Cartier Moraine Conservation Reserve

Statement of Conservation Interest

March, 2003



Ministry of Natural Resources

Ministere des Richesse naturelles

i

Approval Statement

I am pleased to approve this Statement of Conservation Interest for the Cartier Moraine Conservation Reserve.

The Cartier Moraine Conservation Reserve captures a unique part of Ontario's geologic history and is composed entirely of Crown lands and waters. Regulated in December 2000, this 43-hectare conservation reserve is directly north of the town of Cartier and is located in the Territorial District of Sudbury, in Northeastern Ontario.

Direction for establishing, planning and managing conservation reserves is defined under the *Public Lands Act* and current policy. The direction for this conservation reserve is in the form of a Statement of Conservation Interest. which defines the area that is being planned, the purpose for which the conservation reserve has been proposed, and outlines the Ministry of Natural Resources' intent for the protected area. This Statement of Conservation Interest will provide guidance for the management of the conservation reserve and the basis for the ongoing monitoring of activities. More detailed direction is not anticipated at this time. Should significant developments be considered or complex issues arise that require additional studies, more defined management direction, special protection measures will be sought, and a more detailed Resource Management Plan will be prepared with full public consultation.

The public was informed and consulted prior to the regulation of the Cartier Moraine Conservation Reserve under the Public Lands Act as well as during the preparation and review of this Statement of Conservation Interest.

The Cartier Moraine Conservation Reserve will be managed under the jurisdiction of the Sudbury District Ministry of Natural Resources under the supervision of the Sudbury Area Supervisor as designated by the District Manager.

Jennifer Moulton Submitted by:

> and Natalie Avoledo Date: March, 2003

Recommended

for approval by: District Manager

Date

Table of Contents

LIST OF FIGURES	IV
LIST OF TABLES	IV
1.0 INTRODUCTION	1
2.0 GOALS AND OBJECTIVES	2
2.1 GOAL OF THE STATEMENT OF CONSERVATION INTEREST 2.2 OBJECTIVES 2.2.1 Short Term Objectives 2.2.2 Long Term Objectives	2 2
3.0 MANAGEMENT PLANNING	3
3.1 PLANNING CONTEXT	3
4.0 BACKGROUND INFORMATION	5
4.1 LOCATION AND SITE DESCRIPTION 4.1.1 Location. 4.1.2 Physical Site Description. 4.1.3 Administrative Description. 4.2 HISTORY OF THE SITE. 4.3 INVENTORIES	5 7 8
5.0 STATE OF THE RESOURCE	8
5.1 SOCIAL/ECONOMIC INTEREST IN THE AREA 5.2 FISHERIES AND WILDLIFE 5.3 NATURAL HERITAGE STEWARDSHIP 5.4 CULTURAL HERITAGE STEWARDSHIP 5.5 LAND USE/CURRENT OR PAST DEVELOPMENT 5.6 COMMERCIAL USE 5.7 TOURISM/RECREATIONAL USE/OPPORTUNITIES 5.8 CLIENT SERVICES	13 13 14 14 14
6.0 MANAGEMENT GUIDELINES	
6.1 MANAGEMENT PLANNING STRATEGIES 6.2 "STATE OF THE RESOURCE" MANAGEMENT STRATEGIES 6.3 PROMOTING INVENTORY MONITORING AND ASSESSMENT REPORTING AND RESEARCH 6.4 IMPLEMENTATION AND PLAN REVIEW 6.5 MARKETING	15 18 19
7.0 REFERENCES	20
8.0 MAPS	22
Map 1: Inset of Ontario showing location of Sudbury; larger map showing location of to Cartier Moraine Conservation Reserve in relation to Sudbury	22 23

MAP 5: SPECIES COMPOSITION.	25
MAP 6: AGE DISTRIBUTION	26
MAP 7: LANDFORMS.	27
9.0 APPENDICES	28
APPENDIX A: PERMITTED USES TABLE	28
APPENDIX B: SCI TEST OF COMPATIBILITY	32
APPENDIX C: PUBLIC AND ABORIGINAL CONSULTATION SUMMARY	37
APPENDIX D: STATEMENT OF CONSERVATION INTEREST AMENDMENTS	41

List of Figures

FIGURE 1: CLASTS RANGING IN SIZE ON THE CARTIER MORAINE CONSERVATION RESERVE	
FIGURE 2: LARGE ERRATIC BOULDER ON THE CARTIER MORAINE CONSERVATION RESERVE7	
FIGURE 3: NORTHEAST LAKE, WITHIN THE CARTIER MORAINE CONSERVATION RESERVE	
List of Tables	
Table 1. Logation and administrative petallic contribution Modernic Congenius Congenius (
TABLE 1: LOCATION AND ADMINISTRATIVE DETAILS FOR THE CARTIER MORAINE CONSERVATION RESERVE 5	
TABLE 2: INVENTORY AND SURVEY INFORMATION FOR CARTIER MORAINE CONSERVATION RESERVE	í

1.0 Introduction

The Province of Ontario is home to a broad range of climate types, geography, and plant and animal species, all of which contribute to the variety and abundance of natural resources found here. The Ministry of Natural Resources is the lead conservation and resource management agency in the province and is therefore responsible for the management of these resources, in particular, forests, fisheries, wildlife, mineral aggregates and petroleum resources, Crown lands and waters, and provincial parks and protected areas (MNR 2000).

The Ministry of Natural Resources (MNR) is committed to the protection of natural and cultural heritage values and as such has developed strategies that will maintain the integrity and sustainability of the parks and protected areas system. Recently the Government of Ontario conducted a major land use planning exercise, which resulted in the release of the Ontario's Living Legacy Land Use Strategy (MNR 1999). The Land Use Strategy (LUS) focuses on four specific objectives that were established to guide the planning process. These are: to complete Ontario's system of parks and protected areas; to recognize the land use needs of the resource-based tourism industry; to provide forestry, mining, and other resource industries with greater land and resource use certainty; and to enhance hunting, angling and other Crown land recreation opportunities. A major part of the Ontario's Living Legacy Land Use Strategy was the government's initiative to establish 378 new protected areas. This commitment marks the largest expansion of provincial parks and conservation reserves in Ontario's history.

The Cartier Moraine Conservation Reserve (C202) was created as part of this expansion. As a result, the planning and management of this conservation reserve is consistent with the policies outlined in the Land Use Strategy. This conservation reserve is regulated under the Public Lands Act (PLA). Prior to its regulation, MNR met the Environmental Assessment Act requirements for the establishment and management of this conservation reserve.

Ontario's network of natural heritage areas has been established to protect and conserve areas that represent the diversity of the natural regions of the province, including the species, habitats, special features and ecological systems which comprise that natural diversity. Protecting these natural heritage areas is key to the sustainable management of natural resources. It ensures that representative sites are retained in their natural state and can continue to contribute to Ontario's natural environment (OMNR 1997a).

In order to preserve these sensitive areas they require protection from incompatible uses to ensure their values will endure over time. Conservation reserves have been identified as a way of providing necessary protection from incompatible uses, while still permitting many of the traditional uses that allow the people of Ontario to enjoy our special heritage. An approved Statement of Conservation Interest (SCI) or a Resource Management Plan (RMP) will guide the management and administration of each conservation reserve.

The management direction for this conservation reserve is a Statement of Conservation Interest. As a stewardship document, the SCI is the minimum level of management direction established for this conservation reserve. SCIs define the area that is being planned, the purpose for which the conservation reserve has been proposed, and it outlines the Ministry of Natural Resources' intent for the protected area. This SCI will govern the lands and waters within the regulated boundary of the conservation reserve. However, to ensure MNR protection objectives are being fully met within the conservation reserve, the surrounding landscape and related activities must consider the site's objectives and heritage values. In addition, it is the intent of this SCI to create public awareness that will promote responsible stewardship of protected areas and surrounding lands. With management partners such as Ontario Parks, industry, local governments, etc. the MNR District Offices will be able to pursue and advance sound environmental, economic and social strategies and policies related to the protection of conservation reserves and provincial parks.

The purpose of this SCI is to identify and describe the values of the Cartier Moraine Conservation Reserve and outline the Ministry's management intent. The management direction will protect the site's natural heritage values for the benefit of all Ontario residents and demonstrate its compatibility within the larger sustainable landscape. This direction will comply with land use intent as stated by the *Ontario's Living Legacy Land Use Strategy* (MNR 1999).

The Cartier Moraine Conservation Reserve captures a unique part of Ontario's geologic history and is composed entirely of Crown lands and waters. Regulated in December 2000, this 43-hectare conservation reserve is directly north of the town of Cartier and is located in the Territorial District of Sudbury, in Northeastern Ontario. The guidelines for the management of this conservation reserve are found in this document.

2.0 Goals and Objectives

2.1 Goal of the Statement of Conservation Interest

The goal of a conservation reserve, as stated in Policy PL 3.03.05 (MNR 1997a), is to protect the natural heritage values on public lands while permitting compatible land use activities. The goal of this Statement of Conservation Interest is to provide the framework and direction to guide management decisions in order to ensure the Cartier Moraine Conservation Reserve will meet this goal through both short and long-term objectives.

2.2 Objectives

2.2.1 Short Term Objectives

Objective 1: To define the purpose for which the conservation reserve has been identified and to outline the Ontario Ministry of Natural Resources' management intent for the protected area.

Strategies:

 By identifying the state of the resource with respect to the natural heritage values being protected; By identifying current land use activities that are occurring on the land base.

<u>Objective 2:</u> To determine the best management strategy to protect the integrity of the values in the site.

Strategies:

- By determining the land use compatibility of current and potential land uses;
- By developing specific guidelines and prescriptions to manage existing and potential land uses.

Objective 3: To create public awareness of the values within this conservation reserve and promote responsible stewardship of the protected area.

Strategies:

- By creating fact sheets and pamphlets describing this conservation reserve and the resource(s) or values that it contains and protects.
- By seeking partnerships with local stakeholders to ensure the values of the site are properly protected.

This Statement of Conservation Interest meets the planning requirements for conservation reserves as determined in Procedure PL 3.03.05 which states that management plans must be written within three years of the regulation date (MNR 1997b).

2.2.2 Long Term Objectives

<u>Objective 1:</u> To determine the long-term management goals of the conservation reserve.

Strategies:

 By identifying the research needs, client services, and marketing strategies necessary to determine the position of this conservation reserve among the system of parks and protected areas in Ontario.

Objective 2: To determine the representative targets of the site.

Strategies:

- By identifying the scientific values in relation to provincial benchmarks;
- By identifying any monitoring or research necessary to identify and maintain the integrity of these characteristics beyond this plan.

Objective 3: To provide direction for the evaluation of new uses or economic ventures proposed.

Strategies:

 A Test of Compatibility shall be undertaken to evaluate the impact of suggested use(s), either positive or negative, on the protected values and administrative needs of the conservation reserve.

3.0 Management Planning

3.1 Planning Context

3.1.1 Planning Area

The planning area for this site will consist of the regulated boundary for the Cartier Moraine Conservation Reserve as defined in section 4.1.3 Administrative Description. This land base will form the area directly influenced by the Statement of Conservation Interest. However, the Cartier Moraine Conservation Reserve has been identified to conserve a portion of a larger earth science feature, and in order to ensure that the protection objectives are being fully met within the conservation reserve, the surrounding landscape and related activities must carefully consider the site's values. The Ministry of Natural Resources, in conjunction with other partners, will work to ensure that the values are protected since this feature extends beyond the regulated boundaries of the conservation reserve. Never the less, any strategies noted within this plan related to the site's boundary or beyond will need to be presented for consideration within a larger planning context.

3.1.2 Management Planning Context
The need to complete the parks and protected areas system has long been

recognized as an important component of ecological sustainability. This was reaffirmed in 1997 when the Lands for Life planning process was announced. Previous gap analysis studies were used to determine where candidate areas would be proposed in order to protect additional representative features. The Cartier Moraine was chosen as one of the candidate earth science features and subsequently appeared in the Ontario's Living Legacy Land Use Strategy (MNR 1999) as C202. The site was then regulated as Schedule 41, in Ontario Regulation 686/00 made under the Public Lands Act, December 20, 2000 and filed December 21, 2000 amending Ontario Regulation 805/94 (Conservation Reserves).

By regulation, under the Public Lands Act, this conservation reserve can not be used for commercial forest harvest or hydroelectric power development. Direction is provided in by the Ontario's Living Legacy Land Use Strategy (MNR 1999). Currently no mining tenure exists within the site and the site has been withdrawn under the Mining Act. Most recreational and noncommercial activities that have traditionally been enjoyed within the conservation reserve can continue provided that they pose little threat to the natural heritage values. Similarly, most non-industrial resource uses such as fur harvesting are permitted if they are compatible with the values of the reserve (MNR 1999). This SCI and future management will continue to try and resolve conflicts regarding incompatibility between uses and to ensure that identified values are adequately protected.

This Statement of Conservation Interest will only address known issues or current proposals with respect to permitted uses or potential economic opportunities brought forward to the District Manager during this planning stage. However, in terms of approving future permitted uses and/or development(s), there are established mechanisms in place to address such proposals. Any future proposals will be reviewed using the *Procedural Guideline B – Land Uses – Test of Compatibility Procedure PL 3.03.05* (MNR 1997b) or other standard MNR environmental screening processes (see Appendix A).

3.2 Planning Process

Management of a conservation reserve includes, as a minimum, the regulation, provision of public information, stewardship, and security. It also includes authorization and setting conditions on permitted uses and ongoing monitoring of compliance with the approved management document. Management of conservation reserves is the responsibility of the Ministry of Natural Resources at the district level, and will be done in accordance with Policy PL 3.03.05 (MNR 1997a) and an approved management document.

Once a conservation reserve has been established through the land use planning process it will be regulated under Section 4 of the Public Lands Act as an amendment to Ontario Regulation 805/94. Following the regulation it must be determined what level of management planning is required to fulfill the protection targets. There are two policy documents involved: a Statement of Conservation Interest (SCI) as the minimal requirement for providing planning direction, and a Resource Management Plan (RMP) which would deal with more complex issues where several conflicting demands are placed on the resources. The guidelines for the preparation of these documents are outlined in Procedural Guideline A -Resource Management Planning (Conservation Reserves Procedure PL 3.03.05) (MNR 1997b). The appropriate document must be completed within three years of the regulation date.

In most cases management direction for conservation reserves will take the form of a SCI. A SCI is the minimum level of planning direction required for a conservation reserve. This form of management direction is generally used when the conservation reserve is seen to have few or no issues associated with it and any issues that do exist are local in nature and can be easily addressed through this process. If major issues arise and/or it is recognized that new decisions will need to be made beyond what is directed in the *Land Use Strategy* (MNR 1999) a RMP is warranted.

For current planning purposes, the Cartier Moraine Conservation Reserve will be

managed under the auspices of a Statement of Conservation Interest. Interested parties from both the private and public sectors were consulted during the Ontario's Living Legacy (OLL) planning process from candidate conservation reserve to regulation. Following the regulation of the Cartier Moraine Conservation Reserve in December 2000, a Terms of Reference was written to direct the completion of the management planning for this site and four other conservation reserves that were regulated at the same time. The First Nations and the public were notified that the management planning for the five conservation reserves was beginning. This notification occurred via mail-out to the First Nations and stakeholders and an advertisement appeared in two local newspapers during the week of October 8th, 2001. The Ministry of Natural Resources is exempt from providing notification of this planning process on the Electronic Bulletin Registry, under Section 30 of the Environmental Bill of Rights (EBR).

A draft version of this SCI was sent for review to members of the public and First Nations and MNR staff both at the district and regional office levels during July 2002. Comments provided to MNR were considered in this final document. Upon approval of this SCI, public notification will occur via mail-out to interested stakeholders and a notice will appear in the same two local newspapers.

Public consultation will be solicited during a review of any future land use proposals that would require new decisions to be made. In addition, any future proposal and/or any new, significant management direction considered will be published on the Environmental Bill of Rights Registry.

The implementation of the policy will be the mandate of the MNR at the district level; however, association with various partners may be sought to assist in the delivery. This SCI is a working document; therefore it may be necessary to make revisions to it from time to time (see section 6.4 Implementation and Plan Review).

4.0 Background Information

4.1 Location and Site Description

4.1.1 Location

The Cartier Moraine Conservation Reserve is approximately 60 kilometres northwest of the City of Greater Sudbury (Map 1) and is located within the Sudbury MNR District, in the Northeast Region MNR area. The site is located in the geographic townships of Hess and Cartier in the Territorial District of Sudbury and is directly north of the Town of Cartier, which forms the site's southern boundary. The Canadian Pacific Railway and Highway 144 border the site on the west (Map 2). The northern edge of the conservation reserve is bound by a temporary mining claim. The following table describes the location and provides administrative details of the site:

Name	Cartier Moraine
	Conservation
	Reserve
Eco-Region	4E Mississagi
Eco-District (Hills	4E-3
1959)	
Eco-Region	4E
Eco-District (Crins	4E-3
and Uhlig 2000)	, = 0
MNR	Northeast Region
Administrative	Sudbury District
Region	Sudbury Area
District/Area	Oddbdry / wod
Size	43 ha
Nearest Town	Cartier
	Cartier, Hess
Townships	
OBM Number	450051700
Topographical Map	Cartier
Name/Number	41 /12
Latitude/	46°43'N
Longitude	81°33'W
Elevation	Minimum: 435m
	Maximum: 460 +m
Watershed	Lake Huron Basin
	2CF
Wildlife	WMU 39
Management Unit	
Forest Unit	Spanish Forest

Table 1: Location and administrative details for the Cartier Moraine Conservation Reserve.

The Cartier Moraine Conservation Reserve is located in Eco-District 4E-3, also known as the Mississagi Site District. This Eco-District is located in the center of Eco-Region 4E approximately between 81°30'W and 84°W Longitude, and 46°20'N and 47°50'N Latitude, see Map 3 (Crins 1996).

4.1.2 Physical Site Description

The climate in Eco-District 4E-3 has been classified as a humid low boreal (LBh) eco-climatic region. Monthly precipitation ranges from 50-100mm with maximums occurring in the summer period. The frost-free period extends from May to mid-September, while temperatures above 0°C last approximately seven months (Ecoregion Working Group 1989).

The vegetation of Eco-District 4E-3 is a transition between that associated with Boreal forest types and those characteristic of the Great Lakes-St. Lawrence forest region. The Cartier Moraine Conservation Reserve is within the Temagami Forest Section of the Great Lakes-St. Lawrence Forest Region (Rowe 1972). The Temagami Forest Section is defined as a large upland area north of Lake Huron. stretching east and west from Lake Temagami, and occupying a generally southward-sloping surface. The typical association of this forest section consists of eastern white pine with scattered white birch and white spruce or a mixture of white birch, pine and spruce, with balsam fir, trembling and largetooth aspens (Rowe 1972).

The 1990 Forest Resource Inventory (FRI) for the Spanish Forest was examined to determine the forest composition of the conservation reserve. The FRI reveals that the site is composed of four working groups: white birch (Bw), jack pine (Pi), poplar (Po), and black spruce (Sb) (Map 4). The majority of the site is occupied by a white birch stand with a composition of 60% white birch, 30% poplar, and 10 % jack pine (Sb6Po3Pj1) (Map 5). The other forest stands are much smaller in size and are composed of stands dominated by either jack pine or poplar with mixtures of white birch and white pine. The forest in the conservation reserve and the general area is immature to mature indicating that the area was disturbed at

some point in the past. The ages for the forest stands range from 56 years for the poplar and white birch, 66 years for the jack pine, to 91 years for the black spruce stand (Map 6).

Non-forest vegetation communities also exist in this site district, such as wetlands of varied composition (bogs¹, fens², marshes) and pioneer communities of mosses and lichens that are associated with rock outcrops, and cliffs (Crins 1996).

The Cartier Moraine Conservation Reserve is located within the dome-like topography of the Canadian Shield, which is composed of Precambrian bedrock. The site is within the southern limits of the Abitibi Uplands subdivision. In Ontario, the Abitibi Uplands physiographic area is further divided into the Cobalt Plain in the east and the Penokean Hills that forms the north shore of Lake Huron. It is within the northeast corner of the Penokean Hills that the conservation reserve is located. This landscape is controlled by folded Proterozoic³ bedrock that extends from Sault Ste. Marie to Sudbury (Bostock 1970).

Folds and faults are frequent throughout the Abitibi Subprovince and the granite⁴-greenstone⁵-gneiss⁶ rocks of this area were developed between 2.8 and 2.6 billion years ago. The Vignette Lake Fault (northwest trending) comes to a meeting point with the Clear Lake Fault (northeast trending) just north of the Cartier Moraine Conservation Reserve in Hess Township. A deposit consisting of Iron (Fe) and Copper (Cu) metals can be found there.

During the Pleistocene Epoch, all of Ontario was covered by a succession of ice sheets separated by interglacial periods. The last glacial advance, referred to as the Late or Classical Wisconsinan Stage, began approximately 23,000 years before present (Barnett 1992). During these periods a thin, discontinuous cover of till was deposited throughout the area by glacial ice. During these periods a thin, discontinuous cover of till was deposited throughout the area by glacial ice. The till in along the northern rim of the Sudbury Basin, just south on the conservation reserve, has been generally described by Burwasser (1979) as sandy loam till with the actual range from sandy silt till through sand till. The till deposits that form the Cartier Moraine consist of sandy gravel, boulder sand, and lesser silty-clay till. Clasts account for 30% of the till and range in size from 1cm to 4m (Figure 1), erratic boulders, up to 10m in diameter, have also been found (Figure 2). Most of the larger clasts are similar to the underlying bedrock which means that they likely did not travel far. However, their sub-rounded to well-rounded shape indicates that there was very active and efficient "milling" occurring during their deposition. The till is mostly non-sorted and non-stratified and ranges from 1m - 30m in thickness.

¹ Bog: Peatland with water table at or near the surface with surface often rising above surrounding terrain. Sites are strongly acid and nutrient poor. Bogs contain peat accumulations of more than 40 centimetres deep. Species include *Sphagnum* spp. or Peat Mosses and ericaceous shrubs including Bog Rosemary (*Andromeda glaucophylla*), Leatherleaf (*Chamaedaphne clayculata*), Creeping Snowberry (*Gaultheria hispidula*), Bog Laurel (*Kalmia polifolia*), and Labrador Tea (*Ledum groenlandicum*) (Harris et al. 1996).

² Fen: Peatland with water table at or above the surface with very slow water movement through communities via seepage that results in a more mineral, nutrient and oxygen-rich environment than bogs. Generally fens contain peat accumulations greater than 40 cm deep. Sometimes floating mat with sedges, mosses, shrubs, and sparse tree layer present. Indicator plants include: Larch (*Lanx laricinea*) and Eastern White Cedar (*Thuja occidentalis*) or Black Spruce (*Picea mariana*), Speckled Alder (*Alnus incana*), Dwarf Birch (*Betula pumila*), Bluejoint Grass (*Calamagrostis canadensis*), assorted sedges, Sweet Gale (*Myrica gale*) with ericaceous shrubs present – especially in more nutrient poor fens (Harris *et al.* 1006).

³ Proterozoic relates to the later part of the Precambrian Era, characterized by the oldest forms of life.

⁴Granite is a course-grained igneous or fire-formed rock composed mostly of minerals including quartz, mica, feldspar, etc.

⁵Greenstone is an igneous rock containing feldspar and hornblende.

⁶ Gneiss is a course grained metamorphic rock.



Figure 1: Clasts ranging in size on the Cartier Moraine Conservation Reserve.



Figure 2: Large erratic boulder on the Cartier Moraine Conservation Reserve.

During deglaciation, the melting ice front deposited several east-trending moraines. The ice marginal positions have been poorly defined and the resulting moraines have been mapped as either end moraines or hummocky moraines. Boissonneau (1965, 1968) identified a number of these moraines – including the Cartier I, Cartier II and Cartier III moraines. Cartier Moraine I is represented within this conservation reserve (Noble 1983) and can be described as a hummocky ridge with moderately broken relief and is composed of mainly interstratified glacial till and glaciofluvial sands and gravels.

Ice-contact stratified drift deposits occur on the southern side of each phase of the Cartier Moraine. Stratified and unsubdivided bedrock-drift complexes occur in the northern and southeastern portions of the site. Till deposits can be found in the southwestern tip of the site and south of the stratified drift deposits (Map 7) (Kor 2002). Glaciofluvial outwash deposits mark major meltwater channels which breach the Cartier Moraines along the Agnes River, Bluewater-

Kennedy Lakes system, and the Spanish River (Card and Innes 1981).

Erosion has been minimal since the disappearance of the ice sheet and the lowering of glacial lake water to present day levels. Organic deposits have been developed in depressions in the land surface. These organic deposits often overlie sand, silt and clay material. Modern alluvium⁷ has been deposited along the courses of existing creeks and rivers.

The Cartier Moraine is an upland site, consisting of mainly Luvisols⁸ or Loamy Very Fine Sand. The soil has formed from the parent till material and is made up of approximately 80% fine sand with smaller percentages of clay and silt.

The Cartier Moraine lies within the Spanish River watershed. Run-off from the moraine is intermittent in nature and flows from the site into Hess Creek or Clear Lake and subsequently into the primary water system of the Spanish River and south to Lake Huron.

4.1.3 Administrative Description

The legal description of the Cartier Moraine Conservation Reserve, regulated as Schedule 41 in Ontario Regulation 686/00 made under the *Public Lands Act* on December 20, 2000 and filed on December 21, 2000 amending Ontario Regulation 805/94, reads:

In the geographic Townships of Hess and Cartier, in the Territorial District of Sudbury, containing 43 hectares, more or less, being composed of that part of the said Townships of Hess and Cartier designated as Part 1 on plan known as C202 Cartier Moraine Conservation Reserve filed on October 19, 2000 in the Office of the Surveyor General.

The Cartier Moraine Conservation Reserve is located within the Ministry of Natural

⁷ Alluvium is defined as a deposit of fertile soils left during a time of flooding and is generally associated with river valleys or delta areas.

⁸ Luvisols are well to imperfectly drained mineral soils that have developed under the influence and growth and decomposition of forest vegetation in mild to cold climates. Their main characteristics are a light colored eluvial or leached Ae horizon and an illuvial or zone of accumulation textural B horizon (Clayton et al.1977).

Resources, Sudbury District administrative area, which covers an area of approximately 3, 207, 000 hectares.

The Cartier Moraine Conservation Reserve is also located within the legal boundaries of the Spanish Forest Sustainable Forest License area, which encompasses

was built adjacent to the town that is still heavily used today (MNR 1985).

4.3 Inventories

Table 2 indicates the current status of natural heritage inventory that has occurred or is required in the near future.

Survey Level	Earth Science	Life Science	Cultural	Recreational	Other
Reconnaissance	1988 (Noble and Phillips) March 2001 (Kor)	November 2000 (Morris)		2001 (Phillipp and Thompson)	Disturbance survey required
Detailed	Not required	Required	Not required	Required	Required
Further Requirements		Future ground surveys could be considered to enhance knowledge of life science values		All recreational trails should be identified via GPS and mapped	All known disturbances should be identified and mapped

Table 2: Inventory and Survey Information for Cartier Moraine Conservation Reserve

approximately 1.2 million hectares and spans three MNR Districts – Chapleau, Timmins and Sudbury.

4.2 History of the Site

The area where the Cartier Moraine Conservation Reserve is located would have been ice-free approximately 10, 000 to 11,000 years ago and would have been inhabited by Ontario's First Nations shortly after. There has been a European presence in the area since the mid-1700's when competition in the fur trade became intense. This lasted until the late 19th century when logging became the primary industry. The immediate area was logged for white and red pine and the Spanish River was used to transport the logs downstream. The arrival of the railway in 1883 changed transportation in the area and the town of Cartier sprung up east of the tracks. Local creeks, lakes and rivers continued to be used for log drives into the 1940s. Following the 1930s focus of logging changed from red and white pine days to the harvest of spruce pulp, jack pine axe made ties and mining timbers. During the 1940s, a small sawmill was operated at Cartier station with mining timbers and lumber being shipped by rail to Sudbury (Thorpe 1950). A sizeable rail yard

5.0 State of the Resource

The natural heritage of Ontario contributes to the economic, social and environmental well being of the province and its people. Protecting areas of natural heritage is therefore important for many reasons, such as maintaining ecosystem health and providing habitat for species in order to maintain species diversity and genetic variability. Protected areas also provide scientific and educational benefits, they generate tourism, which bolsters local and regional economies, and they provide places where people can enjoy and appreciate Ontario's natural diversity while enhancing their own health and well-being. In order to protect this vital natural heritage, Ontario has established a provincial parks and protected areas system to try and represent the entire suite of natural features, landscapes and ecosystems within the province. This representation and criteria to determine the current quality of that representation are discussed below (MNR 1997c).

Representation

Completing the system of parks and protected areas is based on the concept of representation - capturing the full range of Ontario's natural and cultural values. The goal of Ontario Parks is to place within the parks and protected areas system the best examples of our natural heritage including features, landscapes, and ecosystems at the Eco-District level⁹. The complete system must therefore protect a range of natural heritage values based on the geological and biological diversity of the province (Davidson 1997). The best examples of representative features are considered to be provincially significant and may even be nationally or internationally significant. Locally and regionally significant areas also contribute to the system if they have been classified as the best representation currently available and have therefore been identified in some areas to meet the targets of representation in each of the Eco-Districts.

The Cartier Moraine Conservation Reserve has been identified to protect a provincially significant earth science feature that was created by fluvioglacial processes more than 10, 000 years ago. Noble's (1983) classification system defines the Cartier Moraine as IIa-1 or moderately broken end moraine. End moraines represent the stationary position of an ice-front or where a glacier's retreat was halted by a cold climatic period. Successive halts in the retreat of the Laurentide Ice Sheet are marked by the I, II, and III Phases of the Cartier Moraine. The Cartier Moraine Conservation Reserve is the

type locality¹⁰ for the east-west trending band of recessional moraine segments designated as Cartier I. Therefore, the conservation reserve has captured elements of the Cartier I Moraine.

Life science representation is limited to only a few forest communities. Jack pine, mixed with white birch and poplar stands dominate the upland areas with black spruce present within the lowland areas of the site. Sugar and red maple co-occur with the birch and poplar but are not dominant within these communities. These communities are not considered provincially significant.

Quality of Present Representation
The quality of the representation or the current characteristics of the natural features found within the conservation reserve are as important as the overall representative features that are being protected. A number of factors are considered in evaluating a site and they include the following criteria: diversity, condition, ecological factors, special features and current land use activities.

a) Diversity

Diversity is a measure of the site's earth and life science heterogeneity or variety of natural heritage elements present within the site. Diversity is evaluated in terms of the number and range (variety) of the natural landscape features and landforms for earth science values and the relative richness and evenness of the site's life science components. Natural landscapes and known generalized vegetative communities will be the scale used for this SCI. Future aerial or ground reconnaissance surveys will enhance the MNR's knowledge of these features and possibly allow verification at a lower scale (e.g. species assemblages).

The Cartier Moraine Conservation Reserve's diversity is mostly noticeable through its landscape diversity. Although classified as one landform type, the moraine feature itself

_

⁹ Terrestrial diversity is defined on the basis of the 14 Eco-Regions and 67 Eco-Districts of the province which were classified by Hills (1959) and further modified by Crins and Uhlig (2000). An Eco-District is a distinctive physiographic area found within the Eco-Region. Each of the Eco-Districts contains landform patterns and biological productivity traits that distinguish it from the other Eco-Districts. In each Eco-District, smaller landscape units are defined, based on recurring landform patterns. These patterns, and the vegetative communities and species that they support, constitute the biological systems and values to be represented (MNR 1997c).

Type locality usually represents the sites where rock units were first identified, described and formally named. They are the localities against which all other occurrences of the unit are generally compared. Type localities are generally of the highest significant value, and may also have historical value as locations where the geology of a region was first described and ranked.

is diverse. By definition a moraine is a hummocky, uneven feature, thus there are low-lying pockets as well as high ridges, there are large areas of boulders, and large flat or gently sloped areas.

The Cartier Moraine Conservation Reserve also has diversity through the existence of a small lake and four different vegetative communities. The white birch and poplar dominated stands growing on the high ridge are different than the black spruce and jack pine communities in the low-lying areas. The lake and wetland communities host different species of wildlife and vegetation than the large wind-throw area.

The Cartier Moraine Conservation Reserve does not have a high degree of diversity in landform/vegetation units; however, it still contributes to the overall diversity of Ontario's parks and protected areas system most notably through its earth science landform feature.

b) Condition

Condition is the degree of past human and natural disturbances observed or recorded for the site. Overall the site is somewhat disturbed with the presence of an All Terrain Vehicle (ATV)/hiking trail that connects the town of Cartier to Clear Lake and a snowmobile trail that crosses the northeast corner of the site. Clearing of trails, fuel-wood cutting and recreation use (i.e. children's forts) have also negatively impacted the site. Natural disturbances also occur on this site. There is a large area of wind throw activity on one of the site's north-facing slopes.

c) Ecological Factors
Ecological factors refer to the current design
of the conservation reserve as noted by its
size, shape and its ability to buffer adjacent
land use activities. In addition the site's
current linkage to undisturbed landscapes
also contribute to the conservation reserve's
ecological integrity.

The site's boundaries have been artificially created by vectoring to avoid encroachment onto previously inhabited lands, including patent lands and an unpatented mining claim. Overall, the general configuration of the site is poor with no biological boundaries

available. The site's small size of only 43 ha was established to capture a portion of the significant earth science feature with a number of vegetative communities extending beyond the site's boundaries. The conservation reserve's biological diversity and overall ecological design would be enhanced if the site were expanded to the shores of Clear Lake; however, current mining tenure would make this problematic. Managing the limited life science values within the site, based on the current design will continue to make management and protection of these values difficult.

Finally the site is somewhat supported by the presence of nearby candidate and regulated protected areas which, as a collective, contribute to the representation of that portion of the parks and protected areas system and surrounding landscape located near Sudbury.

d) Special Features

To date, no additional special features beyond the representation of Cartier Moraine I, have been noted within the site.

e) Current Land Use Activities Current land use activities within the conservation reserve include snowmobiling, all terrain vehicle (ATV) use and hunting. Its location close to the town of Cartier makes it a favored travel corridor for recreationalists travelling from the town to other destinations within the surrounding landscape or for hunting moose, bear or deer. The site falls within a small portion of three active traplines and two active Bear Management Areas as well as two Baitfish Harvest Allocations. An active snowmobile trail maintained by Onaping Falls Snowmobile (OFS) Club crosses the northeast corner of the site, extending north to provide access to Geneva Lake. A second trail that connects the town to Clear Lake also crosses the site. Both these trails are ATV accessible during the summer months. The gravel road on the western edge of the conservation reserve allows access to the water control dam on Clear Lake.

Summarv:

This conservation reserve is the best representative example of moderately broken end moraine (IIa-1) defined by the

provincially significant Cartier Moraine I. This landform supports four landform/forest community/age class units with no provincially significant life science values present within the site.

The site is somewhat disturbed and has a low diversity level with core value protection only possible for that section of the moraine and forest communities defined within the site. Earth or life science features that extend beyond the boundaries of this small conservation reserve will have to be managed cooperatively outside the site. Adequate protection of core values will require consideration for the values within the conservation reserve and cooperation with adjacent landowners and users to help compensate for the poor design of the site. The earth science feature is not significantly sensitive to current permitted uses; however, additional disturbance due to increased trail development or forest disturbance by humans would further impact the quality of the earth science feature present within the site.

5.1 Social/Economic Interest in the Area

The Cartier Moraine Conservation Reserve contributes to the local economy and society through the opportunities presented below.

a) Linkage to Local Communities
The Cartier Moraine Conservation Reserve
is located directly adjacent to the town of
Cartier and has therefore long provided
recreational/commercial opportunities for the
residents of and visitors to the Cartier area.
Travelers along Highway 144 and the
Canadian Pacific Railway can access this
site as well by going through the town of
Cartier.

The gravel road and trails that cross the site provide access both to the site and to the large lakes beyond the site boundaries. The snowmobile trail is part of the Sudbury Trail Plan and is maintained by the Onaping Falls Snowmobile Club. Reports from club members indicate that the trail receives daily winter use, peaking on weekends. The trail also doubles as an ATV trail in the offseason and is used by many of the same people. The trail going through the center of

the site is mainly an ATV trail used by local residents to gain access to Clear Lake and other waterbodies for fishing and hunting. Snowmobilers may also be using the trail in the winter to access the lakes for ice fishing and to gain direct access to and from the snowmobile trail network. Winter snowmobiling activities bring tourism to the town of Cartier and the economic benefits are recognized through spending at the local convenience stores, restaurants and gas stations. Economic benefits are also seen at local establishments from other recreational activities, such as large game hunting parties and trapping, which provides a source of income to local trapline holders.

Also of importance to the people of Cartier is the role that the conservation reserve may play in their water supply. The town of Cartier used to receive its water through a piping system from the CPR dam on Clear Lake. Recently, however, CPR dug wells throughout the town of Cartier to provide water to the residents. Therefore, the Cartier Moraine may play a significant role in the quality and supply of the ground water that feeds the wells in Cartier.

b) Heritage Estate Contribution
The Cartier Moraine Conservation Reserve
contributes to the province's parks and
protected areas system through its
regulation, representation and the long-term
management of its natural heritage values.

The protected area system allows for permanent protection of our history and special features, and it will provide valuable areas as benchmarks to scientists and educators as more and more of Ontario's land base is developed or altered from its natural state. Each protected area contributes to this heritage in its own unique way – whether it is a contribution to the preservation of an earth science value, a life science value, a recreational or economic opportunity, or through its cultural/historical significance. The designation of an area as a conservation reserve helps define its role in the system.

The Cartier Moraine Conservation Reserve's distinct contribution is a combination of earth science/glacial history preservation, and educational and recreational opportunities.

The Cartier Moraine Conservation Reserve also offers a historical preservation opportunity, as the area has likely been important since early European contact and especially since the introduction of the railway. Prior to these times this area has been an important part of the First Nation culture/history. The Cartier Moraine Conservation Reserve also offers accessibility, therefore scientists, educators and recreationalists alike will not have difficulty in accessing the site to learn more about and enjoy its values.

Long term management must consider public access to the site, the conservation reserve protection objectives, and commitments made in the *OLL Land Use Strategy* (MNR 1999).

c) First Nations

The Cartier Moraine Conservation Reserve lies within the Robinson-Huron Treaty Area, Treaty #61. The area in question has been identified as being within the Sagamok First Nation's traditional lands. The protection of this area as a conservation reserve and the Statement of Conservation Interest are not meant to infringe on the Treaty and Aboriginal Rights of any First Nation in any way. Traditional uses such as hunting, fishing, trapping and gathering will be respected. At the present time, there are no known land claims by First Nations for the area in question.

d) Mining Interests

This conservation reserve has no mining tenure within it. Currently there is one active mining claim outside the conservation reserve bordering the north boundary in Hess Township, and several other mining claims beyond that. Mining and surface rights have been withdrawn from staking within the conservation reserve boundaries under the Mining Act (RSO 1990 Chapter M.14). Mining will not occur in any regulated protected area.

e) Forest and Fire Management History
The conservation reserve is relatively
undisturbed and has not been recently
affected by forest harvest activities or recent
fires.

- Other Government Agencies, Departments or Crown Corporations Other Government Agencies that may have an interest in the site include the Ministry of Citizenship (MCzP), the Ministry of Tourism. Culture and Recreation (MTCR), the Ministry of Transportation (MTO), and the Ministry of Municipal Affairs and Housing (MMAH). Although there are no known cultural heritage values present at this time if values were identified in the site the MNR would work with the MCzP to ensure proper protection of any cultural heritage resources. The MNR will also work in conjunction with the MTCR to identify/enhance any potential tourism opportunities, in particular where resource-based tourism (RBT) potential is identified. RBT operations include hunting and fishing as well as eco-tourism opportunities. Proper evaluation will be undertaken where opportunities are identified to ensure consistency with the management policies of this conservation reserve. The MTO may express an interest in the site for future development considerations on Highway 144. The MMAH also needs to be aware of the location of this site in order to prevent further encroachment during possible future expansions of the town.
- g) Non Government Organizations and other Industry interests
 Non Government organizations who may express an interest in the Cartier Moraine Conservation Reserve may include: the Partnership for Public Lands, the Federation of Ontario Naturalists, Northern Ontario Tourist Outfitters, the Sudbury and Area Trapper's Council, the Ontario Federation of Anglers and Hunters, and the Sudbury Trail Plan Association.

The existence of this protected area will provide enhanced recreation potential and these associations may wish to approach the MNR as stewards of the protected area. The MNR will work in conjunction with any association who identifies an interest or compatible use potential within the site.

Other industries or companies that may have an interest in the conservation reserve may include the Prospector's Association, the Sustainable Forest Licensee (Domtar Inc.), and the Aggregate Producer's

Association. The interests of these companies or industries may be limited to recognizing the boundaries and values protected within the conservation reserve in order to uphold the MNR's management policies.

5.2 Fisheries and Wildlife

There have been no detailed fish or wildlife studies conducted within the site with the exception of some values assessment for the site and surrounding area. There is one small lake (Northeast Lake) within the site boundaries of the Cartier Moraine Conservation Reserve (Figure 3). Lake surveys have not been conducted on this particular lake. However, white sucker and baitfish are known to be contained in the lake and the site is located within a bait fish allocation area. Clear Lake, beyond the site boundaries, is known for walleye and smallmouth bass.



Figure 3: Northeast Lake, within the Cartier Moraine Conservation Reserve.

The wildlife that could be found on the site would be consistent with typical wildlife found in Eco-District 4E-3. Wildlife may not be easily observed within the conservation reserve, especially large mammals that range widely because of the site's small size, its location in the vicinity of a populated area or because of the high amount of recreational use presently occurring on the site. On the other hand, the vicinity of human populations may be a ture to some animals seeking an easily accessible food source.

During a site visit in November 2001 the presence of ruffed grouse and shotgun shells were noted indicating the opportunity

for and the presence of small game/fowl hunting. The site is divided by three registered traplines and also falls into two Bear Management Areas. Hunting and trapping are long-standing traditional activities and they are also a vital part of the local economy. Traplines have been present in the area since the 1950's and the local area has been successfully managed to maintain a healthy balance of wildlife populations. This area is within Wildlife Management Unit 39.

It is not known if any vulnerable, threatened or endangered species exist on or near the site. Further detailed habitat studies may be warranted.

5.3 Natural Heritage Stewardship

The Cartier Moraine Conservation Reserve. a provincially significant type locality end moraine feature, contributes to the natural heritage earth science representation. Life science representation exists in four landform/forest community/age class units that are found on the conservation reserve. A reconnaissance visit in November 2001 also confirmed the existence of common ground cover plants characteristic of the forests northwest of Sudbury. A complete inventory of flora would identify additional species that inhabit the site. The current condition of vegetation is disturbed where trails have been cleared through the site and there is also an extensive area of natural wind throw.

The conservation reserve also contributes to the recreational opportunities of the parks and protected areas system. The conservation reserve has a potential to contribute to MNR's long term inventory, monitoring and assessment program or possibly research based on excellent access and previously noted natural heritage values; however, currently there are no monitoring or research programs in place at this time.

5.4 Cultural Heritage Stewardship

There are no known cultural heritage values within the Cartier Moraine Conservation Reserve and no detailed research has been conducted as of this date to document

possible cultural heritage values. However, the area has been occupied for over a century and the possibility of heritage values being present does exist. If archaeological/cultural resources are discovered within the conservation reserve, proposals pertaining to the development/use of these cultural resources may be screened through direction provided in Conserving a Future For Our Past: Archaeology, Land Use Planning & Development In Ontario (MCzCR 1997).

5.5 Land Use/Current or Past Development

The conservation reserve consists entirely of Crown land and is unencumbered by any land use permits, licenses of occupation, leases or mining claims. Current mining tenure is held bordering the site to the north and access to this mining claim can be gained through existing trails. No mines have been developed on the site in the past. The limits of the town of Cartier (held in patent to CPR) form the southern boundary of the site. The only development on the site at this time is the extensive ATV/snowmobile trail system, which is not fully known or mapped on the ministry's database. Site visits have also verified that over the years people have been using the area as an unauthorized dumping ground. Several old automobiles and other debris were noted. The site may have also typically been used for fuel-wood collection. Access to and through portions of the site occurs via Highway 144, the CPR railway and through the streets of Cartier as well as the snowmobile/ATV trail system.

5.6 Commercial Use

Commercial use of the site includes black bear hunting, baitfishing and commercial fur harvesting.

5.7 Tourism/Recreational Use/Opportunities

Current recreational uses and opportunities of the site include hiking, skiing, ATV use, snowmobiling, bird watching, and associated nature activities. It is not likely that boating/canoeing occur to any high degree on the lake within the site boundary, however boaters travel through the site to

access Clear Lake to the north. Evidence also suggests that the site hosts "backyard" camping and bonfires. The trail network is the only form of existing infrastructure on the site.

One local tourist outfitter, Miller's Spring Bear Hunt, catering primarily to non-resident bear hunters, brings tourism to the area. Other tourism opportunities include snowmobiling and moose hunting. There are currently no proposals for new recreational uses or tourism facilities within this site.

5.8 Client Services

Currently, visitor services at the Sudbury District MNR office are limited to responding to inquiries about access, natural heritage features and boundaries. No formal information or interpretive facilities currently exist within the conservation reserve.

Other client services include providing clients with maps, fact sheets and other information gathered on the area, such as the Earth, Life and Recreational Inventory work.

6.0 Management Guidelines

6.1 Management Planning Strategies

The land use intent outlined in the OLL Land Use Strategy (MNR 1999) provides context and direction to land use, resource management, and operational planning activities on Crown land. Commitments identified in the above strategy and current legislation (Policy 3.03.05 PLA) will form the basis for land use within the Cartier Moraine Conservation Reserve. Management strategies for these uses must consider the short and long-term objectives for the reserve. For up to date information on permitted uses refer to the Crown Land Use Atlas.

Protected areas will be managed to retain and/or restore natural features, processes and systems. They will also provide opportunities for compatible research, education and outdoor recreation activities (MNR 1997c). Proposed uses and development will be reviewed on a case-by-case basis. A Test of Compatibility, (Procedural Guidelines B – Land Uses PL 3.03.05) must be passed before they are deemed acceptable. The emphasis will be on ensuring that the natural values of the conservation reserve are not negatively affected by current and future activities. Therefore any application for new specific uses will be carefully studied and reviewed via the above environmental screening process.

Management strategies will also be consistent with the objectives of increasing public awareness, promoting responsible stewardship, providing marketing opportunities, and identifying Inventory Monitoring Assessment Reporting (IMAR) potential.

6.2 "State of the Resource" Management Strategies

The development of this SCI and the long-term management and protection will be under the direction of the MNR's Sudbury Area Supervisor. The following section will deal with the management strategies that are specifically laid out to maintain, protect and enhance the existing natural heritage values and land use activities of the Cartier Moraine Conservation Reserve.

Natural Heritage Values

The management intent for the Cartier Moraine Conservation Reserve will be to allow for natural ecosystems, processes and features to operate undisturbed with minimal human interference while providing educational, research and recreational activities. Forest ecosystem renewal will only be entertained via a separate vegetative management plan.

Forest fire protection will be provided as per fire strategies used on surrounding public lands, under the direction of the provincial fire strategy. All wildfire occurrences will be considered a high priority and will actively be suppressed. Prescribed burning will be conducted only under the direction of the provincial fire strategy and authorized for the conservation reserve under a separate vegetative management plan. Prescribed

burning may be utilized if deemed necessary to emulate natural disturbances and renew forest communities, prepare seed beds for research and/or education purposes or to meet additional objectives determined within a separate vegetative management plan. Consideration for the earth science feature will be the governing priority in any future vegetative management plan.

Defining compatible uses, enforcing regulations and monitoring and mitigating issues will protect all earth and life science features. Industrial activities such as commercial timber harvest and new hydro generation will not be permitted within the conservation reserve. Extraction of unconsolidated sand, gravel, soils or peat is not permitted. Energy transmission. communication and transportation corridors or construction of facilities are discouraged within the boundaries of the conservation reserve. Such structures negatively impact on the quality of representation features that require protection. Alternatives should be reviewed via larger landscape planning processes. New roads for resource extraction and/or private use will not be permitted. Other activities that do not pass a Test of Compatibility will be prohibited (MNR 1997a).

The introduction of exotic and/or invasive species will not be permitted. Programs may be developed to control forest insects and diseases where there is a concern that significant values may be compromised. Remedies must focus on the outbreak or infestation. Native biological or non-intrusive solutions should be applied whenever possible.

The collection/removal of vegetation and parts thereof may be permitted subject to a Test of Compatibility, the Area Supervisor may authorize such activities for purposes of wild rice harvesting, food harvesting, removing exotic species, rehabilitating degraded sites within the reserve, collecting seeds for maintaining genetic stock and/or for inventory or research. The cutting of trees for non-commercial purposes (e.g. fuel-wood) is not permitted.

MNR will provide leadership and direction for maintaining the integrity of this site as a

heritage estate. To ensure MNR protection objectives are being fully met within the conservation reserve, activities on the surrounding landscape should consider the site's objectives, heritage values and the design flaws currently present. MNR via input and plan review will ensure the conservation reserve's values are considered in local and adjacent land use strategies and plans. Research, education and interpretation will be encouraged to provide a better understanding of the management and protection of the natural heritage values and will be fostered through local and regional natural heritage programs, initiatives and partnerships. Furthermore, adequate protection of core values will require cooperation with adjacent landowners and users to help compensate for the conservation reserve's small size and poor design.

Fisheries and Wildlife

Sport fishing and hunting will be permitted within this conservation reserve. Fishery and wildlife resources will continue to be managed in accordance with specific policies and regulations defined by the Ontario Ministry of Natural Resources under the Fish and Wildlife Conservation Act and the Sudbury Area Supervisor. Management of these resources will have consideration for the earth and life science features contained within the site.

Wildlife viewing activities may be enhanced via client services with the existing trail networks supporting this activity. New trail development should be entertained for this activity (see Land Use/Past and Existing Development).

There are no plans for conducting lake surveys on Northeast Lake, and the lake will be allowed to progress naturally through its life stages.

Cultural Heritage Values

It is not known if cultural heritage values exist in the Cartier Moraine Conservation Reserve, however, if values are confirmed management would be consistent with Conserving a Future For Our Past: Archaeology, Land Use Planning & Development In Ontario (MCzCR 1997). There is a high possibility that cultural or

historical resources do exist since the Cartier Moraine Conservation Reserve has been accessible for over a century.

Research and studies should be conducted to determine the potential and/or existence of cultural or archeological resources. However, at this time additional field surveys are not a priority.

Land Use/Past and Existing Development
The sale of lands within the conservation
reserve is not permitted as per the OLL LUS
(MNR 1999). No new recreational camps
will be permitted. Road realignments,
telecommunications and other resource
networks will be discouraged from crossing
the site and interrupting the conservation
reserve's natural state. New roads for
resource extraction and/or private use will
not be permitted.

The provincially significant type locality end moraine feature should not be subjected to further trail developments or major trail improvements. Existing authorized trails can continue unless there are significant demonstrated conflicts. Presently, these trails have already been cleared and are very wide; therefore minimal maintenance should be required to keep the trails in their present condition. Herbicide spraying will not be permitted in the maintenance of any trail

The current trail system should be properly mapped and monitored. It is recommended that all current trails be mapped using new technologies (i.e. Global Positioning Systems (GPS)) and added into the ministry's database. Photographs should be incorporated into any long term monitoring program in order to compare the condition of the trails over time.

Through the Ministry's plan input and review program, applications for more intense use will be reviewed to ensure natural heritage values within the conservation reserve are considered and protected in planning decisions on adjacent private land.

Any new developments (e.g. tourism developments, trails) proposed for the conservation reserve must go through a Test of Compatibility to ensure that the natural heritage values within the site are protected. If a proposal is considered, public consultation may be required. If accepted, an amendment of the SCI would be required.

The town of Cartier and the Onaping Falls Snowmobile Club should be approached to arrange an agreement for proper stewardship of the Cartier Moraine Conservation Reserve. The site requires a great deal of garbage cleanup and debris removal, which could be done in association with regular trail maintenance and community use. Alternative strategies for improving the quality of the resource found within the site should be advanced.

Social/Economic Interest

The economic contribution of the Cartier Moraine Conservation Reserve to the local community could be harnessed through marketing strategies that will maintain existing tourism use in the area allowing the Town of Cartier to benefit through money spent at the local businesses. Socially, this area provides a recreational reserve for the local people and tourists to enjoy for their own health and well being. The people of Ontario will generally benefit from this conservation reserve through direct enjoyment of the area or through the knowledge that a provincially significant earth science feature and our glacial history has been preserved. Other interest groups, such as colleges and universities, can benefit from this conservation reserve as a place to study the natural features and processes. The town of Cartier could benefit economically through the presence of such interest groups in the community. The contribution of the Cartier Moraine Conservation Reserve to the water quality and supply in the town of Cartier is mostly unknown however, water management strategies are not seen to be necessary at this time.

Commercial Activities

Commercial, non-industrial activities such as fur harvesting, baitfish retrieval and Bear Management Areas will be managed according to prescriptions in the *Land Use Strategy* (MNR 1999). Fur harvesting traplines and baitfishing operations will be permitted to continue since there are no

demonstrated conflicts between these activities and the values being protected. New operations would be subjected to a Test of Compatibility to ensure that the wildlife populations could sustain additional activity. Existing Bear Management Areas (BMAs) will be permitted to continue, however, new operations will not be permitted as per the *Land Use Strategy* (MNR 1999). MNR managers will work with operators to ensure that the natural heritage values within the conservation reserve are respected.

Aboriginal Interests

Traditional activities and aboriginal rights as defined in the Robinson-Huron Treaty #61 and other relevant Acts, will not be affected within the boundaries of this conservation reserve. The Cartier Moraine Conservation Reserve is within the Sagamok First Nation's area of interest and all Aboriginal and treaty rights will continue to be respected. The First Nation communities are encouraged to continue to use these areas as they have in the past.

Tourism and Recreation

The earth and life science features and their protection, shall be the overall theme for tourism and recreation within the conservation reserve. There are no existing tourism facilities located in or directly adjacent to this conservation reserve. Any proposed tourism infrastructure or facilities would be required to undergo at Test of Compatibility and if accepted, further planning would occur, requiring public consultation and an amendment to this document. The existing local tourist outfitter, Miller's Spring Bear Hunt, can continue accessing this reserve as they have in the past, however, MNR will work with the proponent to ensure the values of the conservation reserve are respected and maintained to their highest level possible (see previous Commercial Activities Strategies).

Most recreational activities that have traditionally been enjoyed in an area can continue provided they pose little or no threat to the natural ecosystems and features protected by the conservation reserve. Current activities include bird watching, hiking, skiing, ATV use and

snowmobiling. Camping may also be a current use of the conservation reserve and will be permitted to continue.

Snowmobiles and All Terrain Vehicles (ATV's) are permitted on existing trails within the Conservation Reserve. Under the OLL LUS (MNR 1999), all mechanized travel is restricted to existing trails. Off trail vehicle use is permitted for the retrieval of game only. To protect the natural heritage features within the conservation reserve, MNR will seek direction from local communities on how to reduce off trail use, if such activities become problematic.

It is unlikely snowmobiling has any major effect on the Cartier Moraine, since it occurs in the winter on a layer of snow. ATV use results in a considerably higher impact and therefore should be monitored to ensure that the effects of this activity are not damaging the earth science value. Further information on this will be noted in this section after the first review of the Statement of Conservation Interest is completed. It will be determined at that time whether there has been a significant degradation to the earth science feature due to ATV use.

Client Services

Clients indicating their interest in the management, planning and future use in the conservation reserve will be put on a mailing list and notified of any future planning initiatives for the site.

Client services will be provided at the Sudbury District office and at nearby provincial parks through interpretive pamphlets and knowledgeable staff. In the future, information may be delivered from different sources; however, MNR Sudbury District office will be the lead agency for responding to inquiries regarding access permitted and restricted activities, values and recreation opportunities. A management agreement may be pursued with an appropriate partner to share responsibilities for information services and the delivery of other aspects of this SCI. For example having the interpretive pamphlets available at local convenience stores and other appropriate businesses could provide additional client services venues.

It is further recommended that visitors and conservation reserve users and the local population be informed of the significance and sensitivity of the Cartier Moraine via factsheets, community visits and other educational or interpretive programs.

6.3 Promoting Inventory Monitoring and Assessment Reporting and Research

Scientific research by qualified individuals or institutions, which contributes to the knowledge of natural and cultural history and to environmental and recreational management, will be encouraged. Requests or applications to conduct research will be filtered through the Sudbury District MNR office to ensure that the studies are non-invasive and that no values will be damaged in the process. Research programs will be subject to ministry policies and other legislation.

Approved research activities and facilities will be compatible with the protection objective. Any inventory, monitoring, assessment reporting (IMAR) or research developments or facilities will not be considered until a Test of Compatibility is conducted and proposal is approved by the Sudbury Area Supervisor. The Test of Compatibility or environmental screening process could include a review of the demand for structures or activities and may require more detailed life or earth science or cultural information and possibly more detailed planning. IMAR will be consistent with provincial/regional protocols and/or strategies. Permanent plots or observation stations may be established to which researchers can return over time. The Sudbury Area Supervisor may approve the removal of any natural or cultural specimen by qualified researchers. Any materials removed will remain the property of the Ministry of Natural Resources. Any site that is disturbed will be rehabilitated as closely as possible to its original state. The Sudbury Area Supervisor may apply additional conditions.

Particular research may focus on the interrelationship with other nearby protected areas – in particular to gauge the effectiveness of isolated protected areas

and how these areas need to be connected through supportive landscape management in order to maintain ecosystem health and diversity. Also the effects of straight boundaries versus naturally delineated boundaries should be explored. Other specific research projects that could be undertaken may include: the affects of human disturbance on the landform. determination of the existence of any rare, vulnerable or threatened species, vegetation climax community, or wind throw area regrowth. Further research and monitoring requirements will be determined through forthcoming regional/provincial strategies.

6.4 Implementation and Plan Review

The Cartier Moraine Conservation Reserve Statement of Conservation Interest will be reviewed on an ongoing basis and as required. Implementation of the SCI and management of the reserve are the responsibility of the Sudbury Area Supervisor. Partnerships may be pursued to address management needs.

Adaptive management strategies will be used in the event of new information that has a significant effect on the current Statement of Conservation Interest. If changes in management direction are needed at any time, the significance of the changes will be evaluated. Minor changes that do not alter the overall protection objectives may be considered and approved by the District Manager without further public consultation and the plan will be amended accordingly. In assessing major changes. the need for a more detailed Resource Management Plan will first be considered. Where a RMP is not considered necessary or feasible, a major amendment may be considered with public consultation. The Regional Director will approve major amendments.

6.5 Marketing

The Cartier Moraine Conservation Reserve will be marketed as a distinctive natural

heritage area having a provincially significant type locale earth science feature. Factsheets will be prepared to inform the public about these values which will be available at Sudbury District MNR office and at Halfway Lake Provincial Park and Windy Lake Provincial Park as well as possibly local businesses in Cartier and surrounding area. Marketing efforts to increase use are not a priority and will be kept to a minimum.

7.0 References

Barnett, P.J. 1992. Quaternary geology of Ontario, *in* Geology of Ontario; Ontario Geological Survey, Special Volume 4, Part 2, p.1011-1088.

Boissonneau, A.N. 1965. Surficial geology of Algoma, Sudbury, Timiskaming and Nipissing; Ontario Department of Lands and Forests; Map S465, Scale 1:506 880.

Boissonneau, A.N. 1968. Glacial history of northeastern Ontario: II the Timiskaming-Algoma area; Canadian Journal of Earth Sciences, Vol.5, p.97-109.

Bostock, H.S. 1970. Physiographic subdivisions of Canada; *in* Geology and Economic Minerals of Canada, Geological Survey of Canada, Economic Geology Report no. 1, p. 11-30.

Burwasser, G.J. 1979. Quaternary geology of the Sudbury area, District of Sudbury; Ontario Geological Survey, Report 181, 103 pp.

Card, K. D., and Innes, D. G. 1981. Geology of the Benny Area, District of Sudbury. Ontario Ministry of Natural Resources. 117 pp.

Clayton, J. S., Ehrlich, W.A., Cann, D.B, Day, J.H. and Marshall, I.B. 1977. Soils of Canada. Volume 1 Soil Report. Research Branch, Canada Department of Agriculture, Ottawa, Canada.

Crins, W. J. 1996. Life Science Gap Analysis for Site District 4E-3. Ontario Ministry of Natural Resources Internal Report.

Crins, W.J. and Uhlig, P.W.C. 2000. Ecoregions of Ontario: Modifications to Angus Hills' Site Regions and Districts. Ontario Ministry of Natural Resources internal report.

Davidson, R. J. 1997. Completing the Provincial Park System, A Priceless Legacy. Occasional Paper 3. Ontario Ministry of Natural Resources. 23 pp. Ecoregions Working Group, Canada Committee on Ecological Land Classification. 1989. Ecoclimatic Regions of Canada, Ecological Land Classification Series No. 23. Sustainable Development Branch, Canadian Wildlife Service, Conservation and Protection, Environment Canada, Ottawa, Ontario. 118 pp.

Harris, A.G., McMurray, S.C., Unlig, P.W.C., Jeglum, J.K., Foster, R.F. and Racey, G.D. 1996. Field Guide to the Wetland Ecosystem Classification for Northwestern Ontario. Ontario Ministry of Natural Resources, Northwest Science and Technology. Thunder Bay, ON. Field Guide FG-01. 74 pp. + Appendices.

Hills, G. A. 1959. A ready reference to the description of the land of Ontario and its productivity. Ontario Department of Lands and Forests.

Kor, P.S.G. 2000. Cartier Moraine C202 Earth Science Checksheet. MNR internal inventory record. 2pp.

Kor, P.S.G. 2002. Cartier Moraine C202 Earth Science Inventory. MNR internal inventory record.

Ministry of Citizenship, Culture and Recreation. (Ferris, N., Ross, B., and Wong, W.) 1997. Conserving A Future For Our Past: Archaeology, Land Use Planning and Development in Ontario;. Ontario Archaeology Society, Inc. 44 pp.

Ministry of Natural Resources. 1985. Chapleau District Background Information – Historic Use. Sudbury District Office Spanish River Files – 82.3 History and Culture.

Ministry of Natural Resources. 1992. Report on the status of provincial parks in the site regions and districts of Ontario. Parks Environmental Assessment Section, Provincial Parks and Natural Heritage Policy Branch. MNR Internal Report.

Ministry of Natural Resources. 1997a. Conservation Reserves, Policy PL 3.03.05. 8 pp. Ministry of Natural Resources. 1997b. Conservation Reserves, Procedure PL 3.03.05. 22pp.

Ministry of Natural Resources. 1997c. Nature's Best. Ontario's Parks and Protected Areas: The Framework and Action Plan. 37 pp.

Ministry of Natural Resources. 1999. Ontario's Living Legacy Land Use Strategy. Queen's Printer for Ontario. 136 pp.

Ministry of Natural Resources. 2000. Beyond 2000. Queen's Printer for Ontario. 20 pp.

Ministry of Natural Resources. 2001. Planning Process for Conservation Reserves Statement of Conservation Interest (SCI) and Resource Management Plans (RMP). Northeastern Region Guidelines. Version 2.1, Unpublished Internal Document, 49 pp.

Morris, E. 2000. Cartier Moraine C202 Life Science Checksheet. MNR internal inventory record. 2pp.

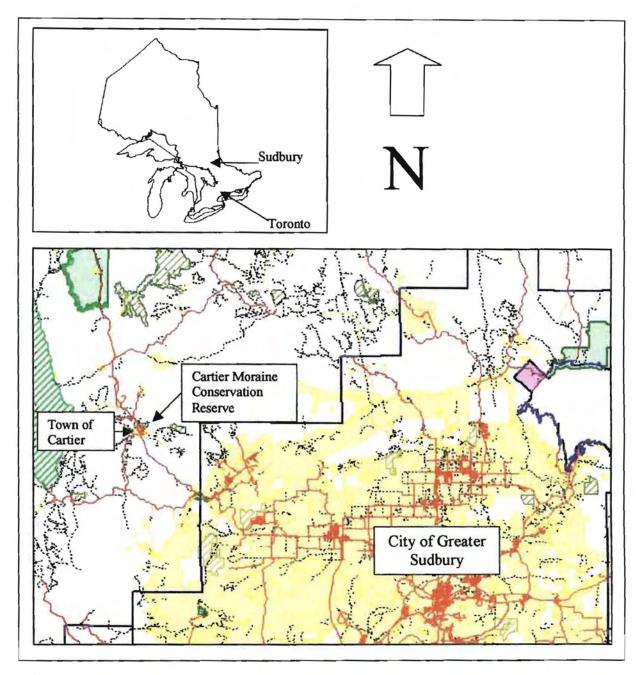
Noble, T. W. 1983. Life Science Report, Site Region 4E, Northeastern Region. Ontario Ministry of Natural Resources. 150 pp. (with additional pages in checksheets and appendix, 1:250 000 maps).

Phillip, K. and Lajeunesse, M. 2000. Cartier Moraine Conservation Reserve C202 Recreation Inventory Checklist. MNR internal inventory record. 2pp.

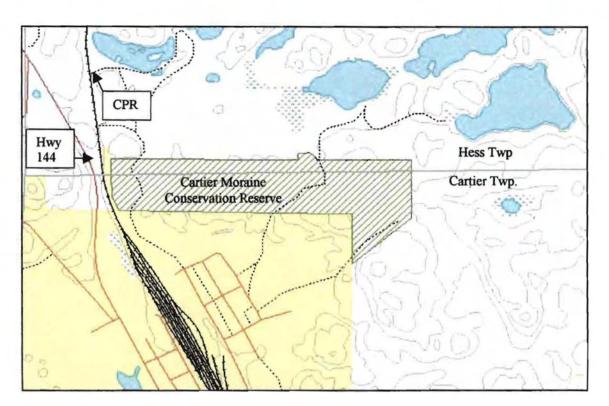
Rowe, J. S. 1972. Forest Regions of Canada. Department of Fisheries and the Environment Canadian Forestry Service Publication No. 1300. Ottawa, Ontario. 172pp.

Thorpe, T. 1950. Review of the Logging and Pulp Operations in the Sudbury District During the Years (1901-1950). Ontario Department of Lands and Forests Internal Report. 66p.

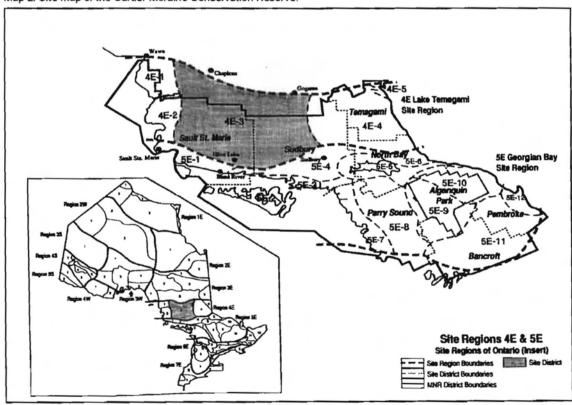
8.0 Maps



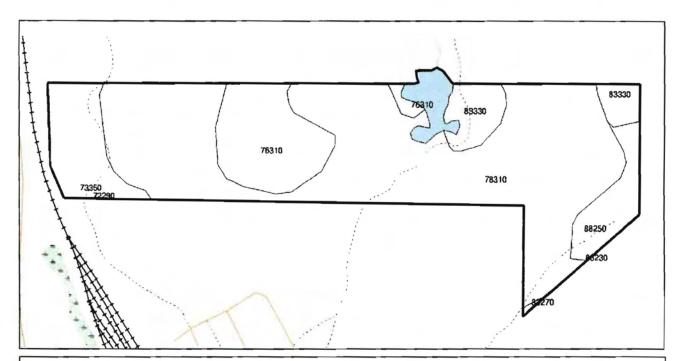
Map 1: Inset of Ontario showing location of Sudbury; larger map showing location of the Cartier Moraine Conservation Reserve in relation to Sudbury.



Map 2: Site map of the Cartier Moraine Conservation Reserve.



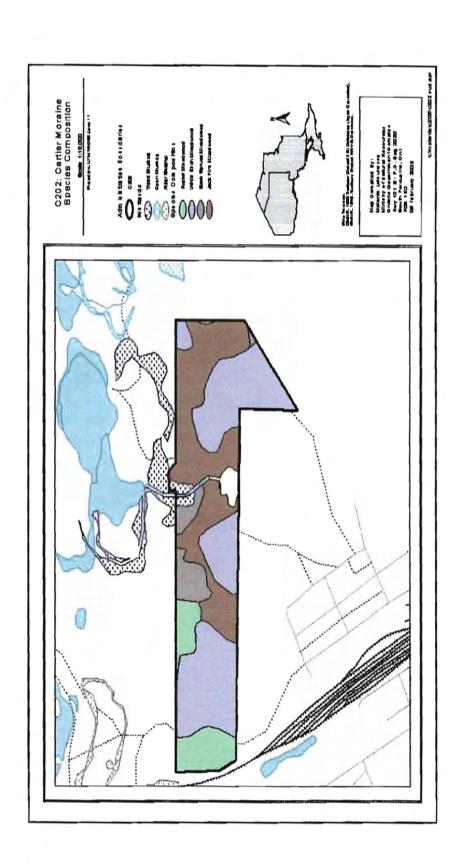
Map 3: Location of Site District 4E-3 (Crins 1996).



l													1
١	MU	MAP	STAND	WG	AREA	TYP	OWNER	YR-ORG	AGE	HT	STKG	SITE	SPC
l	161	174505170	73350	33	38295	20	1	945	45	15.0	8.0	3	PO 5BW 3SB 1PJ 1
١	161	174505170	78310	36	270284	20	1	945	45	13.0	0.7	3	BW 6PO 3PJ 1
١	161	174505170	76310	7	53686	20	1	935	55	15.0	0.7	2	PJ 5BW 3SB 1PO 1
ı	161	174505170	76310	7	2940	20	1	935	55	15.0	0.7	2	PJ 5BW 3SB 1PO 1
	161	174505170	83330	7	17585	20	1	935	55	15.0	0.7	2	PJ 5BW 3PO 1SB 1
١	161	174505170	83330	7	8596	20	1	935	55	15.0	0.7	2	PJ 5BW 3PO 1SB 1
ı	161	174505170	88250	11	24231	20	1	910	80	15.0	0.7	1	SB 4BW 3PW 3
ı	161	174505170	72290	33	120	20	3	945	45	15.0	0.8	3	PO 5BW 3SB 1PJ 1
i	161	174505170	85230	36	16	20	1	940	50	15.0	0.9	2	BW 4PJ 3MS 1PO 1SB 1
l	161	174505170	83270	36	549	20	1	920	70	16.0	0.9	3	BW 5PJ 3PO 1SB 1
1													

Map 4: 1990 Forest Resource Inventory (FRI) map and chart.

Cartier Moraine Conservation Reserve

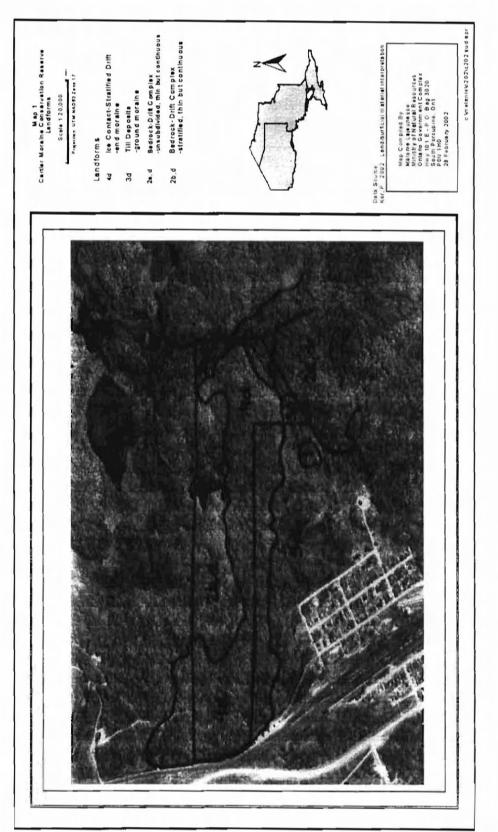


Map 5: Species Composition.

22

Map 6: Age Distribution.

26



Map 7: Landforms.

27

9.0 Appendices Appendix A: Permitted Uses Table

Permitted Uses Table for Conservation Reserves As Per Policy

Activities	Conservation R	eserve Policy	Policy Clarification			
-	Permitted? Y=Yes, N=No, M=N	•				
	Existing	New				
Recreation						
Sport Fishing	Y					
Sport Hunting	Υ	Y				
Food Gathering	Υ	Υ Υ				
Facility Infrastructure	M	M	Any new facilities are subject to a "test of compatibility" and approval by the Area Supervisor.			
Rock Climbing/ Caving	М	M	Rock climbing and/or caving is permitted where it does not detrimentally affect the values to be protected.			
Canoeing/ Kayaking	Y	Y				
Motorized Boating	Y	Y				
Picnicking	Y	Υ				
Camping	М	M	Camping is permitted where it does not detrimentally affect the values to be protected.			
Trails Hiking Trails	Y	M	Any new hiking trails will be subject to a "test of compatibility" and approval by the Area Supervisor.			
Cross-Country Skiing Trails	Y	М	Any new cross-country skiing trails are subject to a "test of compatibility" and approval by the Area Supervisor.			
Cycling/ Mountain Biking Trails	Y	M	Any new cycling trails are subject to a "test of compatibility" and Approval by the Area Supervisor.			
Horse Riding Trails	Y	M	Any new horse riding trails are subject to a "tes of compatibility" and approval by the Area Supervisor.			
Snowmobiling Trails	Y	М	Any new snowmobiling trails are subject to a "test of compatibility" and approval by the Area Supervisor.			
Non-Trail Snowmobiling	M	М	Non-trail snowmobiling is only permitted for the retrieval of game.			
ATV Trails	Y	M	Any new ATV trails are subject to a "test of compatibility" and approval by the Area Supervisor.			
Non-Trail ATV Use	М	M	Non-trail ATV use is only permitted for the retrieval of game.			

· · · · · · · · · · · · · · · · · · ·		1	
Science, Education and Heritage Appreciation			
Research	Y	Y	
General Walking	<u>'</u> Y	Y	
		Y	
Photography and Painting	,		
Wildlife Viewing	Y	Y	
Outdoor Education/ Interpretation	Y	Y	
Collecting	N	N	Collecting may be permitted as part of an authorized research project. The issuance of permits will be considered on a per-site basis.
Commercial Activities			
Food Harvesting	M	М	Any new food harvesting is subject to a "test of compatibility" and approval by the Area Supervisor".
Fishing	Y	М	Any new commercial fishing is subject to a "test of compatibility" and approval by the Area Supervisor.
Baitfish Harvesting	Y	M	Any new baitfish harvesting operations are subject to a "test of compatibility" and approval by the Area Supervisor. Transfer requests for existing baitfish operations will be considered on an on-going basis subject to a review of potential impacts.
Trapping	Y	M	Any new traplines are subject to a "test of compatibility" and approval by the Area Supervisor. Transfer requests for existing traplines will be considered on an on-going basis subject to a review of potential impacts.
Trap Cabins	Υ	N	
Resort – Outpost Camps	Y	M	Any new outpost camps/resorts are subject to a "test of compatibility" and approval by the Area Supervisor. Transfer requests for existing outpost camps/resorts will be considered on an on-going basis subject to a review of potential impacts.
Outifitting – Bear Management	Υ	N	Transfer requests for existing Bear Management Areas will be considered on an on-going basis subject to a review of potential impacts.
Wild Rice Harvesting	Y	М	Any new wildrice operations will be subject to a "test of compatibility" and approval by the Area Supervisor.
Resource Management			
Inventory/	Υ	Y	
Monitoring	, 	,	

Featured Species Management	М	М	Any new featured species management is subject to a "test of compatibility" and approval by the Area Supervisor.
Natural Systems Management	М	М	Any new natural systems management will be subject to a "test of compatibility" and approval by the Area Supervisor.
Industrial Activities			
Timber Harvesting	N	N	
Mineral Exploration	N	N	
Mining	N	N	
Hydro Power Generation	N	N	
Energy Transmission Corridors/ Communication Corridors	Y	N	New communication lines and transmission corridors are discouraged from within conservation reserves but can be considered under unusual circumstances where there are no other viable alternatives and where the line/corridor does not significantly impact the values the site is trying to protect. Approval from the Area Supervisor is required.
Transport Corridors	Y	N	
Resource Access Roads	Y	N	Existing roads can continue to be used. Continued use will include maintenance and may include future upgrading. New roads for resource extraction will not be permitted, with the exception of necessary access to existing forest reserves for mineral exploration and development.
Private Access Roads	Υ	N	
Fuelwood Cutting	N	N	The cutting of trees for non-commercial purposes may be authorized by permit subject to a review of the impact of the values to be protected. This flexibility is only for leaseholders and property owners who do not have road access.
Extraction of Peat, Soil, Aggregate	N	N	
Other Activities		_	
Land Disposition	M	М	Sale of Crown lands in a conservation reserve is not permitted, except for certain minor dispositions (e.g. sale of road allowance in front of existing cottage, sale of small parcels to provide adequate installation of a septic system) where it does not detrimentally affect the values the area is intended to protect. Renewals of existing leases or land use permits will be permitted. Tourism facilities can apply to

Appendix B: SCI Test of Compatibility

From the SCI Test of Compatibility NER Guideline in Planning process for Conservation Reserves Statement of Conservation Interest (SCI) and Resource Management Plans (RMP) Northeast Region Guidelines Version 2.1 September 17, 2001 Appendix 4, page 44.

Test of Compatibility:

- 1. Conformity to SCI This is not applicable to evaluating current or new uses that come forward during the SCI planning process. However, the SCI should include a statement that speaks to the required screening of any future use or uses that are not covered in the current SCI.
- 2. Screening Process proposed uses for the area must be assessed before they are approved. To establish a minimum standard, NER recommends that the Screening Process identified in Section 4.2 of A Class EA for Provincial Parks and Conservation Reserves Phase IIb: Draft Class EA (subject to approval by MOE) be used to screen projects and options.

The Screening Criteria from the draft Class EA (Table 4.1) are further detailed below within the context of SCI planning.

- 3. Impact Assessment the Test of Compatibility from the Conservation Reserve Policy PL 3.03.05 identifies the classes of values and main concepts that need to be considered in determining the impacts of uses on a specific Conservation Reserve. These include:
- Natural heritage
- Cultural
- Research activities
- Current uses
- Area administration
- Accommodating the use outside the CR
- Socio-economics
- Area accessibility.

The class EA (Table 4.1) presents similar values and concepts under the following considerations:

- Natural environment
- Land use, resource management
- Social, cultural and economic
- Aboriginal

The above considerations and classes of values are meant to assist planning staff in answering the following questions for any potential use:

• Will the new use impact any values within the Conservation Reserve?

- If so how?
- To what degree?
- Is it tolerable?

The new screening process and associated criteria identified in Table 4.1 of the draft Class EA gives planning staff more direction than the Conservation Reserve Policy 3.03.05. However this section attempts to assist planning staff by providing some direction for further interpreting the criteria to complete a Test of Compatibility for uses within a Conservation Reserve.

The following information for each Conservation Reserve is available and can be used to assess the required criteria:

- Background information and current inventory data
- Current inventory evaluations (e.g. earth, life and recreational check-sheets)
- Future ongoing analysis on the site

Interpretation of Background Information & Current Inventory Data:

Background information files, summaries and other data can be beneficial in determining additional criteria that could be added to or address criteria already mentioned in the EA screening process. Criteria that are linked to habitat needs or specific life or earth science features are often first record during a District's initial review of a site. Databases such as NRVIS or documents such as Lake Survey files, Site District Reports or Forest Management Plans can identify the location of values and sometimes determine a value's significance or sensitivities.

Current Inventory Evaluations:

The most current state of the resource for a specific OLL Conservation Reserve will be the earth, life and recreational check-sheet. These documents determine the current earth and life science values, their present state and their significance. The recreational check-sheets determine current recreational features and current and potential recreational activities and feature significance and sensitivity to present and future uses.

For earth and life science check-sheets, five (5) major sections are completed that include; representation and the quality of the representation (e.g. based on condition, diversity and ecological considerations) and special features. These five categories are reflected within the screening criteria presented in draft Class EA document or could be used to develop additional criteria. Some thoughts concerning the five categories are further discussed below.

Representation:

Representation within OLL inventoried sites contain the type, number, location and shape of the community based values within the Conservation Reserve. For example the number of different forest cover types, wetland and freshwater communities, earth science features or recreational features defined in recreational check-sheets. The survey determines if the values are totally within the site or if the value straddles the site's boundary? This section and the significance section of the check-sheet can help you define significant earth or life science features, important wildlife habitat, or record the location and extent of old growth within a site or other features. Representation determines not only specific communities or special features but establishes the core protected areas within the Conservation Reserve, which is a value that has to be protected as well. Finally, any list of screening criteria should mention the affect a potential permitted use may have on the quality of the representation present within the site. The quality of the site's representation is mentioned in the following three categories below.

Condition:

Condition is the level of natural and human disturbance that the site has experienced to date. The major natural disturbances in Northeast Region include; burned, blown down, flooded or insect effected stands or areas. Human disturbances could include; clear-cut areas, mining related sites, drainage areas, ditches or pits, utility corridors, railways, roads, hiking or ATV trails, assess points, dams, cottages or other facilities on site. Such actions or structures can effect the site negatively by influencing specific special features (e.g. nest sites or wildlife travel corridors) or severing significant communities or the Conservation Reserve's core protected areas. This section could help interpret the following screening criteria; affect on water quality, specific species or habitat needs or criteria that speak to undisturbed core protected areas. Such core protected areas criteria could include for example - affect a permitted use or potential use has on natural vegetation and habitat through fragmentation or how use could affect easily eroded or sensitive wind blown deposits?

Diversity:

This is a measure of the site's life and earth science heterogeneity. For earth and life sciences the evaluation is based on the number and variety of natural landscape features and landforms for earth science values and the relative richness and evenness of a site's life science components. For our life science check-sheet inventory we determine richness by counting the number of vegetative cover types present within a site and evenness as the proportion of each cover type represented within a site. So an OLL site that has many cover types of roughly the same size is more diverse than a site with few cover types or where a site has the same number of cover types but has reduced evenness

(e.g. one cover type dominates with the other cover types present but with little area devoted to them). Criteria that speak to all aspects of diversity should be part of any screening process.

Ecological Considerations:

This is where we discuss the design of the site, its strengths and weaknesses and potential problems that may arise during planning. Ecological considerations include; size, shape, buffering capacity from adjacent land use activities, watershed location and linkage to the larger landscape. Generally speaking the following are some *rules of thumb*;

- Larger sites are preferred over smaller sites because of their greater potential for ecological diversity and stability.
- Rounder sites are better than elongated sites for they have more intact core and can buffer adjacent land use activities better than elongated sites.
- Sites that contain headwaters have more control over environmental inputs than sites located down stream.
- Biological boundaries that are linked to larger undisturbed lands are better than cultural boundaries such as roads or railway lines that sever the site from its larger landscape for long periods of time. Cultural boundaries are preferred over vector boundaries that can divide or fragment core protected areas

So by looking at the size, shape and location of a site with respect to its larger environment, planners may be able to address specific screening criteria. Such screening criteria could include; affect water quality or quantity, affect on fish and wildlife habitat and linkages, affect of drainage, sedimentation and erosion, potential long term planning problems because a site is very small in size or linear in shape, etc.

Special Features:

Of all the data that is collected within a site, the special features section may be the most easily understood values. Generally landscape and habitat values are mentioned under the representation section of the check-sheet with specific values such as; Old Growth, Species at Risk (SAR), colonial birds, moose aquatic feeding areas, raptor nests, etc. are presented within this section. Data are available from FMP's or NRVIS databases as well as fish and wildlife files and reports and know recreation values available from District staff. The Class EA screening criteria contains a number of these values.

Note: Within the check-sheets be sure to review the significance level, recommendations and associated documentation listed with any particular check-sheet. For more information on check-sheet development see *J.E. Thompson*, 2001. Life science check-sheets information template. OMNR internal report. 6pp.

Future Ongoing Analysis on the Site:

If during planning specific information is not available to complete impact assessment analysis, then SCI's should not the information gap and document the need to collect the required information in the future. In addition, future inventory, monitoring, assessment and research within the Conservation Reserve may also help planners and managers deal with future uses and impact assessments.

Appendix C: Public and Aboriginal Consultation Summary

1. Site Name and Proposed Size (ha):

Cartier Moraine
(43 Ha.)

2. Land Use
Strategy Area #:
Conservation
Reserve
C202

3. MNR
District:
Sudbury District

4.0 Public and Aboriginal Consultation

4.1 Public Consultation

Details of Public Consultation:

- District Manager letter was sent in October 2001 letting stakeholders know that
 planning was commencing for the Cartier Moraine Conservation Reserve and to
 notify us know by mail or phone if they were interested in being contacted when the
 draft SCI was ready for public review. Adjacent landowners, municipalities and other
 groups or individuals who may have had an interest in the site were contacted,
 including the following breakdown:
 - ✓ Ministry of Municipal Affairs and Housing
 - ✓ Nickel District Conservation Authority
 - ✓ Domtar Incorporated
 - ✓ Ministry of Northern Development and Mines
 - ✓ Ministry of Transportation
 - ✓ Local Service Board of Cartier
 - ✓ Bell Canada
 - ✓ City of Greater Sudbury
 - ✓ Spanish Forest Local Citizen's Committee
 - ✓ Inco Limited
 - ✓ Partnership for Public Lands
 - √ 61 interested individuals and/or adjacent landowners
- Newspaper advertisement in October 2001 asking the public to notify us if they are interested in being on the mailing list for review of the draft SCI. The ad appeared in the following papers:
 - ✓ Sudbury Star.
 - ✓ Le Voyageur
- The following summarizes the number of responses received:
 - ✓ 29 individuals and/or organizations would like to be notified when the draft SCI is for public review.
- District Manager letter sent in September 2002 letting stakeholders know the draft SCI is ready for public review. Letters were only sent to the 29 individuals and/or organizations that asked to be notified.

- The following summarizes the number of responses received:
 - √ 6 individuals and/or organizations requested copies of the draft SCI for review.

Summary of Significant Issues:

No issues were raised.

Analysis of Issues:

No issues were raised.

4.2 Aboriginal Consultation

Details of Aboriginal Consultation:

- District Manager letter sent in October 2001 to initiate consultation with First Nations on the planning on the Cartier Moraine Conservation Reserve. The letter was sent to the following:
 - ✓ Ojibways of Sucker Creek
 - ✓ United Chiefs and Council of Manitoulin
 - ✓ Wikwemikong Unceded Nation
 - ✓ Sheguiandah
 - ✓ Zhiibaahaasing
 - ✓ M'Chigeeng
 - ✓ Whitefish Lake
 - ✓ Sagamok Anishnawbek
 - ✓ Sheshegwaning
 - ✓ Wahnapitae
 - ✓ Wauwauskinga
- The following summarizes the number of responses received:
 - 1 band member from Whitefish Lake First Nation notified MNR that she would be interested in reviewing the draft SCI.
- District Manager letter and a copy of the draft SCI was sent in July 2002 to the following First Nations for comments:
 - ✓ Ojibways of Sucker Creek
 - ✓ United Chiefs and Council of Manitoulin
 - ✓ Wikwemikong Unceded Nation
 - ✓ Sheguiandah
 - ✓ Zhiibaahaasing
 - ✓ M'Chigeeng
 - ✓ Whitefish Lake
 - ✓ Sagamok Anishnawbek
 - ✓ Union Of Ontario Indians
 - ✓ Sheshegwaning
 - ✓ Wahnapitae
 - ✓ Wauwauskinga
- The following summarizes the number of responses received:
 - √ 12 Verbal (phone conversations initiated by MNR)

- District staff met with:
 - ✓ Chief of the Ojibways of Sucker Creek (Sept. 12/02)
 - ✓ Lands technician from Sagamok Anishnawbek (Sept. 30/02)
 - ✓ Robinson-Huron Chiefs (Oct. 16/02)
 - ✓ Director of Sustainable Development for Wahnapitae First Nation (Nov. 1/02)
 - ✓ Chief of Wikwemikong (Nov. 14/02)
 - ✓ Chief of Sheshegwaning (Dec. 3/02)
 - ✓ Lands technician from Whitefish Lake First Nation (Jan. 10/03)
 - ✓ Lands technician from Wikwemikong First Nation (Feb. 11/03)
 - The Chief of Ojibways of Sucker Creek met with MNR staff on September 12, 2002 to discuss OLL. He expressed no concern with the sites being planned for this year for his community but knew there would be an impact at the treaty level. He mentioned that he would speak to the Union of Ontario Indians (UOI) to see if they could provide us with support on OLL. We never heard anything from UOI.
 - The Chief of McChigeeng First Nation was contacted by telephone on October 15, 2002 he discussed with Suzanne Arsenault the planning of this year's OLL sites. He was not concerned with any of them.
 - Zhiibaahaasing was contacted by telephone on September 23, 2002 and October 10, 2002 to discuss OLL. The lands technician mentioned he had reviewed the packages sent to the community by MNR and would contact us if the Chief wanted to meet. Despite our attempts no meeting has been scheduled to date.
 - Wikwemikong Unceded Nation was contacted by telephone on November 4, 2002 to discuss OLL. At that time we were informed that the Chief would be meeting with our DM the next week. Cindy Blancher-Smith and Bruce Richard met with the chief November 14, 2002 and discussed broadly the projects MNR Sudbury is involved in and how they could participate. The lands specialist met with MNR staff on February 11, 2003 to discuss OLL. A brief overview of OLL was given. He requested that a package be sent to him with a map of all OLL sites in the district, a status list of the sites and a summary of past consultation with his community.
 - Wauwauskinga was contacted by telephone on October 10, 2002 and December 9, 2002 to discuss OLL. The lands tech will be speaking to Chief and Council about OLL and will let us know if they want to meet us. Despite our attempts no meeting has been scheduled to date.
 - Sagamok Anishnawbek met with MNR staff on September 30, 2002 to discuss OLL. The lands technician mentioned the community would not be interested in the planning of this year's sites but it is part of the area where they traditionally hunt, fish and collect herbs.
 - Sheguiandah First Nation was contacted by telephone on October 1, 2002. The Chief said he would look at the packages sent to him and contact us if he would like to meet. Despite our attempts no meeting has been scheduled to date.
 - Sheshegwaning First Nation was contacted by telephone on September 10, 2002 about OLL. A meeting was scheduled. December 3, 2002 a meeting was held between MNR representatives and the Chief. He did not want to discuss OLL, he was upset with the consultation process to date with respect to the project. He felt OLL was infringing on aboriginal treaty rights.
 - Wahnapitei First Nation was contacted by telephone on September 12, 2002 to discuss OLL, a meeting was arranged. MNR staff met with the Director of Sustainable Development on November 1, 2002 to discuss OLL. He had an interest in reviewing 2 of this year's SCIs for C213 and C166.
 - Whitefish Lake First Nation was contacted by telephone on Nov. 1, 2002 to discuss OLL. The lands technician met with MNR staff January 10, 2003 to discuss OLL. He had no interest in the planning of this year's sites.
 - ◆ The Robinson-Huron Chiefs (15 of 19 attended) held a meeting on October 16, 2002 and MNR Sudbury was invited to present all projects in treaty area within the next

year. OLL was one of the projects mentioned and there was discussion on the project.

Summary of Significant Issues:

- First Nations do not consider any contact with MNR consultation.
- First Nations feel the OLL process is flawed. They believe that decisions are already made before consultation begins.
- First Nations feel the OLL process does not respect native culture and their rights.

Analysis of Issues:

None of the above issues can be dealt with through the planning exercise. It is our understanding that the policies which have been developed (and which are fundamentally disagreed with) are not up for further negotiation.

5.0 Recommendations:

Recommend that the statement of conservation interest be approved as the management direction for the conservation reserve.

6.0 Approval of Consultation Documentation

MNR District Contact Person: Natalie Avoledo OLL Planner Ph: (705) 564-7612 Fax: (705) 564-7879	Ontario Parks Contact Person: <u>N/A</u>
C. Blancher Smit	
Cindy Blancher-Smith District Manager Sudbury District Date March 2003	N/A

Appendix D: Statement of Conservation Interest Amendments