception of mineral rights were secured at that time. Upon acquisition of the mineral rights, the area will be regulated as part of Sleeping Giant Provincial Park.

Thunder Cape Bird Observatory is located on federal land at the southern tip of the Sibley Peninsula, at the foot of the Sleeping Giant. Originally, a lighthouse occupied the site at Thunder Cape, but by the time the Bird Observatory was established in 1991, only a clearing and some foundations remained. The observatory facility includes a cabin, a sauna and a wooden observation tower. Both spring and fall migration are monitored at Thunder Cape.

Sleeping Giant Provincial Park is located within the boundaries of the Lakehead Forest Management Unit. Forest harvesting and management activities do not occur within the boundaries of the park but do occur adjacent to the park on crown and private lands at the north end of the Sibley peninsula.

Quimet Canyon, Cavern Lake, Porphyry Island and Edward Island Nature Reserves are just some of the existing provincial parks in the area. A large number of recommended protected areas are also located in close proximity to Sleeping Giant Provincial Park. These recommended protected areas include the Western Lake Superior (C2260), Lake Superior Archipelago (C2245), and Black Bay Bog (C2243) Conservation Reserves. These recommended

protected areas and Sleeping Giant Provincial Park, are included in Ontario's Living Legacy Great Lakes Heritage Coast (GLHC).

Sleeping Giant Provincial Park is adjacent to the area proposed by Parks Canada as the candidate National Marine Conservation Area (NMCA). The proposed Lake Superior NMCA boundaries are currently under negotiation with the Province of Ontario. Some of the many partnership proposals include joint research, visitor services and marketing. Parks Canada has proposed that Sleeping Giant Provincial Park may wish to participate as a *Port of Discovery*.

Existing Park Development

Sleeping Giant provides opportunities for car camping, back-country hiking and camping, picnicking, scenic viewing, mountain biking, boating, sea kayaking, nature interpretation and cross country skiing. Most of the park's development is concentrated in the Marie Louise Lake Campground.

Camping

The Marie Louise Lake Campground (Figure 3B), located on the shores of Marie Louise Lake on the southern-end of the Sibley Peninsula, is comprised of 200 sites, 85 of which offer electrical hook-ups. All sites have a fire-pit and picnic table and a number of campsites have direct access to Marie Louise Lake. Water taps, vault toilets and additional vehicle parking areas are interspersed throughout the campground. There are two comfort stations (barrier-free access) with flush toilets, showers and laundry facilities and a firewood and ice concession. The two group camping areas can accommodate large parties while also providing barrier-free access. The campground is also equipped with a visitors' centre, park store, outdoor amphitheater and campfire theatre. Additional facilities include the park administrative office, maintenance buildings, staff quarters and an Ontario Ranger Camp (Figure 3B).

In 1999, ten campsites, known as the "300s", were developed on the west shore of Marie Louise Lake to meet a demand for more private sites. Four of the sites are walk-in, while the remaining six are drive-to sites. These sites are serviced with two vault privies (Figure 3B).

Sleeping Giant Background Information

Figure 3A - Existing Development

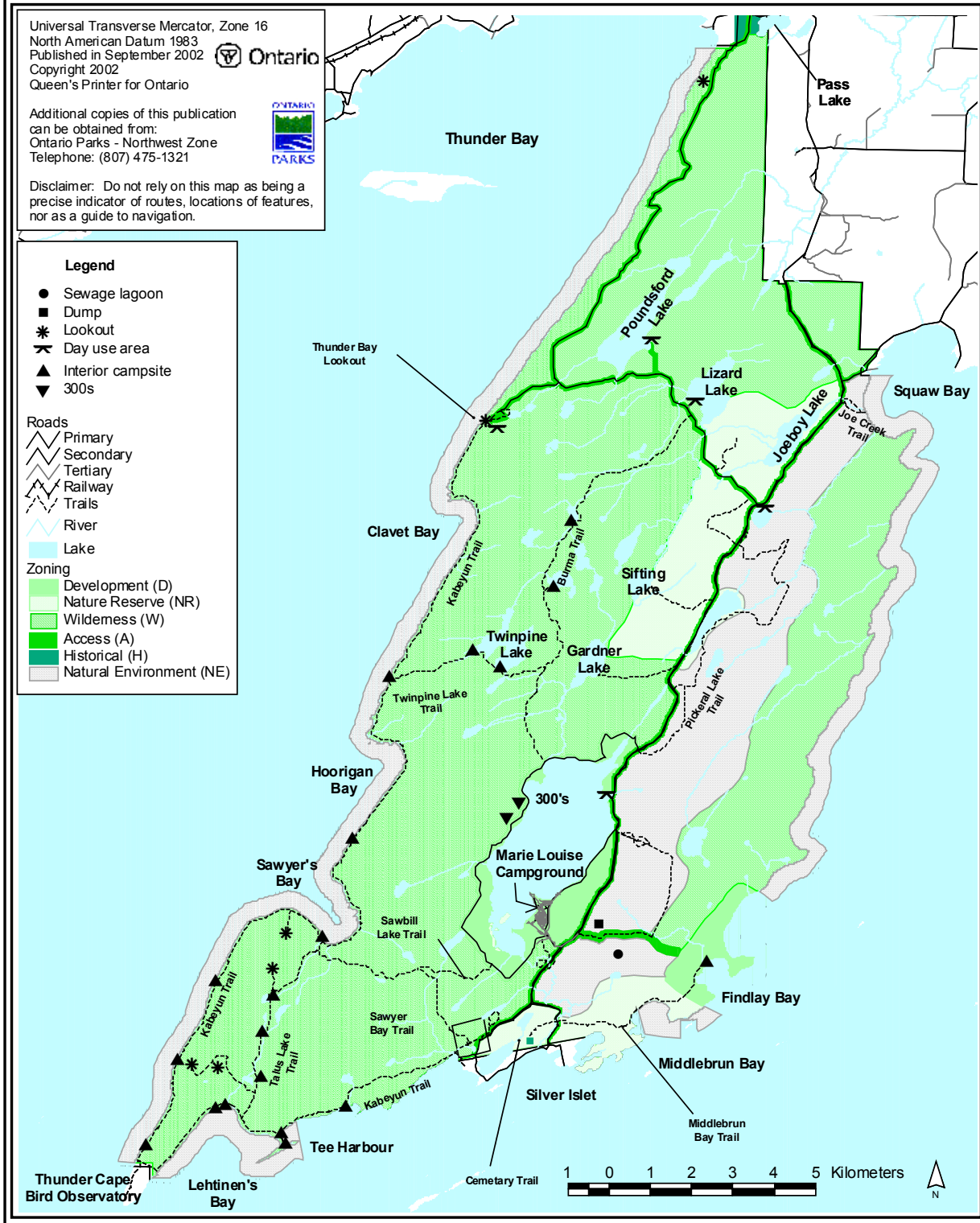


Figure 3A: Existing Development

Sleeping Giant Background Information

Figure 3B - Existing Development Marie Louise Campground Area

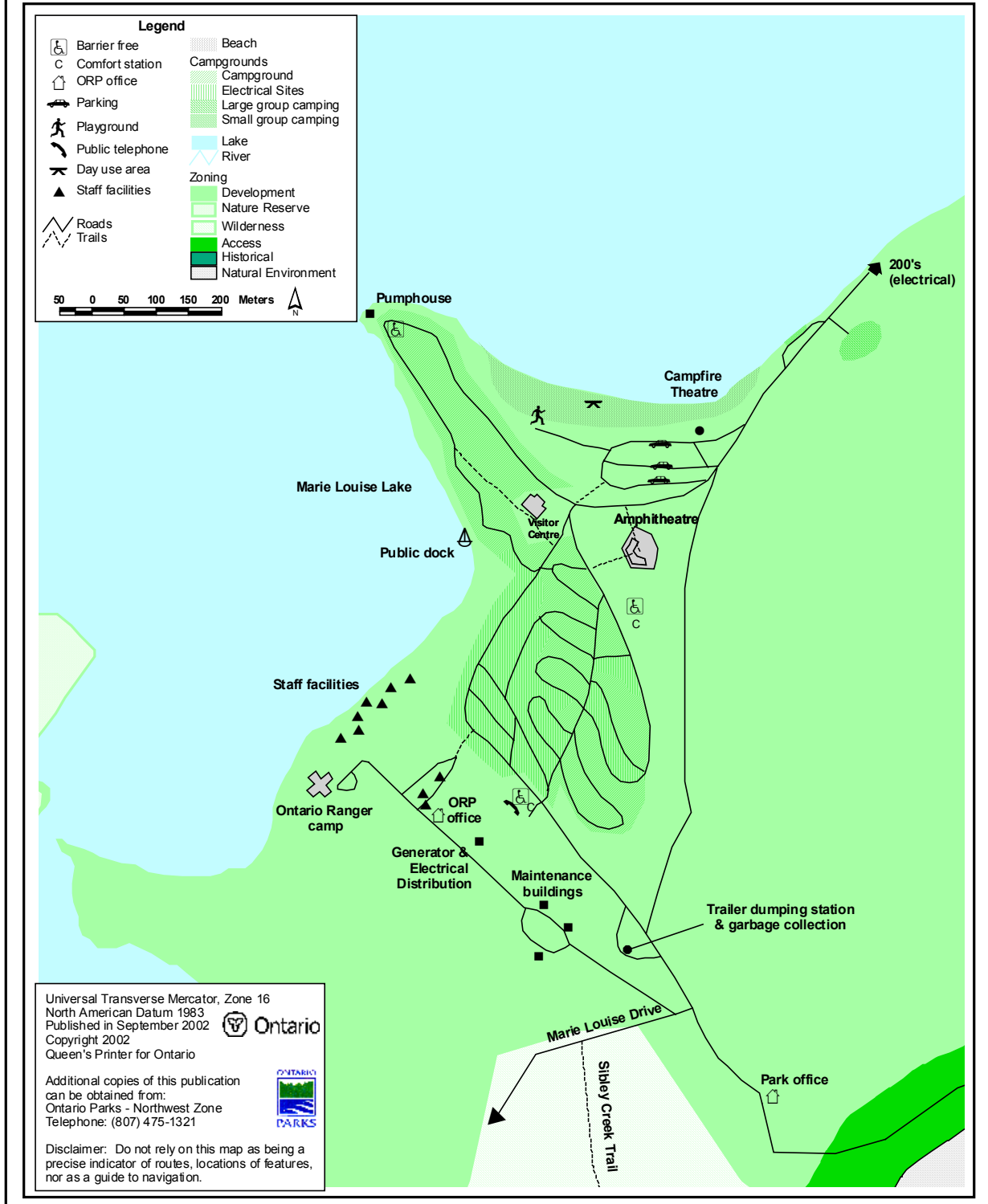


Figure 3B: Existing Development Marie Louise Campground Area

Sleeping Giant Background Information

The park offers campsites for lease each season. The lease program was initiated to increase the use of under utilized campsites.

There are 15 designated camping areas on the interior hiking trails with approximately 40 interior campsites. These sites are rustic and are comprised of a small clearing for a tent and a stone fire-ring. Many of these sites also have primitive vault toilets nearby. Despite efforts to identify interior campsites, some park users are camping in non-designated areas, such as Middlebrun Bay and additional areas at Tee Harbour.

Trails

There are two types of developed land trails at Sleeping Giant Provincial Park: hiking trails and nature trails (Figure 3A). The seven nature trails, which have a combined length of 10 km, are relatively short trails that pass through some of the more accessible and easily traveled areas. Trails such as Gardner Lake and Sifting Lake take hikers through majestic old-growth white pine and eastern white cedar. Some of these trails also have interpretative signs along their length that highlight certain aspects of the park's natural history.

Conversely, the hiking trails (over 80 kilometres) travel through some of the more scenic and rugged terrain that characterizes this region. These trails range in length from the 0.5 kilometre Sea Lion Trail, which is often hiked as a side-trip on the way to the Tee Harbour, to the 40 kilometre Kabeyun Trail, which can be hiked in several sections or as a multi-day expedition. The Kabeyun Trail is the park's major trail, beginning at either Silver Islet (South Kabeyun trailhead) or Thunder Bay Lookout (North Kabeyun trailhead). The Kabeyun Trail offers spectacular scenery and access to many beaches and coves as it follows the coast of Lake Superior. In order to accommodate overnight trips, most of the longer hiking trails are equipped with interior campsites. However, the maintenance of these interior trails can be challenging given the sheer number of trails and the fact that many areas continue to be affected by blow-down associated with a past outbreak of spruce budworm.

Recently, additional trails to the top of the giant have been developed. Within the past five years a new trail to the giant's head has been built. Concerns have been raised about the trail's existing alignment, as the gradient is quite steep and may lead to erosion and other negative impacts. A new trail up to the giant's knees has also been built to help alleviate safety concerns, vegetation damage and erosion

caused by vastly increased use on the Chimney trail. With the completion of this new Top of the Giant Trail, the Chimney trail has been closed. Increased use on top of the giant may also necessitate the development of additional trails and signage on top of the mesa formation to help direct visitor traffic, ensure visitor safety, and prevent adverse impacts on the vegetation.

Sleeping Giant Provincial Park is open year round. From January to March, the park offers winter activities such as the Sibley Ski Tour, the Winter Open House and the Silver Dog Sled Race, as well as cross-country skiing on 50 kilometres of groomed cross-country ski trails. These snow trails represent a combination of the Burma and Pickerel Lake hiking trails, a small portion of the Wildlife Habitat Nature trail, and old tertiary roads and secondary roads, such as the Marie Louise Lake Scenic Driver, that are left unplowed for the winter. The trails range in length and difficulty from a beginner to intermediate 10 kilometre loop east of Marie Louise Lake to the more challenging 30 kilometre Burma – Pickerel loop trail found north of the lake. All of the trails are maintained and groomed through a partnership with the Thunder Bay Nordic Trails Association. The trailhead is in the Marie Louise Lake Campground, where the visitors' center is used for warming.

Although not suitable for cross-country skiing, many of the other hiking trails are used for snowshoeing. The trail to Sawyer Bay is also packed down through an informal agreement with local residents, who use the area for ice fishing, which also enables snowshoeing opportunities.

Picnic Areas

The park provides several picnicking opportunities including the Marie Louise Lake Campground beach, Nanabosho Picnic Grounds on the northeast shore of Marie Louise Lake, and Lizard and Pounsford Lakes, which are accessed from the Thunder Bay Lookout road. Picnic tables and fireplace grills are available at each site, except at the campground beach.

Scenic Viewing

Formal opportunities for scenic viewing are provided at the Thunder Bay Lookout, which has a cantilevered viewing platform. Informal viewing opportunities are provided at the terminus of the Chest Trail, the Head Trail, the Top of the Giant Trail, at Tee Harbour, Middlebrun Bay, and Lehtinen's Bay, Joeboy Lake Lookout on the Piney Woods Nature Trail, and Nanabosho Lookout off of the Talus Lake Trail. The wetlands around Sibley Creek,

Sleeping Giant Background Information

the mineral lick just north of the Sea Lion trailhead, the Wildlife Habitat Nature Trail and the Gardner Lake trail all provide wildlife viewing opportunities.

3.0 INVENTORY AND EVALUATION OF NATURAL RESOURCES

3.1 Climate

Sleeping Giant Provincial Park experiences a modified continental climate, similar to that of the City of Thunder Bay. Summers are quite pleasant with a mean temperature of 15°C, maximum temperatures sometimes exceeding 30°C and overnight temperatures ranging between 10°C and 5°C. Winters are cold with mean a temperature of -12°C.

An analysis of infrared aerial photographs reveals a significant differential heating of the waters around the Sibley Peninsula. After spring breakup, the water body called Thunder Bay begins to warm up at a faster rate than the remainder of Lake Superior. However, the warming effect of Thunder Bay on Sleeping Giant Provincial Park is minimized due to the precipitous western shoreline of the peninsula and to the direction of prevailing winds. During May and June, winds blow easterly off Lake Superior at approximately 15 km per hour, thus having a cooling effect on the eastern and southern shores of the peninsula. Consequently, a pronounced difference in temperatures may occur between southern and eastern-facing shorelines and the central regions of the park. Although the degree to which this cooling effect extends inland is determined primarily by wind velocity, it does not generally exceed one kilometre. The daily differential heating of the large landmass of the peninsula and the Lake Superior water body causes minor onshore breezes in the morning and offshore breezes during the evenings especially during the summer months.

3.2 Earth Science

Topography

The Sibley Peninsula projects into Lake Superior from its north shore and is about 52 kilometres long and 10 kilometres wide. The peninsula separates Thunder Bay on the west from Black Bay on the east. Topographically, the Sibley Peninsula can be divided into two physiographic units, the highlands and the lowlands (Figure 4). The highlands, or tablelands, dominate the area west of Highway 587, rising as much as 380 metres above Lake Superior at the Sleeping Giant. Similar in many respects to the hummocky uplands and many hills, valleys and lakes

of the Shield area, the highlands on Sibley Peninsula are characteristic of a much more youthful stage of physiographic development. This assemblage of interbedded strata of hard and soft rock, which has been subjected to gentle warping and faulting, and erosional processes, provides a rugged and varied landscape of deep valleys, sheer cliffs, steep slopes and fast-flowing streams. A distinct sharpness and irregularity of features prevails throughout this unit.

East of Highway 587, the park's lowlands provide a sharp contrast to the highlands. Relatively flat and low-lying, this area slopes gently from an elevation of 75 metres at its western margin to the water's edge on Black Bay, over an area varying from 3 to 6 kilometres wide. In general, the topography of the eastern half of the park is remarkably regular, with only occasional, low, rolling hills breaking the gradual slope to Black Bay. Consequently, fewer vantage points are found in this unit in comparison to the highlands unit.

Except for diabase dikes and the large diabase sill that forms the upper part of the Sleeping Giant near the southern tip of the Sibley Peninsula, the peninsula is underlain entirely by layered sedimentary rocks. The sedimentary rocks strike northeast and slope gently to the southeast to form a huge cuesta, the west margin of which is a vertical escarpment rising to as much as 137 metres above Lake Superior (Pye 1969).

Geology

Sleeping Giant Provincial Park lies within the Canadian Shield, in a vast area of ancient rock of Precambrian origin. The Shield forms the foundation of the North American continent and consists of some of the oldest rock on earth. It is divided into geological provinces and sub-provinces based on differences in rock type, structure and age. The park lies within the Southern Structural Province, in an area formerly known as the Nipigon Plate (Stockwell et al, 1972) but now referred to as the Nipigon Embayment (Sutcliffe, 1991). The Nipigon Embayment consists of a sequence of Mesoproterozoic, pre-Keweenawan sedimentary rocks of the Sibley Group (quartz arenite, argillaceous dolomite and mudstones) that formed

Sleeping Giant Background Information

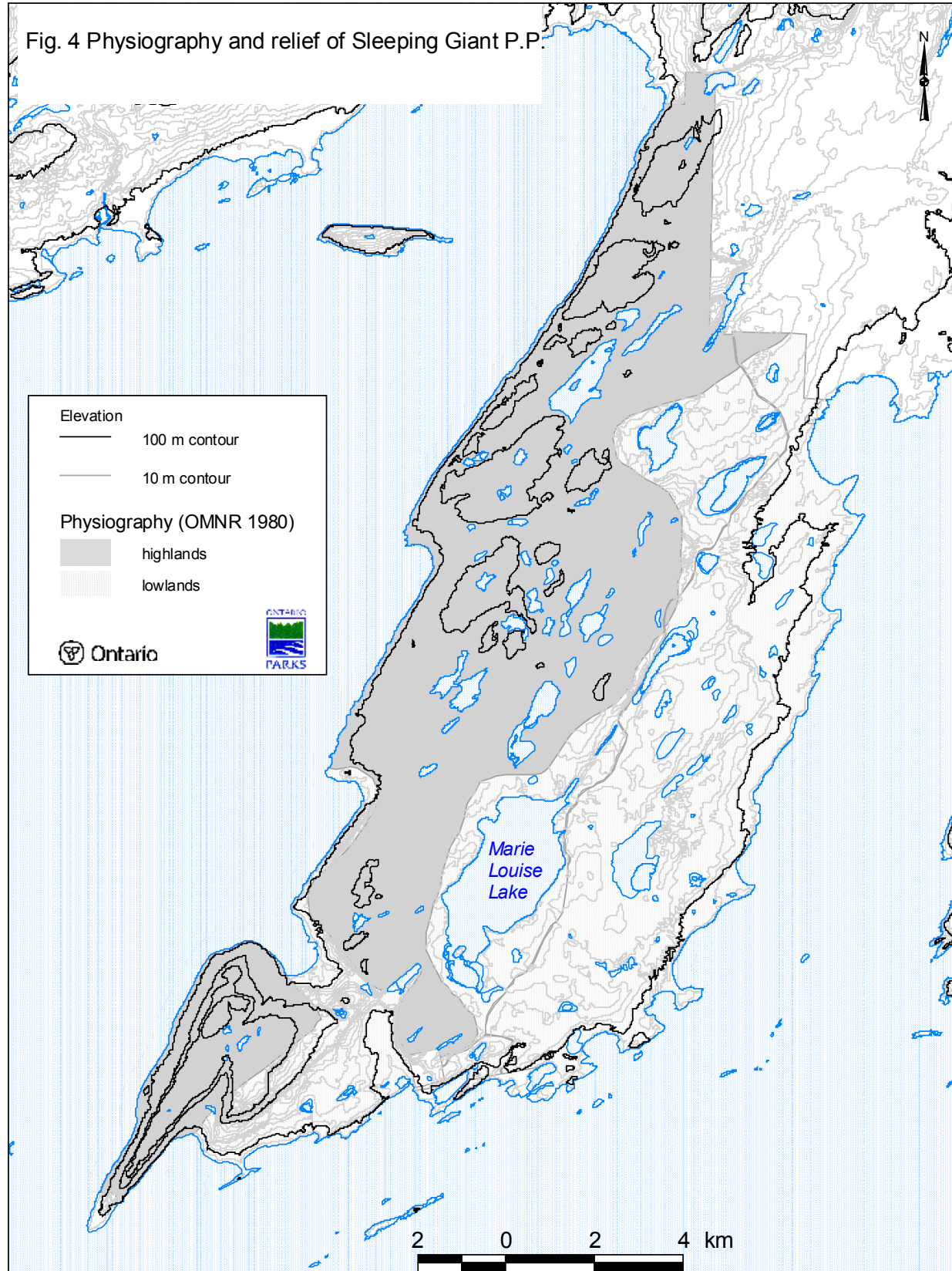


Figure 4: Physiography and relief of Sleeping Giant P.P.

Sleeping Giant Background Information

about 1.3 billion years ago, and the Keweenawan Nipigon diabase sills that were intruded into the Sibley sequence about 1.1 billion years ago. These rocks, which overlie the older Archean Superior Province basement complex, extend north from Lake Superior to subtend an area roughly coincident with the Lake Nipigon basin.

The Keweenawan diabase intrusive sills dominate the landscape in this area. Diabase, a very dark, basic, igneous rock was intruded as magma parallel to the bedding planes of the Sibley sediments. Differential erosion (the diabase is more resistant to erosion than the sediments) has resulted in tabular or sheet-like forms (sills) that cap the softer sediments and now stand out as isolated flat-topped mesas or southward-dipping cuestas. Structures within the diabase determine the spatial form of these features. Prominent joint sets (fractures) develop perpendicular to the plane of injection due to contraction within the cooling magma. Erosional processes (e.g., freeze-thaw) work on these zones of weakness (i.e., the columnar jointing) which results in the vertical cliffs (escarpments) that characterize the mesas and cuestas. The eroded materials collect as up to house-sized colluvial talus at the base of the cliffs.

Bedrock Morphology

The underlying bedrock is the Archean granitic basement complex, which is not exposed in the park. The peninsula is underlain by two sequences of stratified sedimentary rocks of Middle and Late Precambrian age (Figure 5).

The Middle Precambrian or Paleoproterozoic era, at the bottom of the stratigraphic section in the park, is represented by the Gunflint Formation and the overlying Rove Formation, which are part of the Animikie Group dating to 1.8 to 2.1 billion years ago.

The Gunflint Formation consists of conglomerate, chert and iron formation overlain by argillite, carbonate and chert. The Gunflint Formation is approximately 130 metres thick. The Formation can be observed adjacent to the park, at a rock cut that is 1.3 kilometres south of the intersection of Highway 587 and Highway 11&17. The rock cut consists of thin alternating beds of dark green to grey, rusty weathering carbonate and pale grey to white beds of chert (Pye 1969).

The Rove Formation consists of black locally pyritic shales which grade upward into shales interbedded with greywacke deposited by turbidity currents. Numerous directional features such as ripple marks and rill marks characterize the Rove Formation.

Drilling indicates that the Rove Formation is greater than 600 metres thick in the vicinity of Squaw Bay on the Sibley Peninsula adjacent to the park (Sutcliffe 1991). In the park, the Rove Formation is exposed continuously in the escarpment extending along the western side of the peninsula. It can be examined most conveniently at two readily accessible locations: the quarry adjacent to Highway 587, 3.5 kilometres east of the intersection with Highway 11/17, and along the shore of Lake Superior at Silver Islet Landing. In the quarry, the Rove sediments are thinly-laminated, highly fissile, black (carbonaceous) shales, which, at irregular intervals, are interrupted by large calcareous concretions (Pye, 1969). At Silver Islet Landing, they are somewhat harder, slaty rocks interbedded with relatively thick strata of massive greywacke.

The Late Precambrian or Mesoproterozoic is represented by the Sibley Group sedimentary rocks, which were deposited 1.5 to 1.3 billion years ago. The Sibley Group is a red bed sequence preserved in a fault-bounded basin, extending from Lake Superior to Lake Nipigon. The Pass Lake Formation unconformably overlies Animikie Group sedimentary Rocks near Pass Lake as well as Archean basement rock. The Pass Lake Formation consists of quartz arenite with locally derived conglomerate lenses. The sand is predominantly composed of quartz but also contains feldspar and rock fragments. A marine environment origin was originally suggested for the Sibley Group but more recent hypothesis suggests evaporation of a freshwater lake in an alluvial playa lake environment (Sutcliffe 1991). In the park, the principle exposures of the Sibley Group are found along Highway 587 at the northern end of Pass Lake adjacent to the park boundary, and at the Thunder Bay Lookout. In both places, the rocks are massive to thinly-bedded, white to buff quartz sandstones. Other outcrops of red, impure dolomites and dolomitic mudstones are found in the central portion of the peninsula between Pass Lake and Rita Lake. Rocks of the Sibley Group are also exposed continuously in the escarpment extending along the west side of the peninsula (Pye 1969).

The dominant Mesoproterozoic tectonic event in the region was the development of the midcontinental rift along the present axis of Lake Superior around 1.1 billion years ago that resulted in the magmatic deposition of the Keweenawan Supergroup and included both diabase sills and dike swarms (Thurston 1991). The rocks of the Keweenawan

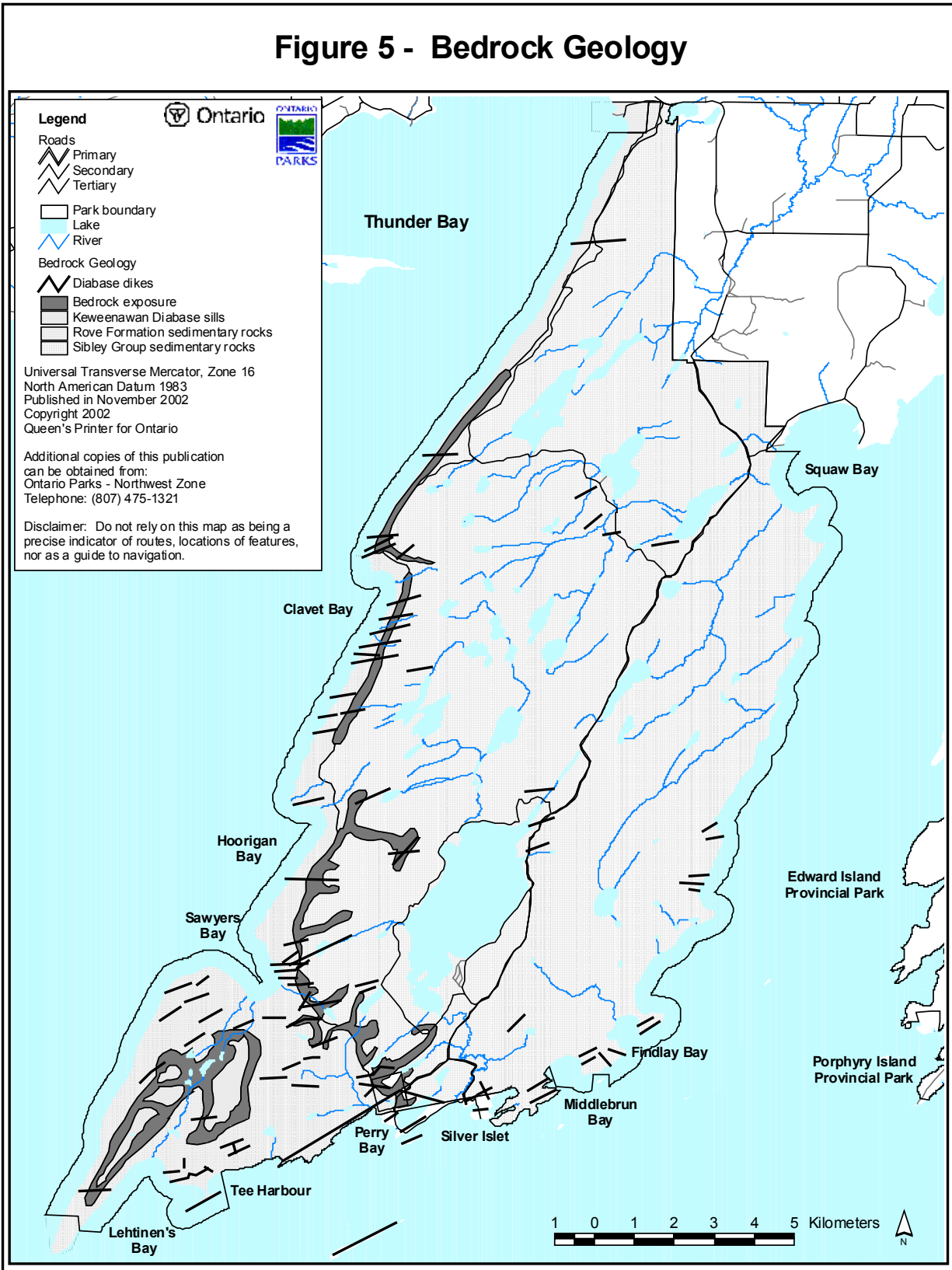


Figure 5: Bedrock Geology

Sleeping Giant Background Information

Supergroup were deposited in and marginal to the Midcontinental Rift. Keweenawan volcanic rocks consist primarily of subaerial theolitic basalt flows erupted mainly from fissures and to a lesser extent from central volcanoes. The Sibley Group Sedimentary rocks were intruded by diabase sills dated 1.12 billion years ago

In the most southerly area of the Sibley Peninsula, known as Thunder Cape, the Rove Formation and the Sibley Group are overlain by flat diabase sills. The distinguishing feature of the diabase sills are the prominent vertical cracks or joints that present a distinct columnar structure along the cliff faces. Pye (1969, p. 63) describes them as "tension cracks, formed immediately after solidification of the parent magma, at right angles to the lower surface of the flat sheet as a result of contraction or shrinkage of the diabase on cooling." Subsequent erosional processes, such as freeze and thaw activity produced the vertical cliff faces that characterize these mesa-cuesta landforms. From time to time these columns break away and fall to the base of the cliff where extensive talus slopes have developed. In the park, one billion years of erosion after the intrusion of the sills has resulted in the formation of five flat-topped mesas, sedimentary rock capped with erosion-resistant diabase, that, when viewed from across the waters of Thunder Bay, resemble the profile of a recumbent human form. This characteristic landform feature is associated with the legend of Nanabosho and is known as the "Sleeping Giant".

Along with the flat-lying diabase sills, diabase dikes have intruded the sedimentary rocks. The Pigeon River Dike Swarm, one of three along the north shore of Lake Superior, is related to the volcanic rocks of the Keweenawan Supergroup that were deposited in relation to the midcontinental Rift about 1.1 billion years ago. The Pigeon River Dike Swarm extends east from the Ontario/Minnesota border to the Black Bay Peninsula roughly parallel to the midcontinental rift. The individual dikes are up to 40 kilometres long and one hundred metres wide (Sutcliffe 1991). Erosion of the softer sedimentary rocks has left the more resistant dikes to control and form many of the northeastern trending ridges of the park. These are best observed where they form headlands or promontories at the shoreline at the south end of the peninsula. Notable examples are the Sea Lion and the crossbar of the T-shaped feature at Tee Harbour. The former is one of the better known geological features in the park. The Sea Lion is a narrow vertical diabase dike that forms a tabular mass of rock not more than 1.5 metres thick and 7.5 metres high that juts out 15 metres into Lake Superior at Perry Bay

just northwest of Silver Islet. The wave action of Lake Superior has cut a small tunnel in the dike (Pye 1997).

Geomorphology

The surficial deposits of Sibley Peninsula are the result of several geomorphological processes: the deposition of debris by melting glacial ice; the deposition of fine materials in glacial lakes which occupied the Superior basin; and the formation of shoreline features associated with these same post-glacial lakes (Figure 6).

The last major glaciation to affect Ontario, the Late Wisconsinan, reached its maximum extent about 12,000 years ago, almost completely covering the province (Saarnisto, 1975). From this time on the generally warming climatic trends caused glacial melting to exceed glacial advance, resulting in a receding ice front. A combination of factors caused several halts in this recession of the continental glaciers. One of these halts, termed the Algonquin Stadial (Saarnisto, 1975), caused the park to be slowly uncovered between 11,000 and 10,000 B.P. The stony sand till which forms the thin soil cover over most of the park was deposited at this time.

The last ice advance to override Sleeping Giant Provincial Park was the Marquette Advance, which occurred roughly 10,000 years ago and filled the Superior basin with ice for the last time. The park was uncovered after the ice retreated across the lake to beyond the north shore. Glacial Lake Minong followed the ice back and ultimately filled the Lake Superior basin (Farrand 1960; Farrand and Drexler 1985). The continued retreat of the ice to the north essentially ended the ice age in the Lake Superior basin. Following this there was a succession of lowering lake levels, but including several significant fluctuations as glacial Lake Agassiz drained eastward, one rising level (i.e., the Nipissing Transgression), and then continued lowering levels down to the present Lake Superior.

When the ice retreated, glacial Lake Minong was approximately 75 metres higher than current Lake Superior levels and, as a result, the western highlands of the Sibley Peninsula existed as a series of islands. Sand, silt, and clay were deposited in the lowlands, and existing deposits of silty sand were reworked by wave action. Where a source material was available, cobble and gravel beaches formed along the shoreline of glacial Lake Minong. Beaches associated with the glacial Lake Minong

Figure 6 - Geomorphology

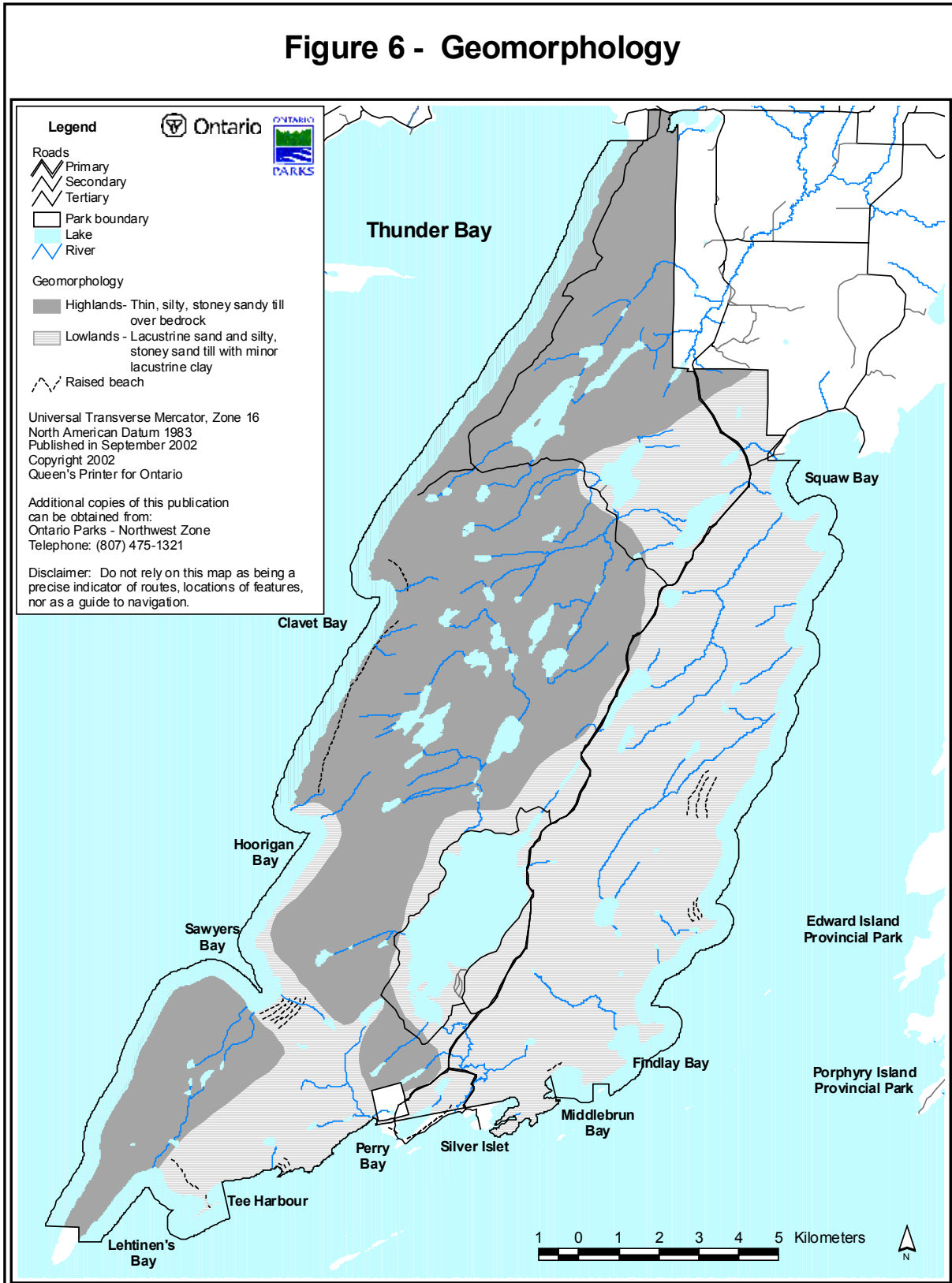


Figure 6: Geomorphology

Sleeping Giant Background Information

shoreline can be found just north of the park boundary in the vicinity of Pass Lake. Raised cobble and shingle beaches, representative of post-Minong lake levels, are found throughout the park. Isostatic rebound (a slow uplifting of the earth's surface following the removal of the weight of the ice) has raised these features to a level higher than when they were originally formed. The highest raised cobble beaches occur 70 metres above the present level of Lake Superior. Near Silver Islet Landing and on Sawyer Bay and Perry Bay, raised cobble beaches related to lower, more recent lake stages extend down to the present shoreline, where wave action is redistributing these deposits to form contemporary beaches.

Economic Geology

Silver Islet is a small rock island situated 1.2 kilometres offshore from Silver Islet Landing. It was the site of the Silver Islet Mine which produced silver from 1868 until 1884 worth \$3.2 million. The silver mineralization at the site is associated with a northwest striking cross fault in an olivine diabase dike, and occurs as native silver as well as a number of mineralizations such as argentite and galena.

The exploitation of this and other mineral deposits in the Thunder Bay area transformed the area from a sparsely settled wilderness with an economy that depended on the fur trade to an area with a more diverse economic base. For a time, the community of Silver Islet was the centre of commerce for the entire north shore. Today Silver Islet is a vital seasonal community inhabited by descendants of the original miners as well as residents of Thunder Bay.

3.2.1 Planning Considerations

Significant Features

Significant features at Sleeping Giant Provincial Park are provincially and regionally significant. These include:

- *The Keweenawan diabase sills, whose tabular form has resulted in the distinct mesa-cuesta landforms that characterize the physiography of this corner of the province. In addition, the park aptly demonstrates the interaction between the intrusion of the younger magma and the older Sibley sediments.*

Considerations

- *The park's cliffs and the crevice systems near the cliff-edges represent an inherent danger for park users. The hazards here are not unlike those at Kakabeka Falls, Ouimet Canyon, Pigeon River, and Ruby Lake Provincial Parks (e.g. someone*

slipping off a cliff or falling into one of the deep joint cracks).

Hydrology

The height of land on the Sibley Peninsula runs parallel, and in close proximity, to the shoreline of Thunder Bay. Approximately 100 km of streams exist within the park boundary with most of the major drainage systems – Portage Creek, Joeboy Creek, and Pickerel Creek – draining easterly and southeasterly into Black Bay. Sibley Creek flows into Lake Superior at Silver Islet;. No streams enter the park from outside its boundaries.

Approximately fifty bodies of water, with 115 kilometres of shoreline and 1,600 hectares of surface area, occur within in the park. Marie Louise Lake is the largest, encompassing 775 hectares with a shoreline length of 18 kilometres. Other major lakes arranged in order of decreasing size include Pounsford, Lizard, Joeboy, Twinpine, Gardiner, Pickerel, Norwegian, Surprise and Ferns. Generally, these lakes are mesotrophic with a moderately low nutrient content, while some of the smaller, shallower lakes appear to be eutrophic. Wetlands are well represented in the park.

The thin-soiled bedrock outcrops of the highland area exhibit rapid drainage mainly by surface run-off. As a result, the soils of this area are susceptible to seasonal moisture differences. The lowland area of the park with its flatter relief and finer-textured soil material is characterized by small lakes, bogs and swamps, which act as water reservoirs. In addition, there are spring seepages, indicating a generally high water table.

The Sibley Peninsula's shoreline is characterized by a number of coves or bays that increase the aesthetic value of the shoreline and provide shelter to boaters. Some of the major bays along the peninsula are: Squaw Bay, Finlay Bay, Middlebrun Bay, Fork Bay, Camp Bay, Perry Bay, Tee Harbour, Sawyer Bay, Hoorigan Bay and Clavet Bay. Since the park boundary extends into Lake Superior along the majority of the peninsula, many of these bays are at least partially included in Sleeping Giant Provincial Park. Most of these bays can also be accessed by land through the park's trail system and a dock is located at Sawyer Bay to help accommodate use by motor and sailboats.

Sleeping Giant Background Information

3.3 Life science

Vegetation

Rowe (1972) includes the area covered by Sleeping Giant Provincial Park in the Quetico- Rainy River Section of the Great Lakes-St. Lawrence Forest Region. Hills (1959) designates this area as Site Region 4W, Site District 4W-2. In the recent modifications of the Hills classification, Sleeping Giant Provincial Park provides the Natural Environment Class Parks target and contributes to the representation of landform vegetation combinations for Ecoregion 4W, Ecodistrict 4W-2 (Crins 2000).

Overview

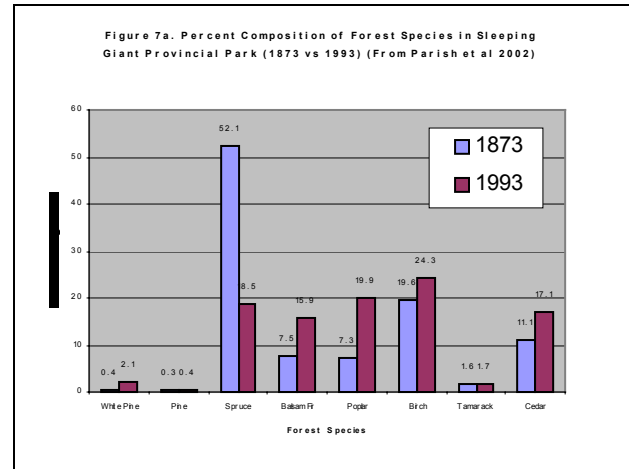
Sleeping Giant Provincial Park is known as a botanist's paradise. The Sibley Peninsula juts out into Lake Superior and provides an array of different habitats due to its varied topography, interesting geology and variety of microclimates. The peninsula hosts a number of lime-rich habitats, from calcareous rocky outcrops to fens, due to the sedimentary bedrock deposits and glacial overburden. Lime-rich conditions result in a more neutral soil that many species of plants require. The rugged coastline of Lake Superior, the wide range of forest types and wetlands, the great extremes of relief from cliffs to ravines and gentle uplands, provide a variety of habitats that host a great diversity of plants, including a wealth of orchid habitats unique to the provinces' park system. The cold (wet) microclimate produced by Lake Superior also creates the perfect environment for arctic-alpine disjuncts (Laliberté 2001, Johnson 1993).

Vegetation History

Although there is no complete inventory of Sleeping Giant's forests prior to extensive human influence in the 1890's, it is likely that the forests of Sleeping Giant Provincial Park were predominantly mixed forest of white spruce (*Picea glauca*), balsam fir (*Abies balsamea*) and white birch (*Betula papyrifera*), with some red pine (*Pinus resinosa*) and white pine (*Pinus strobus*). Timber harvest records from the early 1900s indicate that the area covered by conifer stands (red and white pine, spruce and spruce/balsam fir stands) was much larger than it is today (Foster 2000). Taylor (1935) confirms this notion, indicating that the Sibley Peninsula may once have been held as an Admiralty Pine Reserve because of the abundance and quality of the red and white pine.

Parish et.al. (2002) recently examined the pre-settlement vegetation and fire history of Sleeping

Giant based on surveyors' notes and concluded that red and white pine were never abundant and that the majority of the conifer component was in fact black spruce (see Fig 7a). This suggests neither red nor white pine were ever major elements of the vegetation of Sleeping Giant Provincial Park.



Fire History and Spruce Budworm

Sleeping Giant Provincial Park likely has a long natural fire rotation due to its peninsular landform and the effects of Lake Superior with cool temperatures and high humidity. Detailed fire studies for similar locales such as Isle Royale and Pukaskwa indicate a fire cycle of approximately 260 years compared to the average natural fire return interval of an inland location such as Quetico (78 years). Parish et al. (2002) estimated that the probable range of natural fire cycles for Sleeping Giant Provincial Park at about 140 – 200 years from 1810 to 2001.

This reinforces the view of Foster (2000), who stated that “the Sibley Peninsula probably had infrequent large fires at long random intervals.” Timber cruises of Sibley Township in 1920 indicate that a large wildfire burned approximately 75% of the peninsula circa 1810. This fire extended from the north along the highlands of the centre and west side of the peninsula (Gardner 1920). Most of the park's oldest trees originated from this fire including the old growth red and white pine stands. In 1920, two fires occurred; these were about 644 and 1396 hectares in size (within the park). There were 9 fire starts between 1976 and 1996 that were extinguished before they spread, with only about 3 hectares burned in total. Based on their location, at least two of these fires were likely human caused and not natural. Since then fire has had little influence on the park's vegetation.

Sleeping Giant Background Information

Although fire was infrequent, it still contributed to the diversity of forest types by allowing spruce and pine to seed in. Light understory fires were likely important to the regeneration of red and white pine (Foster 2000).

Intensive fire suppression in Northwestern Ontario began in the 1940s, disrupting natural succession processes. The effectiveness of fire suppression between 1920–1950 may have been relatively poor. However, fire suppression between 1950 and the present has been relatively effective. It has been assumed that fire suppression has led to an increase in balsam fir and has hindered the regeneration of red and white pine. The reality, given the information regarding firecycles, is that what we see is actually the “natural state” you would expect given infrequent large fires at long random intervals.

Although budworm infestation is a natural process, the increase in balsam fir in the absence of fire has also contributed to more frequent and longer lasting outbreaks of spruce budworm. Most recently, Sleeping Giant Provincial Park experienced spruce budworm outbreaks from 1948 to 1958 and again from 1984 to 1994 (Foster 2000).

It was assumed that the absence of natural fire has resulted in the decline of the red and white pine stands and their eventual replacement by hardwoods and balsam fir. The absence of natural fire has also resulted in a reduction in the diversity of forest types and perpetuation of the budworm cycle. What we are really seeing is the vegetation in its natural state immediately preceding a major fire event, given a 200 year fire-cycle.

Logging

Logging began on the southern part of the Sibley Peninsula in the late 1860s to supply lumber for the mine and the community of Silver Islet. Most of the pine from the south end of the peninsula was harvested, but some pine was left uncut at the north end (Foster 2000). The tote road system developed for hauling this lumber is the basis for the current park road and trail system (Foster 2000). White pine was selectively logged in the area east of the highway from 1917 to 1938 and from 1955 until 1970 (OMNR 1984).

The most intensive logging occurred between 1917 and 1930 when large areas of white pine, white spruce and eastern white cedar (*Thuja occidentalis*) were harvested for lumber. Spruce and balsam fir were also harvested for pulpwood at this time using Portage, Joe and Sibley creeks for the main

transportation routes (OMNR 1971, 1980, McNicol and Hamilton 1972). By 1920, no significant stands of pure spruce pulpwood were left in Sibley Township. Large-scale pulpwood cutting of mixed stands of spruce and balsam fir took place until 1940. Harvesting rights to the area, known as the Port Arthur Unit were held by the Provincial Paper Co., then by Port Arthur Pulp and Paper Company and later by Abitibi Power and Paper Co. Ltd., Port Arthur Division (Foster 2000). By 1938, most of the accessible upland forest in the park had probably been logged; records of harvest volumes suggest that several thousand hectares of forest were harvested (Foster 2000).

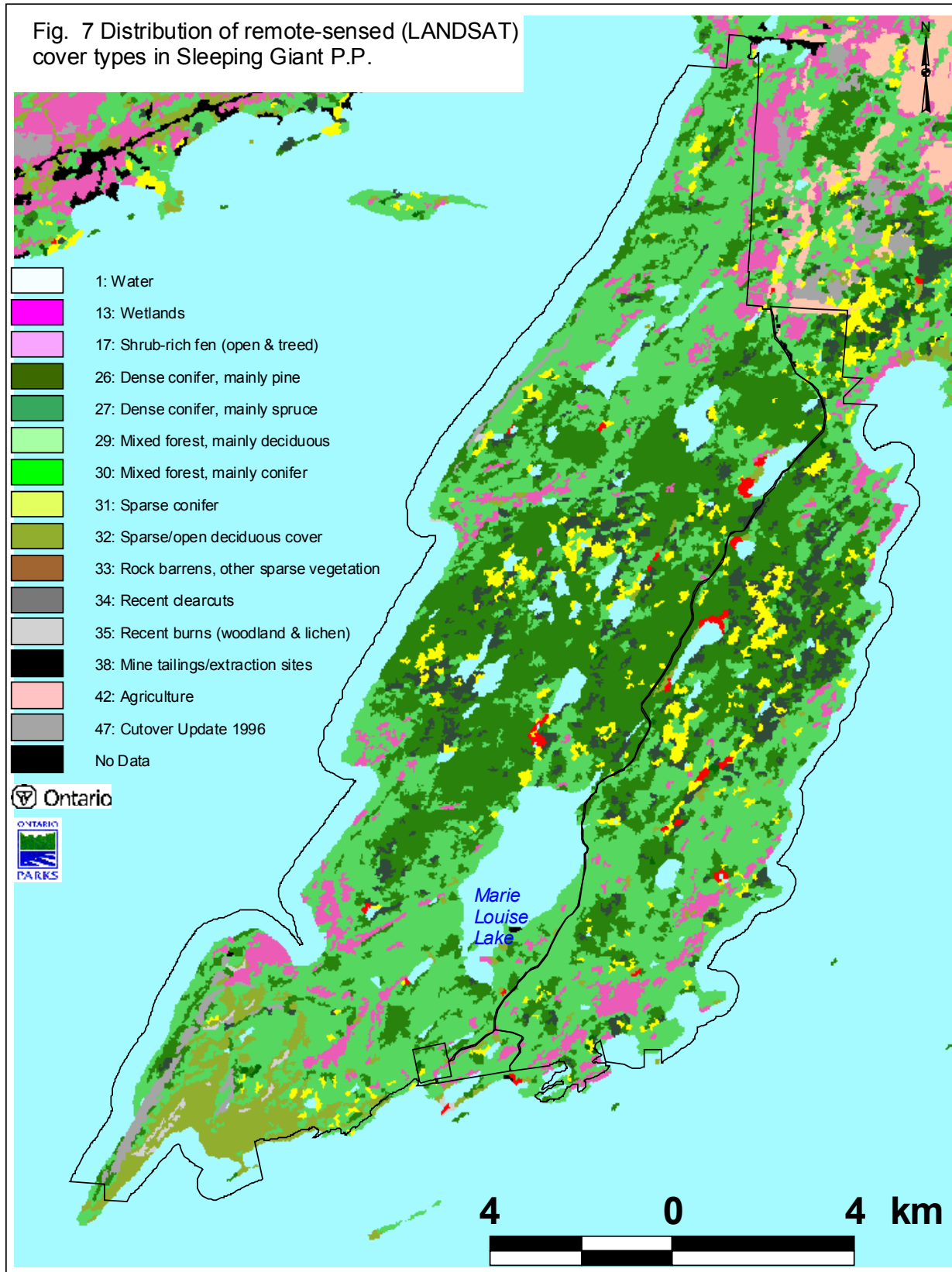
During the 1960s, limited forest harvesting continued under the initial management plan for Sibley Provincial Park (1952). White Pine was selectively cut during the winter of 1958-59 but was no longer harvested after this due to complaints by the Thunder Bay Field Naturalists and other groups (Foster 2000). Salvage cutting of spruce budworm killed stands of balsam fir as well as blister rust infected white pine occurred during the 1960s. Cutting for fuel wood and wildlife enhancement was carried out in small patches in the late 1970s and early 1980s. In the Development zone around Marie Louise Lake, tree removal and planting have occurred for safety, sanitation and aesthetic purposes (Foster 2000).

Vegetation Communities in Sleeping Giant

The forests of Sleeping Giant Provincial Park have changed since the 1880s because of logging, a lack of fire (which is likely natural rather than due to fire suppression) and spruce budworm infestation. Balsam fir, white cedar and hardwood species have increased, while spruce has declined. Red pine has remained static and white pine has increased slightly (Figure 7a). Mixedwood forests are currently the dominant forest type (Figure 7). They are predominantly mature to overmature trembling aspen (*Populus tremuloides*)-dominated and white birch-dominated mixedwoods with a strong component of balsam fir especially in the understory, as well as a component of white spruce. These forests comprise about one half of the park's area (Foster 2000).

The park has several other forest types including jack pine (*Pinus banksiana*) parkland, pure balsam fir stands, cedar-dominated swamps and black spruce (*Picea mariana*)-dominated stands on dry shallow ridge tops and on wet organic soils in low areas such as swamps and fens. There are a few

Sleeping Giant Background Information



Figure

7:

Vegetation

Sleeping Giant Background Information

remaining stands of old-growth red and white pine, which are a significant forest type because of their relative rarity in the region, and in the province (Foster 2000).

Non-forest communities also contribute to the vegetation diversity of Sleeping Giant Provincial Park. Minor plant communities include non-forested wetlands (marshes and fens), forested wetlands (swamps) and non-forested upland communities such as talus slopes and cliffs. The diabase cliffs and talus slopes form a rare type of open habitat in a forested area, with sparse vegetation dominated by shrubs, mosses and lichens. The diabase cliffs and open talus also provide a relatively nutrient rich substrate. A number of provincially rare and globally rare species are found within the park (Foster 2000).

Balsam fir

Balsam fir, due to its great tolerance to shade and moisture conditions with the absence of wildfire, is widespread as a subordinate species in other stands. It is found in only a few localities as the dominant tree species. In the most recently logged areas, balsam fir, along with aspen and white birch, is succeeding shrub thickets of raspberry (*Rubus idaeus*), beaked hazel (*Corylus cornuta*), thimbleberry (*Rubus parviflorus*), green alder (*Alnus viridis*), and squashberry (*Viburnum edule*).

Trembling aspen-white birch

Trembling aspen-white birch deciduous forests are common on well-drained sites, particularly those, which have been previously logged. At present, these stands cover about half the park. In mature stands, balsam fir and white spruce are significant constituents.

Cedar dominated swamps

Cedar-dominated swamps are extensive on the eastern lowland areas of the peninsula. Associates of cedar on these wet sites include balsam fir, black spruce and white spruce. Cedar found in swamps and along streams and lakeshores is often very large. Poor sites such as shallow-soiled ridge tops and steep slopes also support cedar but not with the same vigor as those found in the lowland areas.

Pine forests

White and red pine forests are concentrated on uplands and rocky ridges in the general area of Norwegian, Sifting, Gardner and Pickerel Lakes. In the absence of fire, there has been little pine regeneration; the pine forests are being succeeded by shade-tolerant species such as balsam fir.

Jack pine may be encountered throughout the park but it rarely occurs as a dominant species. The largest stands occur on the Sleeping Giant and in the vicinity of Wiswell Lake. Jack pine parkland or woodland, with black spruce as an associate, is limited to a small area along the escarpment on the western margin of the park. This association varies from an essentially closed forest to open parkland with scattered trees separated by lichen and blueberry-bearberry (*Vaccinium* spp.-*Arctostaphylos uva-ursi*) -carpeted bedrock.

Black spruce

Black spruce is the major component of spruce dominated stands because of the depletion of white spruce through logging. Black spruce is most abundant as a swamp community type on wet, organic soils of low-lying areas. It also occurs in bogs where, with a number of shrubs, such as Labrador tea (*Ledum groenlandicum*) and sphagnum moss (*Sphagnum* spp.), it forms a typical bog association.

Other plant communities

There are in addition several minor plant communities in the park. Though limited in area, these contribute immensely to the diversity of vegetation. These associations include aquatic communities, dwarf aspen-spruce-pine thickets on top of the Sleeping Giant, rich fern ravines, nutrient-rich bogs and subarctic, shoreline vegetative communities. A number of arctic and subarctic plants such as butterwort (*Pinguicula vulgaris*) and alpine bistort (*Polygonum viviparum*) are found only along cold, exposed rock shores. Others, including black crowberry (*Empetrum nigrum*) and cloudberry (*Rubus chamaemorus*), grow in cold bogs. Still, others such as encrusted saxifrage (*Saxifraga paniculata*) and alpine vetch (*Astragalus alpinus*), grow on the windswept heights of the Sleeping Giant. Some western species, such as showy locoweed (*Oxytropis splendens*) and plains pussy-toes (*Antennaria parvifolia*), also grow on the Sleeping Giant. Both of these species appear to be at the eastern limit of their range in the park. Species of more southerly affinities have also found suitable habitat on protected sites in the interior, such as the small wood sorrel (*Oxalis acetosella*) which grows on the middle of an island in Marie Louise Lake.

Open cliff and open talus

The diabase cliffs and talus slopes of the Sleeping Giant form a rare type of open habitat in a forested area, with sparse vegetation dominated by shrubs, mosses and lichens. The diabase cliffs also provide a relatively nutrient rich substrate. These conditions

Sleeping Giant Background Information

combine to form to rare to uncommon vegetation types in Ontario; Basic Open Cliff Type and Basic Open Talus Type (Bakowsky 2002).

Ferns and fern allies

Sleeping Giant Provincial Park hosts forty-four species of ferns and fern allies. Fern allies include Clubmosses, Spikemosses, Quillworts and Horsetails. Some species of fern allies prefer wet calcareous (limey) soils.

Although ferns grow in most habitats, many visually striking species are found on the cliffs and talus slopes of the western shore of the peninsula and particularly in the moist ravines of the mesas of the Sleeping Giant. Among the park's most significant ferns are Braun's Holly Fern (*Polystichum braunii*), and two arctic-alpine disjuncts Alpine Woodsia (*Woodsia alpina*), and Smooth Woodsia (*Woodsia glabella*).

Significant Plant Communities

Orchids

Orchids require specific microhabitats. Much of the Sibley Group and Rove Formation materials are calcareous and much of the east side of the peninsula is covered by limey gravel till and lacustrine material. Along the west margin of the Giant, the bedrock is relatively lime-poor quartz sandstone and diabase that has been glacially stripped of overburden. The unusual high lime soils created from this sedimentary bedrock and glacial overburden create a wealth of very rich wetland fens favoured by some orchid species.

Logging activity that began in the park in the 1860s created extensive disturbance that other species of orchid prefer. With the cessation of widespread logging in the park in the early 1960s, and completely in the early 1980s, these habitat areas for some orchids began to decline. Initially with the shade of successional species closing in the roads, and then with the high light and moisture conditions encouraging the growth of more acid sphagnum mosses in thick mats. This former disturbed habitat is now severely limited and some populations of orchids now exist as relics.

Botanists have been visiting Sleeping Giant Provincial Park since the early 1900s. In 1993, a survey of the park's orchids was conducted and the presence of twenty-three of thirty-two recorded species were confirmed, including two of Ontario's rarest, Bog Adder's-mouth and the Small Round-leafed Orchis. Johnson (1993) cites a new form of

this orchid: Immaculata on a site near Fork Bay as a new orchid for Ontario. Table 3 summarizes orchid species and their provincial status. ¹

Table 3 Orchid Species

| Latin Name | Common Name | S-Rank |
|---------------------------------|---------------------------------|---------------|
| <i>Cypripedium acaule</i> | Pink Moccasin Flower | S5 |
| <i>Cypripedium calceolus</i> | Large Yellow Lady's-slipper | S5 |
| <i>Cypripedium reginae</i> | Queen's Lady's-slipper | S4 |
| <i>Amerorchis rotundifolia</i> | Small Round-leafed Orchis | S4/S5 |
| <i>Platanthera dilatata</i> | Tall White Bog-orchid | S5 |
| <i>Platanthera hypnobia</i> | Tall Northern Green Orchid | S5 |
| <i>Platanthera obtusata</i> | Blunt-leaf Orchid | S4/S5 |
| <i>Platanthera orbiculata</i> | Large Rounded-leafed Orchid | S2 |
| <i>Coeloglossum viride</i> | Long-bracted Orchid | S4 |
| <i>Pogonia ophioglossoides</i> | Rose Pogonia Orchid | S4/S5 |
| <i>Arethusa bulbosa</i> | Swamp Pink | S4 |
| <i>Spiranthes lacera</i> | Northern Slender Lady's-tresses | S4/S5 |
| <i>Spiranthes romanzoffiana</i> | Hooded Lady's-tresses | S5 |
| <i>Spiranthes l. x r.</i> | Hybrid Lady's-tresses | S2? |
| <i>Listera auriculata</i> | Auricled Twayblade | S3 |
| <i>Listera cordata</i> | Heart-leafed Twayblade | S5 |
| <i>Goodyera oblongifolia</i> | Giant Rattlesnake Plantain | S4 |
| <i>Goodyera repens</i> | Dwarf Rattlesnake plantain | S4/S5 |
| <i>Goodyera tessellata</i> | Tesselated Rattlesnake Plantain | S5 |
| <i>Corallorhiza maculata</i> | Spotted Coral-root | S5 |
| <i>Corallorhiza trifida</i> | Early Coral-root | S5 |
| <i>Malaxis monophylla</i> | White adder's-mouth | S4 |
| <i>Malaxis unifolia</i> | Green Adder's-mouth | S4/S5 |
| <i>Malaxis</i> | Bog Adder's-mouth | S1 |

¹ The Natural Heritage Information Centre (NHIC) compiles, maintains and provides information on rare, threatened and endangered species and spaces in Ontario. The NHIC assigns subnational ranks (SRANKS) for species and vegetation communities in Ontario. These range from S1 (extremely rare in Ontario, generally 5 or fewer locations) to S5 (demonstrably secure in Ontario). These ranks are from January 2003.

Sleeping Giant Background Information

| | | |
|-------------------------|---------------|-------|
| <i>paludosa</i> | | |
| <i>Liparis loeselii</i> | Fen Orchid | S4/S5 |
| <i>Calypso bulbosa</i> | Fairy Slipper | S4/S5 |

Arctic-alpine Disjuncts

The occurrence of arctic disjuncts on the coast, cliffs, mesas and crevasses of Sleeping Giant Provincial Park is of special significance. Plants of the arctic/alpine disjunct community have a normal range that includes alpine habitat in British Columbia, the Yukon Territory, and the state of Alaska (Pratt 1991), or arctic habitat like that found around Hudson Bay, James Bay and areas south to 63° North (Johnson 1987). With the retreat of the glaciers, arctic and subarctic plant communities colonized the new, unoccupied habitats. As the climate continued to warm, forest communities moved north displacing the tundra communities except in locations where the microclimate and geology allowed these disjunct plants to persist. Occurrence of these species in the area is of special significance due to the distance of these plants from their normal range. Sleeping Giant Provincial Park is a significant site for arctic/alpine disjunct plants on the north shore of Lake Superior. The cooler microclimate generated by Lake Superior is a primary factor controlling the distribution of these species.

During the summer of 2001, twenty-two species of alpine-arctic plants were recorded, in addition to two prairie/western disjuncts and one rare exotic type (Laliberté 2001). Species and their provincial status are summarized in Table 4; the last four entries are two plains' disjuncts, one rare eastern plant, and one exotic introduction.

Table 4 Disjunct Species

| Latin Name | Common Name | S-Rank |
|-----------------------------------|----------------------|--------|
| <i>Arnica cordifolia</i> | Heart-Leafed Arnica | S1 |
| <i>Astralagus alpinus</i> | Alpine Milk Vetch | S5 |
| <i>Calamagrostis purpurascens</i> | Purple Reed Grass | S1 |
| <i>Castilleja septentrionalis</i> | Northern Painted Cup | S5 |
| <i>Dryopteris fragrans</i> | Fragrant Cliff Fern | S4S5 |
| <i>Empetrum nigrum</i> | Black crowberry | S5 |
| <i>Hedysarum alpinum</i> | Northern Hedysarum | S4S5 |
| <i>Leymus mollis</i> | American Dune Grass | S4 |
| <i>Lycopodium selago</i> | Mountain Clubmoss | S3/S4 |

| | | |
|----------------------------|-------------------|----|
| <i>Pinguicula vulgaris</i> | Common Butterwort | S5 |
| <i>Polygonum</i> | Alpine Bistort | S5 |

| | | |
|---------------------------------|---------------------|------|
| <i>viviparum</i> | | |
| <i>Primula mistassinica</i> | Bird's-Eye Primrose | S4 |
| <i>Ranunculus lapponicus</i> | Lapland Buttercup | S5 |
| <i>Rubus acaulis</i> | Arctic Bramble | S5 |
| <i>Sagina nodosa</i> | Pearlwort | S4S5 |
| <i>Saxifraga paniculata</i> | Encrusted saxifrage | S4 |
| <i>Scirpus cespitosus</i> | Tufted Clubrush | S5 |
| <i>Selaginella selaginoides</i> | Northern Spikemoss | S4 |
| <i>Tofieldia pusilla</i> | Least Asphodel | S5 |
| <i>Trisetum spicatum</i> | False Oats | S4 |
| <i>Vaccinium vitis-idaea</i> | Lingonberry | S5 |
| <i>Woodsia alpina</i> | Alpine Woodsia | S2 |
| <i>Antennaria parvifolia</i> | Plains Pussytoes | S1 |
| <i>Oxytropis splendens</i> | Showy locoweed | S3 |
| <i>Polystichum braunii</i> | Braun's Holly Fern | S3 |

3.3.1 Planning Considerations

Much of the peninsula's forests have changed from Spruce dominated to balsam fir and trembling aspen dominated systems. Moreover, past logging, a lack of fire and successive infestations of the spruce budworm have devastated the balsam fir and white spruce component, killing most of the balsam fir and weakening much of the white spruce. Dead trees have been aggressively removed from the Marie Louise Lake Campground, but elsewhere in the park largely remain standing until downed by the forces of nature.

The current state of the park reflects a complex history of both anthropogenic and natural disturbance. The challenge at the present time is to determine what the future state of the park should be and to decide how best to get there. To this end, a "Fire in Parks" project was established to explore the options to maintain the biodiversity and ecological integrity of the park, while balancing this with the needs of the park users.

The project is a partnership between Lakehead University, MNR Fire and Ontario Parks and uses spatial/temporal modeling procedures to forecast future forest condition given the application of different management regimes e.g. a) Fire suppression, b) some prescribed natural fire, and prescribed burning and c) "natural fire" as previously occurred. Data from this project will be used to inform the preparation and development of a comprehensive vegetation/fire management plan for the entire park. The plan will address the associated issues of: dead balsam fir and white spruce, the

Sleeping Giant Background Information

reestablishment of red and white pine forests, hazards and the maintenance of ecological integrity.

Significant Features

Significant features at Sleeping Giant Provincial Park are provincially as well as regionally significant. These include:

- Crevasses, talus, and cliffs bathed in cold air, as well as the cool shoreline of Lake Superior provide habitat for alpine-arctic disjuncts
- Areas of lime rich soils and fens provide habitat for orchids and other rare plants.
- Relict White and Red pine populations that are in decline and indicate that the park is ready for its next major fire event
- Abundance of dead and dying balsam fir confirm the successional status of the park given a fire cycle of 140 – 200 years.

Constraints to Development / Use

- Sensitivity of arctic disjuncts
- Sensitivity of orchids and other rare plants

Considerations

- Protection of sensitive arctic-alpine disjunct vegetation around cliffs/talus and the shoreline of Lake Superior should be considered. Most of the arctic/alpine disjuncts in Sleeping Giant Provincial Park are located away from visitor traffic. It is advisable to keep exact locations of arctic-alpine disjunct communities vague to ensure these communities remain undisturbed. This helps to prevent trampling, and unauthorized collection (picking) of these plants within the park. There are other locations, such as Tee Harbour and the Chest trail, where populations of these plants are in areas with heavy foot traffic. The presence of arctic-alpine disjuncts may require signage and interpretive information to educate park users about their significance and sensitivity.
- Protection of sensitive orchids in a number of fens and other areas in the park should be considered. Most of the orchids in Sleeping Giant Provincial Park are located away from visitor traffic. It is advisable to keep exact locations of these communities vague to ensure that they remain undisturbed. This helps to prevent trampling, and unauthorized collection. There are publicly known locations of popular species such as Calypso, which may require signage and interpretive information to educate park users about their significance and sensitivity, especially photographers who remove discolored (but fertilized) blooms which leads to the eventual destruction of the colony.

- Nature Reserve designation for all of the talus slopes and diabase cliffs associated with the mesas of the Sleeping Giant. Nature reserve zoning should be considered for these provincially rare vegetation types.
- Vegetation management for the restoration of Red and White Pine populations using prescribed fire should be considered.
- Vegetation management of dead and dying Balsam Fir using prescribed fire should be considered.
- Additional inventory and monitoring as well as vegetation management direction for rare/sensitive species such as disjuncts and orchids should be considered.

Wildlife

Over the last century, the peninsula's forest composition has changed as a result of natural and human caused disturbances (e.g., logging, fire, roads, spruce budworm). The peninsula's wildlife has also changed over this same time period, suggesting that these factors (i.e. disturbance and wildlife composition and abundance) are related. Many other factors (e.g., predation, disease, climate, and stochastic processes) also affect wildlife and thus, may influence the peninsula's composition and abundance.

The Sibley Peninsula is a feature that can affect wildlife behavior via its context in the landscape. For example, annually migrating wildlife (birds, bats) tend to concentrate on the peninsula as individuals use it as a stepping stone to cross large expanses of water (i.e., Thunder Bay, Black Bay, Lake Superior) along their migration route.

Mammals

Before the turn of the last century, woodland caribou (*Rangifer tarandus*) was the most abundant ungulate on the Sibley Peninsula; however, they are now locally extinct. The extirpation of the Sibley caribou population is consistent with the provincial trend of caribou population declines and extirpation following large-scale human disturbances. In contrast, the white-tailed deer (*Odocoileus virginianus*) and to a lesser extent moose (*Alces alces*) previously rare on the peninsula are now more abundant. Black bears (*Ursus americanus*), Marten (*Martes americana*), and fisher (*Martes pennanti*) populations numbers have been variable over the years and are currently believed to be on the increase.

Bears are becoming problematic within the Park particularly in the Marie Louise Lake campground

Sleeping Giant Background Information

area. It is likely that bear numbers are artificially high as a consequence of additional food associated with the waste disposal site. Young or sick bears are often less capable of competing for this food and are displaced by dominant bears. The close proximity of the waste site to the campground as well as the presence of human food attracts these individuals to the campground, where bears become habituated to the availability of human food. This results in the “nuisance bear”.

The red fox (*Vulpes vulpes*) has always been common in the park and several phases (silver, cross, and black) have been observed. The residing population is believed to include descendants of captive foxes, which were raised until 1944 on a fox farm near Silver Islet.

Other mammals found in the park include the timber wolf (*Canis lupus*), coyote (*Canis latrans*), lynx (*Lynx canadensis*), mink (*Mustela vison*), river otter (*Lutra canadensis*), beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), least weasel (*Mustela nivalis*), ermine (*Mustela erminea*), long-tailed weasel (*Mustela frenata*), striped skunk (*Mephitis mephitis*), woodchuck (*Marmota monax*), short-tail shrew (*Blarina brevicauda*), masked shrew (*Sorex cinereus*), star-nosed mole (*Condylura cristata*), red-backed vole (*Clethrionomys gapperi*), deer mouse (*Peromyscus maniculatus*), eastern chipmunk (*Tamias striatus*), least chipmunk (*Tamias minimus*), red squirrel (*Tamiasciurus hudsonicus*), northern flying squirrel (*Glaucomys sabrinus*), snowshoe hare (*Lepus americanus*), little brown bat (*Myotis lucifugus*), big brown bat (*Eptesicus fuscus*), silver-haired bat (*Lasionycteris noctivagans*), and hoary bat (*Lasiurus cinereus*).

Birds

Close to two hundred bird species have been recorded in Sleeping Giant and the immediate vicinity. Of these, about 75 are known to nest in the park. The birds of the park are typical of the Boreal Forest and include a wide variety of songbirds, raptors, shore birds, waterfowl, etc.

In Canada, bird populations are monitored by volunteers who participate in the summer Breeding Bird Survey and the Christmas Bird Count, the Forest Bird Monitoring Program, and the Ontario Breeding Bird Atlas. Many bird species breed (or winter) in remote areas where it is difficult to monitor their relative abundance. To follow the population trends of these species (and others as well), migration

monitoring stations such as Thunder Cape Bird Observatory are necessary.

The Thunder Cape Bird Observatory was established on Government of Canada property at the tip of the peninsula in 1991. Here, research ornithologists and volunteers, capture, document and band birds from the beginning of spring migration until the end of fall migration. The Thunder Cape Bird Observatory is a joint project of the Thunder Bay Field Naturalists, Ontario Ministry of Natural Resources - Wildlife Assessment Program (OMNR-WAP), and Bird Studies Canada, working with Sleeping Giant Provincial Park and the Canadian Coast Guard.

Mist nets are used daily to catch birds that are identified, aged, sexed and weighed before receiving a leg band with an identifying number on it. Staff record birds swimming or flying by the Cape. The wooden tower allows an unrestricted view above the treetops towards the Giant. Some birds are also caught in Heligoland traps at the very tip of the cape. The data collected helps to assess bird population and migration trends.

Peregrine falcons (*Falco peregrinus*) were hacked from the cliffs of the park as part of Project Peregrine between 1990-1996. Peregrine falcons have been nesting along the cliffs of the peninsula since 1997 (Ratcliff 2002).

Amphibians and Reptiles

Sleeping Giant Provincial Park contains many lakes, ponds, and wetlands which provide suitable habitat for a variety of amphibians and reptiles. Although only a few amphibian and reptile species occur in the park due to range limits, those that are present are thought to be abundant. Some species found in the park include the red-spotted newt (*Notophthalmus viridescens*), blue-spotted salamander (*Ambystoma aterale*), red-backed salamander (*Plethodon cinereus*), eastern garter snake (*Thamnophis sirtalis sirtalis*), American toad (*Bufo americanus*), spring peeper (*Pseudacris crucifer*), green frog (*Rana clamitans*), mink frog (*Rana septentrionalis*), wood frog (*Rana sylvatica*), leopard frog (*Rana pipiens*), boreal chorus frog (*Pseudacris maculata*), as well as the western painted turtle (*Chrysemys picta bellii*), and snapping turtle (*Chelydra serpentina serpentina*).

Fish

Most of the inland lakes in Sleeping Giant Park are classified as either cool water (e.g., Marie Louise) or warm water lakes and contain the corresponding cool/warm water fish communities. Some cold water

Sleeping Giant Background Information

species do occur in the park. For example, rainbow trout (*Oncorhynchus mykiss*) and brook trout (*Salvelinus fontinalis*) are commonly found in Sibley Creek and Joe Creek in the spring and fall.

The main sport fish species in Sleeping Giant Provincial Park are perch (*Perca flavescens*), smallmouth bass (*Micropterus dolomieu*), largemouth bass (*Micropterus salmoides*) and northern pike (*Esox lucius*).

Some stocking of fish has occurred within the park. For example, Marie Louise Lake was stocked with 300 adult pickerel (*Stizostedion vitreum*) in the fall of 1994 in an attempt to reestablish the population. Based on angler reports, the reestablishment effort has been unsuccessful.

The boundary of Sleeping Giant Park includes a 400 metre buffer extending into Lake Superior, which contains a large variety of fishes, including lake trout (*Salvelinus namaycush*), whitefish (*Coregonus clupeaformis*), rainbow trout (*Oncorhynchus mykiss*), brook trout (*Salvelinus fontinalis*), chinook (*Oncorhynchus tshawytscha*) and coho salmon (*Oncorhynchus kisutch*).

3.3.2 Planning Considerations

Significant Features

- *Peregrine falcons nest on cliff faces along western boundary of the peninsula.*
- *The Sibley peninsula has a landscape effect on wildlife, vegetation, and disturbance patterns.*
- *The Sibley peninsula is an important migratory bird corridor.*

Constraints to Development/Use

- *Sensitivity of nesting sites to human disturbance, especially peregrine falcon and bald eagle.*

Considerations

- *Strategic wildlife inventory, with systematic monitoring to provide planners and managers with appropriate wildlife data to inform the management of wildlife populations should be considered.*
- *Nature reserve designation for all potential peregrine falcon nesting sites should be considered.*
- *Nature reserve designation south of the 'Chimney Trail' to avoid potential disturbance of migratory birds and affecting long-term migratory research conducted at Thunder Cape Bird Observatory should be considered.*

4.0 INVENTORY AND EVALUATION OF CULTURAL RESOURCES

Sleeping Giant Provincial Park is known to contain a number of cultural and historical values, including two historical zones. The first of these zones encompasses and protects the Brohm site, which is an archeological site that contains features related to the Paleo-Indian occupation of the north shore of Lake Superior. The artifacts found at this site are typical of hunting and gathering people and suggest that this location may have been visited repeatedly over many years, especially since it is considered to be an excellent location from which to intercept any migration of caribou along the shoreline. Other archeological surveys have identified a number of small native encampments in some of the sandy bays on the south shore of the peninsula. These sites represent short-term camps and span a time period from approximately 2,000 BC to European contact (OMNR, 1980).

The legend of Nanabosho, or the 'Sleeping Giant,' is another feature in the park's cultural landscape. According to legend, Nanabosho disobeyed the Great Spirit and tried to protect the secret of the silver that his people had hidden at Silver Islet by raising a large storm that sunk the white men's boats. As punishment for his actions, Nanabosho was turned into stone where he still lies today (Ontario Parks, n.d.).

The European history of the area is dominated by the discovery of silver on Silver Islet in 1868, which resulted in the establishment of a thriving mining community. Although the historic buildings of the mining community, which are primarily used as summer homes, are outside of the park boundaries, Sleeping Giant Provincial Park does contain an old cemetery. This cemetery forms the basis for the park's second historical zone. A commercial fishing community also existed at Tee Harbour from 1934-1943, when it was forced to relocate to Camp Bay, near the community of Silver Islet, due to rising lake-levels (OMNR, 1980).

Sleeping Giant Background Information

Interpretive Assessment and Themes

The interpretive assessment evaluates the interpretive and educational potential of the biophysical and cultural resources of the park, based upon the significance of the resources and their interpretability.

Primary interpretive resources tend to be dramatic or impressive rather than ordinary; they are rare rather than common. They serve as quality representations of a type of resource or value and are usually of provincial or national significance rather than regional or local interest. Primary interpretive resources can be highly educational because of their graphic illustration of some natural process.

Resources of relatively high interpretive value are used in the park's Natural Heritage Education (NHE) program to communicate their significance to park users. This program aims to enhance the park visitor's enjoyment and education by stimulating user interest. At Sleeping Giant, the primary interpretive themes include:

- The Sleeping Giant and associated features and legend.
- The transitional forest and its relationship to major biological themes of the park and Lake Superior.
- Botanical disjuncts and rarities, including rare orchids, arctic-alpine plants, and southern and western disjunct plants.
- The history of the Silver Islet Mine and the community of Silver Islet.
- The Palaeo-Indian occupation of the Sibley Peninsula and subsequent prehistoric cultures.
- Park wildlife viewing opportunities.

The geological significance of the park is also recognized in the NHE program. This includes the geologic history of the park, its geological relationships with other parks in the vicinity and the active geomorphic processes, which shaped the park's surface.

Sleeping Giant is designated as a major activity program level of service. Major activity programs emphasize personal service programming and self use to deliver major park themes, resource interpretation, recreational skills and park management messages. The park has a visitors' center in the Marie Louise Lake Campground from which the Natural Heritage Education program is administered.

A co-operating association, "Friends of Sleeping Giant Provincial Park", is a non-governmental, volunteer, not-for-profit, registered charitable organization governed by an elected board of directors. The Friends of Sleeping Giant were incorporated in 1993 and have been working with the park since 1994. Their purpose is to enhance and supplement the educational, recreational, research and resource protection programs and facilities of the park with which it is affiliated thereby increasing the public's understanding and appreciation of the park and the Ontario provincial park system. The membership is drawn from park visitors and individuals from the local community. In addition to its directors and volunteers, an association may also employ paid staff. Friends' activities may include such things as:

- Enhancing and supplementing the educational, recreational, research and resource protection programs and facilities provided in a park .
- Producing and selling educational and informational materials (i.e., trail guides, checklists, maps, newsletters, etc.).
- Selling souvenir items (i.e., crafts, postcards, etc. with a connection to park themes and that provide a tangible memento of a visit).
- Selling convenience items (i.e., film, batteries, insect repellent, etc.).
- Encouraging volunteer and community participation in its programs and those of the park.
- Raising funds, applying for grants, accepting donations and bequests, and re-investing the funds to further their charitable objectives.
- Organising special programs and events.

The Friends of Sleeping Giant operate the park store, sell ice and firewood, rent canoes and kayaks, host the Festival of the Giant and the Winter Open House. The friends of Sleeping Giant also fund summer student positions.

4.1 Planning Considerations

- *The role of Sleeping Giant Provincial Park within Parks Canada's proposed National Marine Conservation Area should be considered and refined.*
- *The contributory role of the Friends of Sleeping Giant.*
- *The quality and quantity of existing natural Heritage Education services and programs*
- *Consideration of additional interpretive themes to include the Keweenawan diabase sills/dikes and Sibley sediments, and the old growth red and white pine.*

5.0 RECREATION INVENTORY AND ASSESSMENT

Recreation Features and Activities

A recreation inventory and assessment (Barry 2001) was completed for Sleeping Giant Provincial Park during the summer and autumn of 2001 and updated in the summer of 2002. This process was completed in accordance with the *Ontario's Living Legacy Guidelines for Recreation Resource Inventory, Version 2 – June 2001*, which takes a biophysical approach to understanding recreation.

Recreation features are biophysical or cultural attributes that may be able to support recreational activity. Recreation activities are closely related to the recreation features, although there is not necessarily a direct correlation, as one feature may have the potential to support a variety of recreational activities. The following sections provide more detail on the key activities recorded during this process.

Camping

With both car-camping and interior camping opportunities, Sleeping Giant Provincial Park has become a major destination for outdoor recreationists. Based on records kept by the park from 1998 to 2001, an average of almost 10,000 people visited the park each month throughout the summer season (almost 18,000 a month during July and August). Of this number, approximately 8000 people are camping in the main campground and an additional 71 people camp in the interior. These numbers are even higher in the peak season, as the average number of camper nights spent in the Marie Louise Lake Campground in July and August is about 15,000 and approximately 84 interior permits are sold. Based on these numbers, summer camping is the most popular activity in the park as over 75% of the visitors utilize the park's camping facilities.

The Sleeping Giant Provincial Park visitation statistics are not the only indication of the park's important role in regional tourism and recreation, as over half of the 210 respondents included in the 1996 camper survey indicated that the park was their main destination. An additional 34.8% stated that the park was one of several planned destinations and only 12.4% of the respondents used the park as an unplanned stopover enroute. Visitors also appeared to stay for an entire weekend and may have returned several times over the course of the season, as the average length of stay for these campers is 2.2 nights and over half of them are return visitors (Bramhall, 1997).

Hiking

Backpacking and hiking are known to be very popular activities among the visitors to Sleeping Giant Provincial Park. Well over half (65.2%) of the respondents in the 1996 survey went on non-guided trail hikes (Bramhall, 1997)². Based on this percentage and the average number of campers in the park each month during the summer season, it is estimated that at least 20,000 people hike in the park each year. An additional 37% (Bramhall, 1997), roughly 15,000 people, indicated that they spent most of their time hiking. Since an average of 71 interior permits are sold each month during the 2001 summer season (an average of 84 permits during July and August), a significant number of people also engage in longer backpacking trips. The variety provided by the Sleeping Giant trail system might account for its popularity since park visitors can choose from a diverse trail system to accommodate a range of skill levels. They also travel through a wide ridge of natural environments and recreational settings from the scrubby vegetation on top of the giant to the wetlands around Gardner Lake and to the shores of Lake Superior. The trails were also rated as having both a high level of importance and performance in the 1996 Camper Surveys, which reiterates the idea that people come to the park to hike and are generally pleased with what the park has to offer (Bramhall, 1997).

Mountain Biking

Although the 1988 Park Management Plan indicates that cycling would only be permitted on park roads, mountain biking has become a very popular non-conforming activity on the park's trails. Many visitors use bicycles to gain access to interior hiking trails and campsites. The Tee Harbour section of the Kabeyun Trail is a very popular cycling trail because it requires a relatively short ride to a hiking trail that provides access to the top of the "Sleeping Giant". Bicycle use has led to a significant increase in the number of visitors in the interior and has led to a number of concerns regarding impact of growing recreational use on these areas. In addition to the number of visitors using bicycles as a means of transportation, the park's trails are also utilized by people who come to enjoy the unique and challenging mountain biking opportunities provided by the park's rugged and diverse terrain. The Sawyer Bay Trail is a popular cycling trail that offers aggressive hills for the ardent rider. More extreme mountain bikers use the park's extensive network of

² These numbers should not be considered to be accurate and were only included in this report to provide some basic quantitative analysis and as a basis for comparison.

Sleeping Giant Background Information

ski trails, however the extent of this use is not fully known.

In 1996, approximately one quarter of the campers included in the survey cycled for at least half an hour during their visit, while almost 90% indicated that bicycle rentals were an essential/desirable service (Bramhall, 1997). Although the park itself does not offer bicycle rentals, the Silver Islet General Store, located just outside the park boundaries, does provide this service.

Winter activities

The groomed ski trails described in Section 2.0 are used by a wide range of cross-country skiers from beginners to racers for both classic and skate skiing. The number of permits sold by the Thunder Bay Nordic Trails Association provides an indication of winter use since these permits allow the holder to use the ski trails at both Sleeping Giant and Kakabeka Falls Provincial Parks. In the 2001 season, 1,171 permits were sold; a proportion of this number visits the park to ski throughout the winter season.

The Sibley Ski Tour, which has taken place on the first Saturday in March since 1978, also attests to the popularity of cross-country skiing. Participants have the option to enter in 10, 20 and 50-kilometre routes. In recent years, this event has been attracting approximately 1000 participants from across Canada, the United States and Europe as well as spectators and volunteers. In 2001, 1000 vehicles were recorded in the park for the Sibley Ski Tour and, based on the average vehicle occupancy of 2.1 people used by Ontario Parks in the calculation of visitation statistics, approximately 2100 people came to the park for the tour. The park also hosts other events in the winter season: the Friends of Sleeping Giant Winter Open House and the Silver Dog Sled Race, which both have the potential to draw people into the park. In the winter of 2001, the combined participation in these two events was over 800 people.

Water Sports

The large number of inland lakes and the park's location on Lake Superior facilitate a wide range of water sports, including boating, canoeing, sea kayaking, sailing, scuba diving, and swimming. The 1996 survey indicated that 56.2% of the respondents participated in swimming and wading for at least half an hour during their visit. Yet, the survey also seemed to suggest that other types of water sports are not very popular activities, as canoeing and motor boating (the only other water sports included in the survey) had a combined rate of participation of

slightly more than 20% (Bramhall, 1997). Based on these two percentages and the average number of campers (since the participation rates were only developed for overnight visitors) in the park each month during the summer season (5 months), it is estimated that over 30,000 people engage in water sports at the park each year.³ However, the information collected during the recreation inventory suggests that the actual rate of participation in these and other types of water sports may be much higher.

The introduction of canoe and kayak rentals at Marie Louise Lake has the potential to increase participation in water sports. Water sports at Sleeping Giant Provincial Park also received some additional marketing in a 1999 sea kayaking guide of Lakes Superior and Michigan. This guide included both beginner and intermediate trips around the Sibley Peninsula. The beginner trips include a round trip from Silver Islet to the Sea Lion (Perry Bay) and an overnight trip with camping at Tee Harbour. The intermediate trip continues around Thunder Cape and overnights at Sawyer Bay before returning the same way. The guide also acknowledges that kayakers could continue north from Sawyer Bay (Newman et al., 1999).

A 1999 study on human use of the proposed National Marine Conservation Area (NMCA), which stretches from Thunder Cape to the Slate Islands, also provides further insight into water-based recreation at Sleeping Giant Provincial Park. The study described the area from Thunder Cape to Middlebrun Bay as exhibiting a very high degree of use by sailors. The eastern shore of the park was rated as having a medium degree of use, while the western (Thunder Bay) shore was outside the study area. The report also highlighted the park's contribution to sailing routes between Thunder Bay and the Black Bay Peninsula, as Sawyer Bay, Tee Harbour, Middlebrun Bay, Finlay Bay and Squaw Bay were all identified as anchorages and harbours for people using these routes (Foster et al., 1999).

The NMCA study also indicated that sport divers use the area around Silver Islet a great deal (Foster et al., 1999). Although these waters are not included in the park boundaries, this activity can be considered an important adjacent land use, especially since these divers may be using the park as a home base.

³ These numbers should not be considered to be accurate and were only included in this report to provide some basic quantitative analysis and as a basis for comparison.

Sleeping Giant Background Information

Nature Activities

The nature activities category includes a variety of recreation activities that currently exist or have future potential at Sleeping Giant Provincial Park. One of the largest elements of this category is the park's natural heritage or interpretive program since 59.5% of the visitors included in the 1996 survey indicated that they spent at least half an hour visiting historical and nature displays. In addition to the displays found at the Visitor's Centre, the educational guided hikes that are conducted by NHE staff throughout the summer are quite popular, as over 15% of the respondents indicated that they have participated in such activities (Bramhall, 1997).

This category also includes other activities that were not specifically addressed in the survey such as drawing and painting, individual nature study, relaxation, and solitude. Although there is no specific data on these activities and they were not directly encountered during the recreation inventory, the park does contain features that support such activities.

Viewing

The camper surveys conducted by Ontario Parks examine two different types of viewing opportunities: viewing/photographic nature and visiting viewpoints/lookouts. Of the 210 people surveyed at Sleeping Giant in 1996, 55.7% viewed and photographed nature while 51% visited viewpoints and lookouts (Bramhall, 1997). Wildlife and scenic viewing are most likely enjoyed in conjunction with other recreational activities since areas that have been identified as productive wildlife habitat and scenic viewpoints have been incorporated into the park's trail system.

Fishing

Sport fishing had one of the lowest participation rates in the 1996 survey at 14.3% (Bramhall, 1997), however this number is potentially higher given that the survey had a low sample size and focuses primarily on overnight visitors. Furthermore, it could not account for visitors or local residents who may be accessing the park from the water and utilizing the portions of Lake Superior that have been included in the park boundaries. Ice fishing also occurs in the park for, as mentioned in Section 2.0, local anglers pack down the trail to Sawyer's Bay. Ice fishing is also advertised as one of the many activities that can be enjoyed during the Winter Open House, which happens in January and is organized by the Friends of Sleeping Giant Provincial Park.

Rock and/or Ice Climbing and Scrambling

Although the current Park Management Plan (1988) does not address the issue of rock/ice climbing or scrambling, these activities are known to occur in Sleeping Giant Provincial Park. A total of 22 rock climbing routes have been described in the vicinity of the Chimney on a website promoting climbing in the Thunder Bay area. Most of the routes are considered intermediate and were first climbed in the early 1980s. Although this website does not specifically address ice climbing, this activity also has the potential to occur within the park. Scrambling consists of ascending and descending rocky (i.e. talus) slopes on foot. Scrambling can damage or destroy the sensitive plant communities that grow on talus. The most well known and popular site for scrambling is located below the Chimney on the recently closed Chimney Trail.

5.1 Planning Considerations

- *Development of a comprehensive park trails system plan to include consideration of:*
 - *The condition of the hiking and interpretive trails, and the effect of use on the surrounding soils and vegetation, so that the appropriate measures such as rationalization, closure, or rehabilitation can be taken before significant degradation occurs.*
 - *The condition of the Head Trail to determine the need for realignment or hard landscaping.*
 - *The effect of recreation on the earth and life science features, and especially on the rare plant species.*
 - *Limiting or providing guidelines on appropriate mountain bike use in the park's interior to help alleviate some of the pressure experienced in this area.*
 - *The provision of interpretative signage at Tee Harbour and other key areas to help prevent the trampling of significant vegetation and to encourage users to camp in the designated areas.*
- *The exact locations of significant sensitive species should not be made public information to help prevent trampling and collection.*
- *Consideration should be given to the impacts of sea kayaking on the shoreline of the park and to park operations i.e. camping, safety, enforcement.*
- *Consideration of the use of Tee Harbour and Sawyer Bay and shoreline by boaters who do not pay park fees.*
- *Access to Lake Superior via Silver Islet dock and consideration of the development of new access to Lake Superior from the park.*

Sleeping Giant Background Information

- Consideration of the appropriateness of rock climbing/ice climbing and scrambling within the park and prohibiting, limiting or providing guidelines to control these high risk activities.
- Consideration of more active interior use and day use management i.e. reservation/quota system, enforcement, campsite rationalization and rehabilitation, new entry control, pay and display metres.
- Consideration of alternatives to camping such as roofed accommodation in the interior i.e. primitive huts/shelters and in Marie Louise campground i.e. yurts, cabins.

6.0 MARKET ANALYSIS

The main users visiting Sleeping Giant for camping and day-use are from Thunder Bay and area. The next largest park user group is from the United States. Most campers are on vacation, Sleeping Giant is their destination and they have been to the park before. Visitors come to the park to enjoy nature and to hike. (*Provincial Park Camper Survey, Ontario Parks 1996 and Provincial Park Day Visitor Survey, Ontario Parks 1996*).

Park Use

Since 1988 there has been a significant increase in the use of Sleeping Giant Provincial Park as shown in Table 2. The park ranks fourth for total visitation numbers of the sixteen operational parks in the Northwest Zone for the 2000 operating season. (*Park Statistics, Ontario Parks 2000*)

A good indication of camper visitation levels is provided by the percentage occupancy of available campsites during the months of July and August. The occupancy levels have risen from 49 percent in 1988 to 80 percent in 2000, well above the zone average of 54 percent, as shown in Table 2.

Most visitors to Sleeping Giant are from Thunder Bay and area (50%). The second largest group of visitors are from the American Midwest (25%), specifically Minnesota Wisconsin and Michigan, (*Ontario Parks 1996; CAMIS 2001*). This is in contrast to the origins of park users on a province-wide basis where the majority of park visitors originate in the eastern and central parts of the province and only about 9% of visitors come from the United States.

Table 5: Park User Data 2000/1988

| | Sleeping Giant (2000) | Sleeping Giant (1988) | Northwest Zone (2000) |
|----------------------|-----------------------|-----------------------|-----------------------|
| Total Visitors | 57,801 | 37,638 | 774,095 |
| Total Day-use | 14,069 | 10,385 | 355,510 |
| Campers | 16,820 | 12,388 | 187,575 |
| Camper Nights | 43,732 | 27,253 | 418,673 |
| Av. Party size | 4.1 | 3.3 | 3.4 |
| Average stay | 2.6 | 2.2 | 2.4 |
| July/Aug % occupancy | 80 | 49 | 54 |

Day-use

Day-users are mostly local residents from Thunder Bay and area. They are members of family groups participating in picnicking and playing at the Marie Louise Lake beach, swimming, mountain biking, hiking, enjoying nature and the scenery.

Winter day-use for Sleeping Giant is significant. The park offers skiers 56 kilometers of groomed cross-country ski trails for both classic and skate skiing. The park has hosted the Sibley Ski Tour, the largest annual Nordic ski event in Northwestern Ontario, for twenty-five years. Day use also includes hiking and snowshoeing as well as visiting the park for special events such as the dog sled races and the Friends of Sleeping Giant Winter Open House.

Car Camping

The *Provincial Park Camper Survey, Ontario Parks 1996* provides a snapshot of park users and how they use Sleeping Giant. Family groups (57.4%) and families with friends (20.5%) account for the majority of campers at Sleeping Giant. Age distribution of campers is similar to other parks in the zone with the highest representation in the 25-44 and 0-14 age cohorts respectively.

When asked about the type of trip they were on, the majority of campers (87.7%) indicated Sleeping Giant was their primary destination. The average stay at the park is 2.6 nights, which is a shorter stay than the 3.5 night average for all provincial parks.

The 1996 survey shows that the majority of campers use tents (62.2%) for accommodations. Motor homes, tent and travel trailers, truck campers, and vans each account for less than ten percent of camping equipment used, however they cumulatively represent the balance. Provincially, only 52% of

Sleeping Giant Background Information

campers use tents. This may change at Sleeping Giant with the introduction of electrical service to almost half of the campsites as of 1999.

While respondents indicated general high levels of satisfaction for the parks' services and facilities, suggestions for improvement emphasized improvements be made to campground roads.

A variety of factors will, over time, affect the demographic profile of park users. Those factors include the influence of the aging 'baby boomers', immigration, recreation, and travel preferences. The 1997 Ontario Consumer Survey for Ontario Parks, undertaken by COMPAS Inc., investigated a variety of factors that might encourage Ontario residents to visit a Provincial Park. The survey indicated that the provision of accommodations and a convenience store were motivations among non-park users. It also indicated that the provision of cabins/shelters would motivate visitors to use parks more in the autumn, winter and spring.

Great Lakes Heritage Coast Signature Site

The importance of Lake Superior's north shore is gaining recognition through the Great Lakes Heritage Coast Signature Site (GLHC). The GLHC is one of nine Ontario's Living Legacy Signature Sites with a range of significant natural features and world-class tourism and recreation values that warrant special strategies.

The GLHC extends 4,200 kilometres from Port Severn on Georgian Bay, including Manitoulin Cockburn and St. Joseph islands, to Pigeon River Provincial Park at the Ontario-Minnesota Border. Sleeping Giant Provincial Park is one of 71 new and existing provincial parks and conservation areas along the coast.

The parks of Lake Superior's northwest shore (Rainbow Falls, Neys, Sleeping Giant, Pigeon River, Ruby Lake, and the Slate Islands, to name a few), are noted for their rugged scenery and their range of low to moderate impact outdoor recreation opportunities. These parks provide exceptional opportunities for viewing, photography, nature study, hiking, car camping and interior camping, as well as boating, sailing, and sea kayaking. In addition to incorporating spectacular segments of shoreline, these parks are also highly accessible as stopovers for travelers on the Lake Superior Circle Route via Highway 17.

National Marine Conservation Area

Sleeping Giant also abuts Parks Canada's proposed Lake Superior National Marine Conservation Area. National Marine Conservation Areas are intended to protect the coastal marine resources of each of Canada's marine regions. These resources include the lakebed, its overlaying waters and wetlands, river estuaries, islands and coast.

6.1 Planning Considerations

- *The role of Sleeping Giant Provincial Park within Ontario's Living Legacy Great Lakes Heritage Coast should be considered and refined.*
- *The role of Sleeping Giant Provincial Park within Parks Canada's proposed National Marine Conservation Area should be considered and refined.*
- *Consideration of the potential for Ontario Parks to work with Tourism Thunder Bay, and the Ministry of Tourism, Culture and Recreation (MTCR) and Northern Development and Mines (MNDM) to optimize opportunities for marketing, partnering and packaging of Sleeping Giant Provincial Park.*
- *Consideration of camping alternatives such as roofed accommodation in the interior i.e. primitive huts/shelters and in Marie Louise campground, yurts, cabins.*
- *Consideration of the development of a park marketing plan consistent with the Northwest zone marketing plan.*

7.0 CLASSIFICATION AND ZONING

All provincial parks in Ontario fall into one of six classes: wilderness, nature reserve, historical, natural environment, waterway and recreation. Sleeping Giant is a Natural Environment class park. Natural Environment parks incorporate outstanding recreational landscapes with representative natural features and historical resources.

Parks are divided into zones for resource management purposes. There are six different types of zones, although not all zone types are compatible with all classes of parks. All lands and waters within a park are zoned for their most appropriate use based upon the natural and cultural features, existing and potential recreation activities, as well as existing development and site conditions. Zoning recognizes that within a park there are different features that require different management strategies.

Sleeping Giant contains all six zones: wilderness, nature reserve, natural environment, historical, development and access (Figure 8A).

Sleeping Giant Background Information

Wilderness Zones

- W1 Lizard Lake, 2950 hectares
- W2 Ferns Lake, 2210 hectares
- W3 Sleeping Giant, 9853 hectares

There are three wilderness zones in Sleeping Giant that include the large contiguous, mostly undeveloped, park areas which protect outstanding natural sectors of the park for recreational enjoyment and the educational benefit of the public. Opportunities for extensive low impact/non-mechanized recreation include hiking, viewing, nature study and interior camping. Development is limited to trails and complementary interior camping areas with fire rings and primitive privies, signs for route and campsite identification and the potential for primitive shelters as determined by the Trail System Plan.

A number of activities within W3 (Sleeping Giant wilderness zone) are occurring as non-conforming uses. Such activities include mountain biking on non-designated trails, rock/ice climbing, and the use of motorized equipment for trail maintenance, ski trail grooming and emergency access vehicles.

Nature Reserve Zones

- NR1 Joeboy Lake, 503 hectares
- NR2 Sifting Creek, 697 hectares
- NR3 Pickerel Lake, 98 hectares
- NR4 Marie Louise, 30 hectares
- NR5 Grassy Lake, 180 hectares
- NR6 Middlebrun Bay 423 hectares

The nature reserve zone designation recognizes the fragility of earth and life science features, which require management distinct from that in adjacent zones. Only scientific, educational and interpretive use is permitted in these zones. Development is limited to trails, necessary signs, minimal interpretative facilities, and temporary facilities for research and management. The nature reserve zone NR4 Marie Louise restricts all development.

NR5 envelops H2 (Silver Islet Cemetery historic zone).

A number of activities within NR2 (Sifting Lake nature reserve zone) are occurring as non-conforming uses. Such activities include use of motorized equipment for trail maintenance, ski trail grooming and emergency access vehicles and the emergency helipad.

Historical Zones

- H1 Brohm Site, 49 hectares

- H2 Silver Islet Cemetery, 1 hectare

There are two historical zones in the park which include an archaeological site with evidence of the earliest known occupation of the Sibley Peninsula H1 (Brohm Site), and H2 (Silver Islet Cemetery). These are significant historical resources requiring management distinct from that in adjacent zones. The historical zones provide opportunities for heritage appreciation and research, supported by minimal development such as trails, signs, research and management facilities, and historical restoration or reconstruction where appropriate.

Natural Environment Zones

- NE1 Rita Lake, 2300 hectares
- NE2 Sibley Creek, 387 hectares
- NE3 Lake Superior, 2401 hectares

The natural environment zones include a wide strip of the land east of Hwy 587, running the length of the park (NE1 and NE2), and extending 400 meters into the waters of Lake Superior (NE3) around the park's perimeter. The natural environment zones provide opportunities for nature appreciation and low-intensity day-use recreation, supported by minimum development such as trails, signs, minimal interpretative facilities, and simple facilities to support low-intensity recreational activities.

A number of activities within NE1 (Rita Lake natural environment zone) are non-conforming uses. Such activities include the park waste disposal site, the sewage lagoon, the use of motorized equipment for trail maintenance, a target shooting range, ski trail grooming and emergency access vehicles.

Development Zones

- D1 Marie Louise Lake, 1331 hectares
- D2 Finlay Bay, 378 hectares

Sleeping Giant Background Information

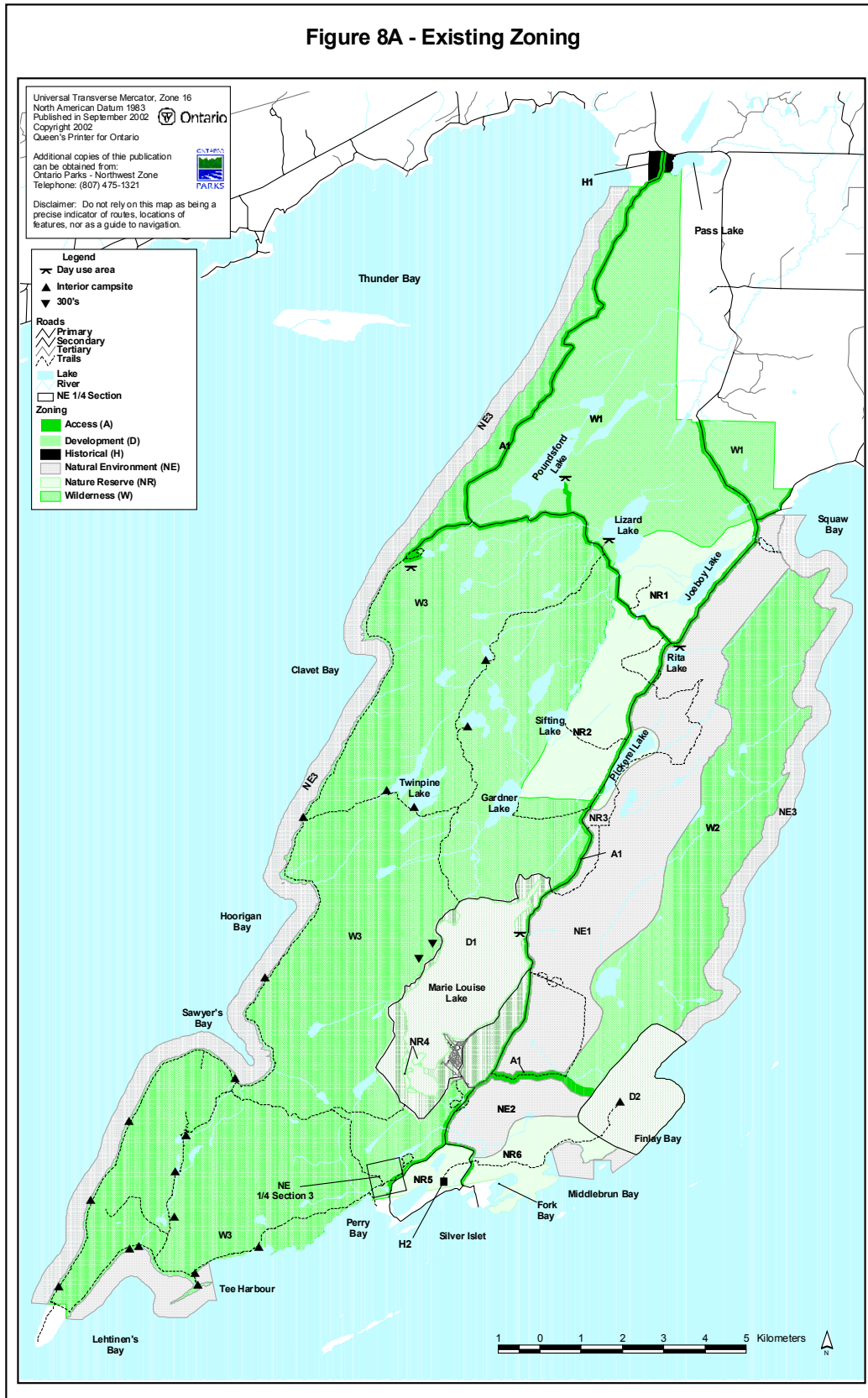


Figure 8A: Existing Zoning

Sleeping Giant Background Information

There are two development zones within the park. User activity and facility development is concentrated in D1 (Marie Louise Lake Campground). Existing development consists of campgrounds, day-use areas, the park administrative complex, Ontario Ranger Camp, and a small gravel pit used solely for park purposes.

Development at D2 (Finlay Bay) has not occurred.

Resource management in the development zone will emphasize the maintenance of the integrity of the natural resource base and the quality of the recreational experience. The development zone provides opportunities for moderately intensive recreation, with the emphasis on car-camping, day-use, interpretation and related activities.

Access Zones Access zones provide avenues to a number of recreational areas in the park and serve as staging areas where minimum facilities support use of nature reserve and wilderness zones, and less developed natural environment and historical zones.

Access zone

- A1 600 hectares

The Highway 587 access corridor, which bisects the park, includes parking areas for all trails along this surfaced highway. Its ditches contain a buried high-voltage power cable that services the Marie Louise Lake campground. The gravel road from Rita Lake to the Thunder Bay Lookout is a two-way road providing access to park trails, picnic areas and the Thunder Bay Lookout view platform. The section of this road that continues from Thunder Bay Lookout to Pass Lake is a one-way road, for emergency use only. The access zone contains signs and two information/self registration kiosks (Rita Lake and the south Kabeyun parking lot).

The access corridor to Finlay Bay has not been developed.

7.1 Planning Considerations

- *Zoning adjustments to reflect new information about sensitive species, non-conforming uses, and new activities.*

8.0 PLANNING ISSUES IDENTIFIED TO DATE (not ranked)

The following represents a listing of issues identified to date; additional issues may arise during public consultation/review of the background information. This section should be reviewed in conjunction with the Planning Considerations sections (3.2.1, 3.3.1, 3.3.2, 4.1, 5.1, 6.1, and 7.1).

- The role of Sleeping Giant Provincial Park within both Ontario's Living Legacy Great Lakes Heritage Coast and within Parks Canada's proposed National Marine Conservation Area should be considered and refined.
- The potential for Ontario Parks to work with Tourism Thunder Bay, and the Ministry of Tourism, Culture and Recreation (MTCR) and Northern Development and Mines (MNDM) to optimize opportunities for marketing, partnering and packaging of Sleeping Giant Provincial Park.
- The development of a park marketing plan consistent with the Northwest zone marketing plan.
- Activities occur in the park that do not conform to 1988 park management plan and park policy. Examples include mountain biking on trails that are not designated for cycling, rock/ice climbing and scrambling, use of motorized equipment on park trails for maintenance and ski trail grooming, the shooting range, and the waste disposal site.
- Monitoring and management of the hiking and interpretive trails, and the effect of use on the surrounding soils and vegetation.
- Wildlife inventory and monitoring.
- Vegetation inventory and monitoring as well as fire management.
- Consideration of more active interior, shoreline, and day use management i.e. reservation/quota system, enforcement, campsite rationalization and rehabilitation, permanent boat moorings at Sawyers Bay, Tee Harbour and Finlay Bay, new entry control (on the Hwy. 587 corridor), pay and display meters.
- Adjustments to zoning to increase protection of significant earth and life science features and sensitive wildlife habitat.
- Adjustments to zoning to address non-conforming activities.
- Consideration of the prohibition of the recreational use of motorboats on Marie Louise Lake.

Sleeping Giant Background Information

- Consideration of the prohibition of personal watercraft (PWCs) within the park boundary on Lake Superior.
- Consideration of additional interpretive themes to the NHE program including:
 - The Keweenawan diabase sills and diabase dikes as well as the Sibley sediments.
 - Old growth red pine and white pine.
- Camping and camping alternatives i.e. alternative roofed accommodation in the interior i.e. primitive huts/shelters and yurts and/or cabins in Marie Louise Lake campground.
- Improved access to Lake Superior. With the increased number of visitors to the park, establishment of the Great Lakes Heritage Coast Signature Site and proposed National Marine Conservation Area, demand for access to Lake Superior via Silver Islet dock has increased and will continue to do so.
- Concern by some residents of Silver Islet, about the increasing number of visitors to Silver Islet and the resulting traffic congestion. This is in part due to the increased number of visitors to the park, as well as the use of the Silver Islet dock by outfitters accessing both the park and Lake Superior. It is also due to initiatives at Silver Islet such as the General Store, bicycle rentals and artisan shops.

Additional Issues may be identified during planning and public consultation.

Your Personal Invitation

As someone with an interest in the long-term management of Sleeping Giant Provincial Park, you are invited to participate in the management planning process. Any comments, concerns or suggestions regarding this Background Information document, especially the issues and options that have been identified above, or any other aspect of park management planning are welcome. Please take the opportunity to submit your comments to the superintendent of Sleeping Giant Provincial Park (see below).

The Ministry of Natural Resources/Ontario Parks is collecting comments and Information regarding the Sleeping Giant Management Plan under the authority of the *Provincial Parks Act* to assist in making decisions and determining further public consultation needs. Comments and opinions will be kept on file for use during the plan review period and may be included in study documentation, which is made available for public review.

Under the *Freedom of Information and Protection of Privacy Act* (1987), personal information will remain confidential unless prior consent is obtained. However, the information may be used by the Ministry of Natural Resources/Ontario Parks to seek public input on other resource management surveys and projects. For further information regarding this Act, please contact Dave Jackson in Thunder Bay at (807) 473-9231.

Please direct your comments and questions to:

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Sleeping Giant Provincial Park
Management Plan Review
435 James Street South Suite 221 D
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Email: cam.snell@mnr.gov.on.

Sleeping Giant Background Information

Table 6: REVIEW OF 1988 PARK MANAGEMENT PLAN IMPLEMENTATION PRIORITIES

| Objective/Target | Status |
|---|---|
| 1. Provide year-round trail facility which offer opportunities for back country hiking, cross-country skiing and snowshoeing. | Accomplished |
| 2. Provide the opportunity for the development of high quality, year-round recreational facilities appropriate to the park's natural setting while minimizing impacts on the environment. | Visitors center at Marie Louise Lake Campground is complete |
| 3. Acquire the Sea Lion property (approximately 11 hectares.) | Surface rights acquired. |
| 4. Acquire the mineral rights of the northeastern quarter of Section 3 (approximately 65 hectares.) | Not completed |
| 5. Relocate road around Brohm site. | Not completed |
| 6. Finlay Bay development to provide year-round alternative accommodation, provide access to Lake Superior, and attract a broader range of clientele to the park. | No development to date. |
| 7. Develop resource management plans for: <ul style="list-style-type: none"> ➤ Aggregate extraction ➤ Waste disposal (with ultimate waste site closure) ➤ Trail system ➤ Silver Islet Cemetery, in accordance with the Cemeteries Act ➤ Marketing | The Aggregate, Trail System, and Silver Islet Cemetery plans have been drafted but not approved. The Waste disposal site use has been extended. A Marketing Plan was not completed. |
| 8. Monitor water quality in development zones in accordance with Provincial Health standards. | Ongoing |
| 9. Maintain the Marie Louise Lake dam to control water levels for swimming and fish spawning. | Ongoing |
| 10. Allow the Joeboy Lake dam to deteriorate naturally. | Ongoing |
| 11. Privatization of maintenance. | Washroom cleaning was contracted briefly. |
| 12. Remove the hazardous buildings at Sawyer Bay and assess the log building for upgrading. | The hazardous buildings have been removed and upgrading of the log building is ongoing. |
| 13. Encourage interest groups and individuals to become involved in developing park programs. | Ongoing (e.g. Friends of Sleeping Giant) |
| 14. Redesign Marie Louise Lake Campground entry. | Completed |
| 15. Upgrade main campground roads. | Ongoing |
| 16. Rehabilitate existing campsites and expand to a maximum of 50 new campsites as demand exists. | Completed |
| 17. Supply electrical service to 50% of the campsites. | Completed |
| 18. Construct new gatehouse/entry control station. | Completed |
| 19. Reopen scenic drive around Marie Louise Lake to vehicular traffic. | Completed |
| 20. Upgrade day-use area at Marie Louise Lake Campground to provide quality picnicking, sunbathing and swimming opportunities. | Completed |
| 21. Facilities improvement will include open-space play areas, adventure playgrounds, amphitheatre, picnic shelters, new water system, Park office, staff residence complex, maintenance facilities, comfort stations with flush toilets, laundry facilities and showers, trailer dumping station and a visitor center. | Completed with exception of staff residence complex which is to be initiated in spring of 2003 |
| 22. Participate in the planning of the Highway 587 upgrade. Work in conjunction with the Ministry of Transportation, Ontario Hydro and Bell Canada to bring electricity and upgraded phone service to the Marie Louise Lake Campground. | Completed up to Marie Louise Lake campground |
| 23. Upgrade the scenic park road between Pass Lake and Rita Lake. | Not completed |
| 24. Locate a visitor reception (entry control) building and parking area at the north end of the park in the vicinity of Pass Lake in zone A1. | Not completed |

Sleeping Giant Background Information

Table 7: PARK MANAGEMENT OVERVIEW 1988-2001 - PARK IMPROVEMENTS

| Year | Improvement | Year | Improvement |
|-------------|--|-------------|---|
| 1989 | <ul style="list-style-type: none"> ➤ public dock ➤ second comfort station ➤ gatehouse ➤ amphitheatre ➤ replace twelve vault privies ➤ lodge roof repairs ➤ upgrade water system | 1997 | <ul style="list-style-type: none"> ➤ phase #2 Hwy 587 reconstruction and bury high voltage cable ➤ conversion from diesel generators to hydro grid ➤ kitchen roof repairs ➤ construct 22 new campsites ➤ plant landscape trees in campground |
| 1990 | <ul style="list-style-type: none"> ➤ upgrade Marie Louise Lake Drive ➤ erosion control for campsites on Marie Louise Lake shores ➤ campsite rehabilitation ➤ purchase high voltage cable to service campground ➤ visitor centre and displays design work ➤ viewing platform design work for Thunder Bay Lookout | 1998 | <ul style="list-style-type: none"> ➤ upgrade pumps and controls for campground water system ➤ construct parking area at campground gatehouse ➤ four new vault privies ➤ repair road to Thunder Bay Lookout ➤ electrical service to 64 campsites |
| 1991 | <ul style="list-style-type: none"> ➤ new visitor center ➤ new viewing platform at Thunder Bay Lookout | 1999 | <ul style="list-style-type: none"> ➤ remove hazard trees from campground ➤ electrical service to 21 campsites ➤ new cold storage building ➤ roof repairs to staffhouse ➤ renovation to staffhouse washrooms ➤ vault privies renovations |
| 1992 | <ul style="list-style-type: none"> ➤ visitors center displays ➤ phase #1 Hwy 587 reconstruction and bury high voltage cable ➤ safety railings at Thunder Bay Lookout ➤ new septic field for trailer dumping station ➤ new cement block vault privy ➤ new adventure playground equipment ➤ electrical distribution design work | 2000 | <ul style="list-style-type: none"> ➤ upgrade surface of main road in campground ➤ upgrade comfort station shower controls ➤ new park office ➤ new Ontario Ranger Camp facility |
| 1993 | <ul style="list-style-type: none"> ➤ new audiovisual equipment for the visitors center ➤ realign campground entry ➤ new toilets ➤ upgrade telephone system | 2001 | <ul style="list-style-type: none"> ➤ asphalt campground entry parking area and landscape office area ➤ upgrade Thunder Bay Lookout road with gravel |
| 1994 | <ul style="list-style-type: none"> ➤ upgrade power distribution system | | |
| 1996 | <ul style="list-style-type: none"> ➤ renovate tile in comfort station showers | | |

Sleeping Giant Background Information

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